15th International Congress
of Chemical and Process Engineering

CHISA 2002

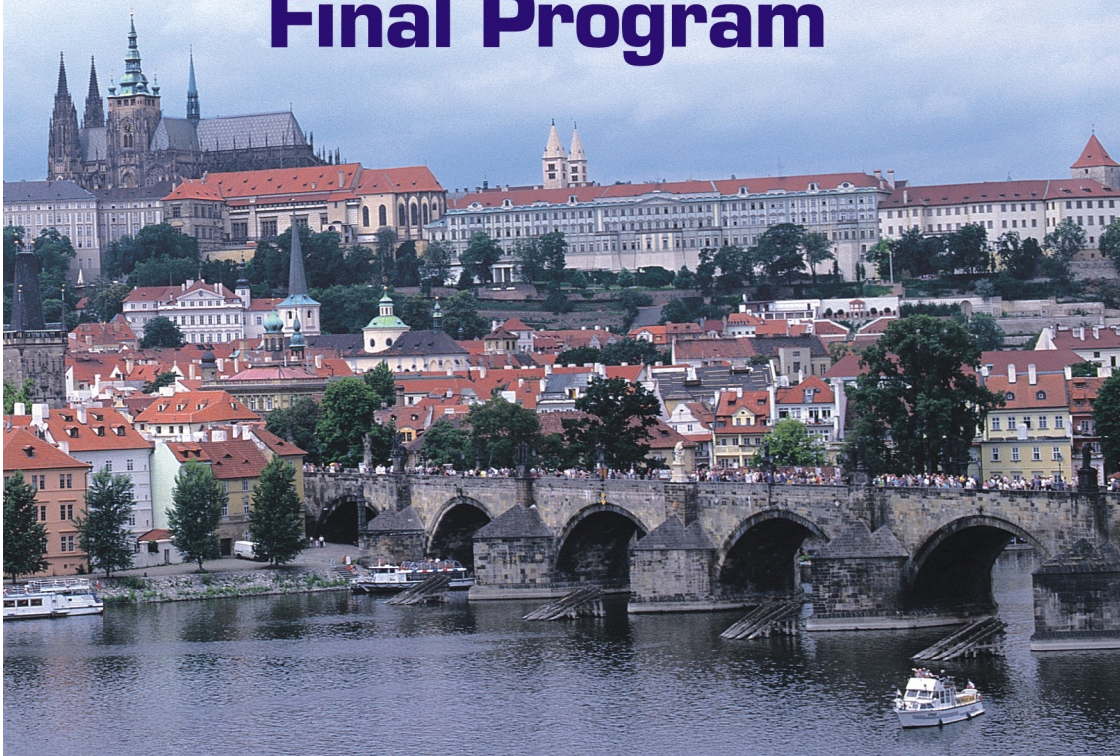
25 - 29 August 2002
Praha • Czech Republic

ČSCHI ČESKÁ SPOLEČNOST CHEMICKÉHO INŽENÝRSTVÍ
CZECH SOCIETY OF CHEMICAL ENGINEERING

EFCE European Federation of Chemical Engineering
EFCE Event 631

AIChE American Institute of Chemical Engineers
Cosponsor

Final Program



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CONGRESS COMMITTEES

Board of the Congress

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T. Míšek, Past Congress Chairman
I. Wichterle, Chairman of the Scientific Committee
J. Novosad, Chairman of the Organising Committee
J. Škarka, Secretary

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C. B. Cobb, President, American Institute of Chemical Engineers — AICHE
R. Burton, President, Asia Pacific Confederation of Chemical Engineers — APCCHE

Scientific Committees

General topics

Reaction engineering, catalysis and kinetics
V. Báleš (SK), K. Bouzek (CZ), B. Delmon (BE), G. Eigenberger (DE), S. Fogler (US), J. Kosek (CZ), M. Marek (CZ), F. Pla (FR), P. Rudolf von Rohr (CH), P. L. Silveston (CA), V. Tukač (CZ), A. A. Wragg (UK)

Separation processes and equipment
H. J. Bart (DE), M. Bleha (CZ), L. Boyadzhiev (BG), G. Casamatta (FR), R. C. Darton (UK), E. Drioli (IT), N. N. Kulov (RU), R. Pohorecki (PL), J. Procházka (CZ), Š. Schlosser (SK), V. Staněk (CZ)

Fluid flow and multiphase systems
H. E. A. van den Akker (NL), N. Brauner (IL), L. S. Fan (US), F. Magelli (IT), F. Muzzio (US), M. Růžička (CZ), M. Sommerfeld (DE), K. Svoboda (CZ), G. Wild (FR)

Phase equilibrium and fluid properties
K. Aim (CZ), G. Maurer (DE), E. H. Stenby (DK), A. Toikka (RU), P. Ungerer (FR), I. Wichterle (CZ)

Computer aided process engineering
D. Bogle (UK), E. Eckert (CZ), R. Gani (DK), M. Kubíček (CZ), W. Marquardt (DE), D. Šnita (CZ), G. A. Statyukha (UA)

Food processing and technology
Z. Bubník (CZ), I. Filková (CZ), M. Houška (CZ), P. Kadlec (CZ), B. McKenna (IE), P. Nesvadba (UK), M. Saska (US), Š. Schmidt (SK)

Education
J. E. Gillett (UK), V. Machoň (CZ), M. Molzahn (DE)

PRES 2002 — Fifth Conference on process integration, modelling and optimisation for energy saving and pollution reduction

Chairmen: J. Klemeš (UK), P. Stehlík (CZ)
Vice-chairmen: F. Friedler (HU), S. Pierucci (IT)
Members: M. Bagajewicz (US), S. Clave (ES), U. Diwekar (US), V. Dovi (IT), C.-J. Fogelholm (FI), A. Espuna (ES), L. T. Fan (US), M. C. Georgiadis (GR), P. Glavic (SI), A. Gorak (DE), J.-P. Gourlia (FR), G. Gruhn (DE), C. W. Hui (CN), J. Jelínek (CZ), B. Kalitventzeff (BE), P. Kapustenko (UA), D. Kukulka (US), J. Mann (US), F. Marechal (CH), M. Narodoslawsky (AT), A. J. J. F. Nossent (NL), J. Paris (CA), R. W. Pike (US), P. Pilavachi (EC), V. Plesu (RO), E. Ranzi (IT), D. Reay (US), R. Sabadi Diaz (CU), H. Singh (CA), R. Smith (UK), M. Sorin (CA), B. Thonon (FR), K. Urbaniec (PL), G. Vaccari (IT), V. V. Wadekar (UK), G. Wozny (DE), T. Zhelev (ZA), X. X. Zhu (UK)

Specialised symposia

Symposium on environmental engineering and management
J. Calzia (FR), E. Dinjus (DE), J. Horák (CZ), M. Punčochář (CZ), F. Santarelli (IT), J. Venselaar (NL)

Symposium on process safety
F. Babinec (CZ), J. Cisteró (ES), L. Laksoo (FI), H. J. Pasman (NL), R. Pastorino (IT), V. Pilz (DE), J. Škarka (CZ), R. D. Turney (UK), J. Weaver (US)

Symposium on transient multiphase flows
H. Arastoopour (US), B. J. Azzopardi (UK), M. Bohnet (DE), J. Drahoš (CZ), M. Giot (BE), G. Hetsroni (IL), G. Hewitt (UK), D. Mewes (DE), R. V. A. Oliemans (NL), A. Serizawa (JP), I. Zun (SI)

Symposium on micro- and mesoporous materials
B. Bernauer (CZ), J. A. Dalmon (FR), G. Emig (DE), P. Hudec (SK), M. Kočiřík (CZ), G. M. Rios (FR), O. Šolcová (CZ)

Symposium on supercritical fluids
R. Eggers (DE), Ž. Knez (SI), H. Sovová (CZ)

Chemical technology for sustainable future
J. Koubek (CZ), J. Mikulec (SK), J. Páca (CZ), J. Pašek (CZ), H. P. Schmauder (DE), C. R. Soccol (BR), J. Škarka (CZ), U. E. Viesturs (LV)

Mixing of suspensions
J. Bertrand (FR), P. Ditl (CZ), I. Fořt (CZ)

Cyclic operation of trickle bed reactors
A. A. H. Drinkenburg (NL), J. Hanika (CZ)

CAETS symposium on synergies of various engineering branches
J. Koubek (CZ), P. Zuna (CZ)

Organising Committee

J. Novosad, Chairman
R. Halfar, J. Kugler, Z. Mlýnská, V. Němec, T. Novosad, E. Pešinová

WELCOME

Welcome to the 15th International Congress of Chemical and Process Engineering CHISA 2002 to be held in Prague on 25−29 August 2002.

Congresses CHISA — 40 years of promoting international co-operation

In 2002, the CHISA jubilee Congress celebrates its 40th anniversary. The series of International Congresses CHISA taking place in the centre of Europe started in 1962 in Brno, Czech Republic, then continued in Mariánské Lázně, and since 1972 the Congresses have been held in Prague. However, it is worth mentioning that the logo was used for the national event as early as 1956. The word CHISA originates from the Czech acronym for "Chemical Engineering, Chemical Equipment Design and Automation" and later became a "trade mark" for large meetings traditionally devoted to the entire area of chemical and process engineering topics, covering science, research, development and industrial practice.

From the very beginning, CHISA Congresses have emphasised especially East-West-European and later pan-European contacts. Nevertheless, the stepwise development during the last decade testifies a much larger broadening of geographical horizons. This is evidenced by a permanent increase of participation from both the American subcontinents and from the Mediterranean Basin, the Near East, and Asian-Pacific regions. All these facts are transforming the one-time European Congresses into an event of world importance which is of interest for chemical and process engineers.

By 1 August, over 1100 participants from more than 60 countries have been registered to deliver almost 1400 papers.

GENERAL INFORMATION

Congress venue and language

The Congress takes place on the premises of the Czech Technical University, Faculty of Civil Engineering and Architecture (in Czech: ČVUT — Fakulta stavebního inženýrství a architektury), Praha 6-Dejvice, at Technická and Thákurova Streets (Metro A station Dejvická, en route from airport to the city centre).

The Congress language is English. No simultaneous translation will be provided.

Congress Office and registration

The Congress Office is open for registration, accommodation and information at the Congress site on Saturday, 24 August at 14−20 h. and on Sunday, 25 August at 10−20 h. The Office is operating from Monday till Thursday at 8−17 h.

Congress opening

The Congress will officially begin with an Opening ceremony and party on Sunday, 25 August at 20− 22 h. in the Municipal House of Prague (Obecní dům, Metro B station "Náměstí Republiky").

Addresses and contacts

Organising Committee

Post mail and Express Courier: CHISA 2002, Novotného lávka 5, 116 68 Praha 1, Czech Republic (c/o Jan Novosad)
Telephone: +420 2 2108 2248
Fax: +420 2 2108 2366 or +420 2 3333 5529
E-mail: org@chisa.cz

Scientific Committee

Fax: +420 2 2092 0661
E-mail: chisa@icpf.cas.cz

Internet website

www.chisa.cz/2002

SCIENTIFIC PROGRAM

Goals

The CHISA Congress with all its topics and specialised symposia supports the concept of sustainable development — a concept aimed at the future of mankind.

Convinced that chemical engineering includes, masters and creates most of the tools that play a key role in realising this concept, chemical engineers try to find the specific and most effective ways to maximise this effort. This striving includes formulation of new targets of individual branches of chemical engineering science and practice, developing new methods for achieving them, dissemination of relevant information among specialists from Europe and the whole world, and supporting young engineers in entering and understanding the profession.

Congress structure

The Congress consists of the four following structures:

- General topics of chemical and process engineering
- PRES 2002 — Fifth Conference on process integration, modelling and optimisation for energy saving and pollution reduction. The Conference is accompanied with a short course
- Specialised symposia prepared in co-operation with the respective EFCE Working Parties or other recognised international bodies
- Exhibition MARCHES 2002

The technical program includes invited plenary lectures and keynote lectures, parallel lecture sessions, and poster sessions. Congress sections are clustered into five thematic groups.

Plenary and keynote lectures

Morning sessions start with two parallel plenary lectures delivered from 8.30 to 9.20 h. There will be fifty keynote lectures delivered in the respective sessions.

Lecture and poster sessions

Twelve parallel lecture sections will take place at 9.40–12.30 h. and 14.00–17.20 h. based on 20 minute rigid schedules. For keynote lectures 40 minutes are reserved. Poster sessions will take place the whole day from 9.30 to 17.20 h. However, presenters are responsible for their posters during the afternoon coffee break (15.20–16.00 h).

General topics

Original contributions, process applications, case histories, and state-of-the-art papers will be presented in sessions on

Reaction engineering
Separation processes
Fluid flow and multiphase systems
Heat transfer processes
Phase equilibrium and fluid properties
Computer aided process engineering
Food processing and technology
Particulate solids
Chemical engineering education

For details see the Table “Organisation of Scientific Program”.

Fifth Conference “Process integration, modelling and optimisation for energy saving and pollution reduction” — PRES 2002

Topics: Energy saving technology • Combined heat & power • Heat transfer and process integration • Process integration for sustainable development • Integration of renewables • Waste minimisation, processing and management • Heat utilisation in waste treatment • Batch processes • Dynamic, flexible and sustainable plant operation • Industrial & experimental studies • Industrial application & optimal design

Specialised Symposia

Symposium on environmental engineering and management
Organised in co-operation with the EFCE Working Party on Environmental Protection
Topics: Treatment and prevention of pollution of air, water and soil • Waste prevention and treatment including combustion • Material properties and ecological risks • Recycling, recovery and reuse of materials • Environmental management and integrated management systems

Symposium on process safety
Organised in co-operation with the EFCE Working Party on Loss Prevention and Safety Promotion
Topics: Hazard identification and risk assessment • Vapour cloud dispersion • UVCE and BLEVE accidents • Management of changes • Accident investigation

Symposium on transient multiphase flows
Organised in co-operation with the EFCE Working Party on Multiphase Fluid Flow
Topics: Transient change in overall system parameters • Application in reactors, pipelines and vessels

Symposium on micro- and mesoporous materials
Topics: Microporous and mesoporous materials • Nanosystems • Experimental techniques • Theory of sorption and mass transport • Percolation • Applications

Symposium on supercritical fluids
Topics: Phase equilibria and transport properties • Extraction and fractionation • Particle design, aerogels, porous materials • Chemical reactions and bioreactions in SF • Other applications

Chemical technology for sustainable future
Topics: Advanced and sustainable design • Renewable resources and energy — biomass, solar and reuse of materials • Cleaner processes • Sustainability approaches • Chemical chain management • Products life cycle • Towards hydrogen fuel economy • High performance materials

Mixing of suspensions
Organised in co-operation with the EFCE Working Party on Mixing
Topics: Solid concentration profiles • Experimental methods • Particle-liquid hydrodynamics • Static mixers • CFD

CAETS symposium on synergies of various engineering branches

Cyclic operation of trickle bed reactors

PRES 2002 — Compact heat exchangers course

9.00 h.	Welcome and Course introduction
9.30 h.	Overview of heat exchanger types
10.15 h.	Process Integration and Heat Exchanger Networks
11.15 h.	Exchangers with cross-corrugated passages and design details
13.30 h.	Design exploration with plate heat exchangers
13.45 h.	Plate-fin heat exchangers
14.30 h.	Design exploration with plate-fin heat exchangers
15.00 h.	Recent advances in shell and tube heat exchanger technology
15.45 h.	Recent advances in CHE technology
16.15 h.	Final discussion

Course Leader: Dr. Vishwas Wadekar, Research Manager at HTFS, Hyprotech UK Ltd, England

Speakers: Prof. P. Stehlík, Director of the Institute of Process and Environmental Engineering, Technical University, Brno, Czech Republic, Prof. R. Smith, Head of Department of Process Integration, UMIST, England, Dr. J. Klemeš, Senior Project Officer, Department of Process Integration, UMIST, England.

Sets of summaries with pre-prints on CD-ROM

Summaries are clustered according to the thematic groups as five sets numbered from 1 to 5 and distinguished by colour cover (c. f. the loose-leaf Final Program Overview). One set is included in Congress fee. Among Congress materials is the CD-ROM containing full texts of accepted lectures and posters.

Extra set of summaries and extra CD-ROM may be purchased at the Congress Office at a price of 10 EUR/each and 20 EUR/each, respectively. The sets and CD-ROMs can also be ordered after the Congress by contacting the Organising Committee.

Set 1 — Reaction engineering (Reaction engineering, catalysis and kinetics; Cyclic operation of trickle bed reactors)

Set 2 — Separation processes (Distillation and absorption; Phase equilibrium and fluid properties; Symposium on supercritical fluids; Extraction; Membrane processes; Adsorption and ion exchange; Symposium on micro- and mesoporous materials)

Set 3 — Fluid flow and multiphase systems (Fluid flow; Mixing; Fluidisation; Symposium on transient multiphase flows; Mixing of suspensions; Filtration; Particulate solids)

Set 4 — System engineering (Computer aided process engineering; PRES Conference; Heat transfer processes)

Set 5 — Systems and technology (Symposium on environmental engineering and management; Symposium on process safety; Food processing and technology; Chemical technology for sustainable future; Chemical engineering education)

Publication policy

No formal proceedings will be published excepting the pre-prints on CD-ROM. Therefore, authors are free to publish their papers at will after the Congress. Selected papers from PRES 2002 will be published in international journals Applied Thermal Engineering, Heat Transfer Engineering, Journal of Cleaner Production and Resources, Conservation and Recycling.

Exhibition MARCHES 2002

MARCHES 2002 — the MARket of CHemical Engineering and Services will take place from Tuesday, 27 August to Thursday, 29 August 2002 in the premises of the CHISA 2002 Congress. The Exhibitors are listed in the Catalogue.

Art & Science mini-gallery

The interesting exhibition, prepared by Professor A. Tamir (Ben Gurion University of Negev), illustrating the interrelation between the world of art and science. The exhibition will be located in the Congress Hall.

List of plenary lectures

A. Bar-Cohen	The impact of nanotechnology on the future practice of engineering
J. C. Charpentier	Triplet 'Molecular Processes-Product-Process Engineering — P3E': the future of chemical engineering?
R. Darton	Sustainable development and energy: predicting the future

J. Koubek	Chemical reactor design and catalyst development — a hand in hand process
E. N. Lightfoot	Unpredictability and evolution of novel designs
B. McKenna	Limitations of food safety and quality modelling — case studies
K. Wichterle	Transport processes in liquid steel: a challenge for chemical engineers

List of keynote lectures

Reaction engineering

W. Ehrfeld	Development of a microreaction platform for evaluation and implementation of novel process routes
S. Fogler	Research frontiers in chemical reaction engineering
R. King	Automatic identification of mathematical models of chemical and biochemical reaction systems
F. Pla	New developments on modelling and optimization of emulsion polymerization processes

Cyclic operations in trickle bed reactors

B. Drinkenburg	Cyclic operation in trickle bed reactors

Symposium on micro- and mesoporous materials

H. Jobic	Dynamics of xylenes in X-type zeolites studied by various neutron scattering techniques

Membrane processes

E. Drioli	Membrane crystallizers in multicomponent systems

Phase equilibrium and fluid properties

V. Dohnal	Air-water partitioning of organic compounds of environmental interest
I. G. Economou	Molecular simulation of phase equilibria
A. Toikka	On thermodynamics of fluid phase equilibrium of reacting systems in chemically nonequilibrium states
P. Ungerer	Determination of thermodynamic properties from molecular simulation

Symposium on supercritical fluids

R. Eggers	Interfacial phenomena in supercritical fluid processing
T. Gamse	Current trends in supercritical fluid technologies
Ž. Knez	Supercritical fluids — solvents for future?

Symposium on transient multiphase flows

M. Giot	Two-phase flow water hammer transients and induced loads on materials and structures (WAHALoads)
G. Hetsroni	Boiling of surfactant solutions
H. M. Prasser	Fast visualization of transient two-phase flows and mixing processes in single phase flows by means of electrode-mesh sensors
I. Žun	Multiscale characteristics of bubble flow in simple and complex geometries

Fluid flow

D. Gidaspow	Hydrodynamics of fluidization: structure and turbulence
A. Tamir	Fluid flow and thermodynamics via art
M. Sommerfeld	Requirements for accurate numerical calculations of bubbly flows and associated sensitivity studies
O. Wein	Wavy film flows: linear stability and evolution
L. Zakin	Review of recent experimental results and evaluation of physical criteria required for surfactant drag reduction

Computer aided process engineering

R. Gani	The age of computer aided modelling
A. Kienle	Nonlinear dynamics and control of reactive distillation processes
I. Schreiber	Computational tools for analysis of nonlinear dynamical systems in chemical engineering
F. Stepanek	Computer-aided design of granule microstructure

Conference PRES 2002

H. Cabezas	Sustainable systems theory: ecological and other aspects (PRES plenary)
R. Smith	Process integration for reduced environmental impact (PRES plenary)
M. Bagajewicz	Financial risk management in process design
Z. Ercsey	Rigorous super-structure in action
D. J. Kukulka	Factors associated with fouling in the process industry
F. Marechal	Targeting the integration of multi-period utility systems for site scale process integration
J. J. Nossent	Reduction of water intake and COD emissions by using new water treatment technology in paper industry
V. Plesu	Design and optimisation of the dividing wall column for product separation in an oil refinery
M. Sorin	On minimization of the number of heat exchangers in water networks
T. Thonon	Development and integration of advanced heat exchangers and process control for high energy efficient distillation columns and separation processes
K. Urbaniec	Minimisation of water use in a novel sugar manufacturing process
X. X. Zhu	CO_2 emissions and its impact on refinery industry

Chemical engineering education

C. D. Grant	Chemical engineering education: outcomes and customers

Symposium on process safety

L. Allford	The European Process Safety Centre (EPSC): A decade of learning
H. J. Pasman	Developments in loss prevention / process safety / risk assessment methodology: layer of protection analysis
R. D. Turney	Human factors in the process industries: The PRISM project

Symposium on environmental engineering and management

E. Dinjus	Environmental friendly processes to use biomass as a feedstock for chemistry and energy

Chemical: technology for sustainable future

J. Horák	Sustainable development for the petrochemical industries — responsible technological programme or a popular slogan?
M. Kuncíř	Position of Central European refining and petrochemical sites within Europe
J. Landgrave	Methodology for performance indicators calculation to evaluate plants of chemical and process industry, in accordance with sustainability outlines and emphasis on institutional, social and exploitation of natural resources
A. Mimura	Integrated development of biomass plantations for energy, and commodity and fine chemicals
K. H. Robra	Waste gas cleaning by biofiltration techniques
H. Schmauder	Towards to a cleaner environment — situation, (chemical, biotechnological, general) technologies and trends

Food processing and technology

P. P. Lewicki	Water as the determinant of food engineering properties
P. Nesvadba	Database of physical properties of agro-food materials
D. W. Sun	Experimental investigation of performance of vacuum cooling for commercial large cooked meat joints
K. Urbaniec	The evolution of evaporator stations in the beet-sugar industry

SOCIAL AND LADIES PROGRAM

All invited get-together events

All Congress participants and accompanying persons are cordially invited to take part.

Festive Congress opening

Municipal House of Prague, Smetana Hall
Opening addresses, awards, and a short organ recital. Glass of wine and refreshment in the Ceremonial saloons.
Sunday, 25 August 20–22 h.

Congress concert in Rudolfinum

Dvořák Hall of the Rudolfinum
The Prague Philharmonia, conductor Ondřej Kukal, soloist František Novotný (violin)
Program: W. A. Mozart: The Marriage of Figaro, Overture; H. Wieniawski: Fantasy Brillante on themes from Gounod's Faust, Op. 20; M. Ravel: Tzigane, Concerto Rhapsody for Violin and Orchestra; V. H. Voříšek: Symphony in D major
Tuesday, 27 August 20–22 h.

Farewell party

Restaurant in Masaryk Hostel
Congress farewell party with dinner buffet.
Thursday, 29 August 20–23 h.

Prague sightseeing tours

Prague sightseeing

A basic bus tour introducing visitors to the most important points of interest. A walk through Prague Castle and Lesser Town.
Sunday, 25 August, 13–17 h.
Price: 19 EUR

Old Town

The sightseeing includes the region around the Old Town Square and neighbouring former Jewish Quarter with monuments to a once thriving enclave.
Tuesday, 27 August, 9–12 h.
Price: 19 EUR

Prague Castle — Hradčany

A tour through the Prague Castle area with a visit of the Royal Palace, St. Vitus Cathedral, St. George Basilica and the Golden Lane. A pleasant stroll to the Lesser Town with its famous palaces.
Wednesday, 28 August, 9 – 12 h.
Price: 19 EUR

Bus trips

Pilsner Brewery

The brewery is situated in West Bohemian metropolis Pilsen (Plzeň). The general term Pilsner originates from the name of the Prazdroj Brewery (Pilsner Urquell) established in 1842. Refreshment included.
Monday, 26 August, 12.30 – 18 h.
Price: 37 EUR

Karlovy Vary

A bus tour through the picturesque West Bohemian countryside to Karlovy Vary (Carlsbad). The world-renowned spa founded in the 14th century known for its twelve thermal springs and attractive colonnades and parks. An excursion to Becher factory manufacturing the famous Czech liqueur. Lunch included.
Monday, 26 August, 8 – 18 h.
Price: 46 EUR

Karlštejn Castle

A half-day tour to the Karlštejn Castle 35 km southwest of Prague. The medieval fortress founded in 1348 by the great Czech King and Roman Emperor Charles IV as representative emperor seat and coronation jewellery treasury. Erected by Mathias of Arras.
Tuesday, 27 August, 12.30 – 18 h.
Price: 25 EUR

Český Krumlov

The old town of Český Krumlov charmingly situated above the meandering Vltava River in Southern Bohemia is recorded in the UNESCO World Cultural and Natural Heritage list. The large castle dominates more than three hundred historical buildings representing an appealing urbanesque unity. Lunch included.
Tuesday, 27 August, 8 – 18 h.
Price: 46 EUR

Kutná Hora

A half-day tour to Kutná Hora — the medieval town founded in the 13th century around a silver mine, 65 km east of Prague. A visit of the splendid Gothic St. Barbara Cathedral and the former Royal Mint once coined Prague silver groschen. Refreshment included.
Wednesday, 28 August, 12.30 – 18 h.
Price: 25 EUR

Nuclear power plant Temelín and Hluboká Castle

The first part of tour includes an excursion to the nuclear power plant at Temelín. Tour continues to the beautiful Hluboká — originally Gothic castle rebuilt in the Windsor style in the 19th century. Lunch included.
Wednesday, 28 August, 8 – 18 h.
Price: 45 EUR

Konopiště Castle

A castle built in early French Gothic style in the 13th century and rebuilt around 1887 as a hunting chateau by the successor to the Austrian throne Ferdinand d'Este. It houses a valuable collection of weapons, hunting trophies, and works of art.
Thursday, 29 August, 12.30 – 18 h.
Price: 25 EUR

Evening program

River cruise

A boat trip on the Vltava River. The most beautiful views of the "Golden City": Prague Castle, Lesser Town, Charles Bridge, National Theatre and Vyšehrad fortress. Buffet dinner accompanied by music.
Monday, 26 August, 20 – 23 h.
Price: 25 EUR

Prague State Opera — Giusepe Verdi Festival

Preliminary program:

Saturday, 24 August	Un Balo in Maschera
Monday, 26 August	La Traviata
Tuesday, 27 August	Rigoletto
Wednesday, 28 August	Nabucco
Thursday, 29 August	Un Balo in Maschera
Friday, 30 August	La Traviata

Beginning at 20 h. Ticket price: 35 EUR/performance

GENERAL TIME SCHEDULE (preliminary)

Day	Scientific program	Time	Half-day trips	Whole-day trips	Evening program
Saturday 24 August	Arrivals Registration	 14–20			 Opera ticket offer
Sunday 25 August	Arrivals Registration	 10–20	Prague sightseeing 13–17		Congress opening 20–22, all invited
Monday 26 August	Registration, Congress Office Plenary lectures Lecture sessions Posters	8–17 (Mon-Thu) 8.30–9.20 9.40–12.30, 14–17.20 9.30–17.20	Pilsner Brewery 12.30–18	Karlovy Vary 8–18	River cruise 20–23 Opera ticket offer
Tuesday 27 August	Plenary lectures Lecture sessions Posters MARCHES 2002 Exhibition	8.30–9.20 9.40–12.30, 14–17.20 9.30–17.20 9–17	Prague Old Town 9–12 Karlštejn Castle 12.30–18	Český Krumlov 8–18	Congress concert 20–22, all invited Opera ticket offer
Wednesday 28 August	Plenary lectures Lecture sessions Posters MARCHES 2002 Exhibition	8.30–9.20 9.40–12.30, 14–17.20 9.30–17.20 9–17	Prague Castle 9–12 Kutná Hora 12.30–18	Temelín, Hluboká Castle 8–18	Opera ticket offer
Thursday 29 August	Plenary lectures Lecture sessions Posters MARCHES 2002 Exhibition	8.30–9.20 9.40–12.30, 14–17.20 9.30–17.20 9–17	Konopiště Castle 12.30–18		Farewell party 20–23, all invited Opera ticket offer
Friday 30 August	Departures				Opera ticket offer

ORGANISATION OF SCIENTIFIC PROGRAM

Topic	Lecture session	Page	Poster session	Page
Plenary lectures		16		
1. Reaction engineering	A1–A8	16	P1	41
2. Separation processes				
Extraction	D4–D5	24	P3	48
Absorption and distillation	C1–C4	21	P3	47
Adsorption and ion exchange			P3	52
Membrane processes	B6–B8	20	P3	49
Crystallisation			P3	53
3. Fluid flow and multiphase systems				
Fluid flow	E3–E8	26	P5	56
Fluidization	F7–F8	29	P5	58
Mixing	F1–F3	27	P5	57
Filtration	F5	29	P5	55
4. Heat transfer processes	F6	29	P5	58
5. Phase equilibria and fluid properties	C5–C8	22	P3	50
6. Computer aided process engineering	G1–G6	30	P5	53
7. Food processing and technology	L1–L3	40	P7	62
8. Particulate solids	D7	25	P5	59
9. Chemical engineering education	I2	34	P5	53
10. Fifth Conference PRES 2002	H1–H7	32	P5	54
	I3–I6	34		
Compact heat exchangers course	I7–I8	35		
11. Symposium on environmental engineering and management	J4–J8	37	P7	60
MTBE remediation seminar	L6	41		
12. Symposium on process safety	J1–J3	36	P7	65
13. Symposium on transient multiphase flows	E1–E2	25		
14. Symposium on micro- and mesoporous materials	B3–B4	19	P3	51
15. Symposium on supercritical fluids	D1–D3	23	P3	50
16. Chemical technology for sustainable future	K1–K7	38	P7	63
17. Mixing of suspensions	F4	28	P5	58
18. CAETS	I1	34		
19. Cyclic operation of trickle bed reactors	B1–B2	19		

PROGRAM

PLENARY LECTURES

Monday

A1.0 8.30 Unpredictability and evolution of novel designs. **E. N. Lightfoot** (Univ. Wisconsin, Madison WI, US) [1218]

H1.0 8.30 Triplet "Molecular Processes - Product - Process Engineering - P3E" : the future of chemical engineering ?. **J.-C. Charpentier** (CPE, Villeurbanne, FR) [1225]

H1.1 9.40 Sustainable systems theory: ecological and other aspects. **C. W. Pawlowski, A. L. Mayer, N. T. Hoagland, *H. Cabezas** (Nat. Risk Manag. Res. Lab., Cincinnati OH, US) [42]

H2.1 14.00 Process integration for reduced environmental impact. **R. Smith** (UMIST, Manchester, UK) [1033]

Tuesday

A3.0 8.30 Chemical reactor design and catalyst development - a hand in hand process. **J. Koubek** (Inst. Chem. Technol., Praha, CZ) [1217]

H3.0 8.30 Limitations of food safety and quality modelling: - case studies. **B. M. McKenna** (Nat. Univ. Ireland, Dublin, IE) [1168]

Wednesday

A5.0 8.30 A sustainable energy supply: predicting the future. **R. C. Darton** (Univ. Oxford, UK) [1262]

H5.0 8.30 The impact of nanotechnology on the future practice of engineering. **A. Bar-Cohen** (Univ. Maryland, College Park MD, US) [1230]

Thursday

A7.0 8.30 Transport processes in liquid steel: challenge for chemical engineers. **K. Wichterle** (Tech. Univ. Ostrava, CZ) [423]

A

A1 Lectures — Monday morning Reaction engineering

Chairmen: H. S. Fogler, M. Marek

A1.1 9.40 Keynote lecture: Research frontiers in chemical reaction engineering. **H. S. Fogler** (Univ. Michigan, Ann Arbor MI, US) [1002]

A1.2 10.20 Hydrogenation in SISR (Screw Impeller Stirred Reactor) laboratory reactor setup - reality and CFD visions. **J.-P. Mikkola, J. Wärna, *J. Kuusisto, A. Kalantar Neyestanaki, T. Salmi** (Abo Akademi Univ., FI) [482]

A1.3 10.40 Investigation of uncatalyzed cyclohexane oxidation in a bubble column reactor. ***R. Schäfer, C. Merten, G. Eigenberger** (Univ. Stuttgart, DE) [982]

11.00 Coffee break

A1.4 11.30 The influence of oxygen storage on three way catalytic converters and its change with catalyst ageing. ***C. Brinkmeier, T. Deuschle, S. Büchner[1], W. Held[1], G. Eigenberger** (Univ. Stuttgart, DE; [1]Volkswagen AG, Wolfsburg, DE) [986]

A1.5 11.50 Dynamic behaviour of the peroxide-thiosulfate-Cu2+ reaction in the CSTR. ***J. Zagora, O. Pešek, L. Schreiberová, I. Schreiber** (Inst. Chem. Technol., Praha, CZ) [1187]

A1.6 12.10 Identification of multiple steady states: the first step in safety analysis of continuous stirred tank reactor. ***A. Molnár, J. Markoš, L. Jelemenský** (Slovak Tech. Univ., Bratislava, SK) [356]

A2 Lectures — Monday afternoon Reaction engineering

Chairmen: W. Ehrfeld, M. Králik

A2.1 14.00 Keynote lecture: Development of a microreaction platform for evaluation and implementation of novel process routes. ***W. Ehrfeld, T. Bieber, M. Kroschel** (Ehrfeld Mikrotechnik GmbH, Wendelsheim, DE) [432]

A2.2 14.40 Quantifying molecular diffusion of cinnamaldehyde and the products of its hydrogenation within alumina-supported platinum catalysts. ***G. Senthil, F. King[1], L. F. Gladden** (Univ. Cambridge, UK; [1]Synetix, Billingham, UK) [711]

A2.3 15.00 Kinetics of hydrogenation of pseudoionone to hexahydropseudoionone. **J. Gomory, *M. Králik** (Slovak Univ. Technol., Bratislava, SK) [759]

15.20 Coffee break and poster session

A2.4 16.00 Kinetic considerations of UV-bubble column reactor for removal of CVOCs from gas phase. ***D. Alibegic, S. Tsuneda, A. Hirata** (Waseda Univ., Tokyo, JP) [1248]

A2.5 16.20 Catalytic isomerization of linoleic acid over supported metals. **A. Laine, N. Kumar, P. Mäki-Arvela, N. Granholm, B. Holmbom, T. Salmi, *D. Yu. Murzin** (Abo Akademi Univ., FI) [209]

A2.6 16.40 Direct gas-phase oxidation of ethane. ***V. S. Arutyunov, V. M. Rudakov[1], V. I. Savchenko[1], E. V. Sheverdenkin[1]** (Inst. Chem. Phys., Moskva, RU; [1]Inst. Probl. Chem. Phys., Chernogolovka, RU) [312]

A2.7 17.00 A transient model for natural gas catalytic converter. ***N. Sallamie, M. Estiri, A. Noori Khoshknab** (Iran Univ. Sci. Technol., Tehran, IR) [345]

A3 Lectures — Tuesday morning Reaction engineering

Chairmen: R. King, I. Schreiber

A3.1 9.40 Keynote lecture: Automatic identification of mathematical models of chemical and biochemical reaction systems. ***R. King, J. Leifheit, S. Freyer[1]** (Tech. Univ. Berlin, DE; [1]BASF AG, Ludwigshafen, DE) [1233]

A3.2 10.20 Artificial neural network modelling applied on NOx reduction with octane in excess oxygen over Ag/Al2O3. ***M. Rönnholm, F. Klingstedt, K. Eränen, J. Wärna, L.-E. Lindfors** (Abo Akademi Univ., FI) [402]

A3.3 10.40 Dynamic study for VOC combustion in a reverse-flow reactor and nonlinear observer for on-line estimation of inlet concentration. ***D. Edouard, D. Scweich, H. Hammouri, F. Couenne** (CNRS, Villeurbanne, FR) [688]

11.00 Coffee break

A3.4 11.30 Multiplicity of steady states in bubble column reactors. ***R. Pohorecki, A. Zdrójkowski, W. Moniuk** (Warsaw Univ. Technol., PL) [1492]

A3.5 11.50 The evolution of reactions in chaotic mixing flows. ***E. S. Szalai, F. J. Muzzio** (Rutgers Univ., Piscataway NJ, US) [1176]

A3.6 12.10 A mathematical model for the direct conversion of methane to methanol in a fixed bed catalytic reactor. ***L. Vafajoo, M. Sohrabi** (Amirkabir Univ. Technol., Tehran, IR) [64]

A4 Lectures — Tuesday afternoon Reaction engineering

Chairmen: T. Viveros Garcia, V. Tukač

A4.1 14.00 Modelling of isotopic exchange in the formation of NH3 and H2O on Pd-monolith. ***K. Rahkamaa-Tolonen, T. Salmi, D. Yu. Murzin, R. L. Keiski, J. Wärna** (Abo Akademi Univ., FI) [224]

A4.2 14.20 Mass transfer effects in modelling of catalytic monolith converters with NOx storage. ***P. Kočí, V. Ekart, M. Kubicek, M. Marek** (Inst. Chem. Technol., Praha, CZ) [497]

A4.3 14.40 Analysis and simulation of novel process of motor fuels production based on natural gas. ***E. V. Pisarenko, V. N. Pisarenko[1], J. A. Abaskuliev[1]** (Colorado State Univ., US; [1]Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [618]

A4.4 15.00 Steady state and dynamic simulation of an autothermal gasoline reformer. ***S. Springmann, M. Sommer[1], M. Himmen[1], G. Eigenberger** (Univ. Stuttgart, DE; [1]Daimler Chrysler AG., Ulm, DE) [575]

15.20 Coffee break and poster session

A4.5 16.00 Catalytic transformation of aromatic compounds. ***Q. Smejkal, J. Hanika, A. Krejčí, J. Kolena[1], D. Kubička[1]** (Inst. Chem. Technol., Praha, CZ; [1]Unipetrol Res. Cent., Litvínov, CZ) [349]

A4.6 16.20 Simulation of a trickled bed plug-flow reactor for the hydrodesulfurization of oil fractions. **A. M. Sales Cruz, J. J. Lopes, *T. Viveros García, J. O. M. De la Rosa[1], J. A. Ochoa-Tapia** (Univ. Autonom. Metrop., Iztapalapa, MX; [1]Inst. Mex. Petrol., Mexico, MX) [814]

A4.7 16.40 Membrane bioreactors - hybrid activated sludge or a new process?. ***S. Smith, B. Jefferson, S. Judd** (Cranfield Univ., UK) [1280]

A4.8 17.00 Kinetic modeling of the liguid-phase hydrogenation. **D. Yu. Murzin, *T. Salmi** (Abo Akademi Univ., FI) [757]

A4.9 17.20 Modeling and optimization of enzymatic separating micro-reactor. ***F. Tměj, Z. Limbergová, P. Hasal** (Inst. Chem. Technol., Praha, CZ) [643]

A5 Lectures — Wednesday morning Reaction engineering

Chairmen: J. Kosek, F. Pla

A5.1 9.40 Keynote lecture: New developments on modelling and optimization of emulsion polymerization processes. **C. Fonteix, *F. Pla, S. Massebeuf, A. Sgard, L. N. Kiss[1]** (INPL, Nancy, FR; [1]Univ. Laval, Québec, CA) [1021]

A5.2 10.20 Self-sustained oscillation of particle size distribution in continuous emulsion polymerization. ***K. Kataoka, N. Ohmura, T. Yano, S. Matsuzaki** (Kobe Univ., JP) [38]

A5.3 10.40 Synthesis of biomedical thermoplastic poyurethanes by reactive extrusion. ***S. Hoppe, S. Grigis, F. Pla** (LSCG, Nancy, FR) [586]

11.00 Coffee break

A5.4 11.30 Mixing in suspension polymerisation reactors. **S. Hashim, *B. W. Brooks** (Loughborough Univ., UK) [764]

A5.5 11.50 A specialty melt polycondensation pilot plant - design and process capabilities. ***M. Saban, G. Liebermann, F. Lee** (Xerox Res. Center, Mississauga, CA) [1067]

A5.6 12.10 The effect of temperature on the morphogenesis of polyolefin particles in heterogeneous catalytic reactors. ***Z. Grof, J. Kosek, M. Marek** (Inst. Chem. Technol., Praha, CZ) [1097]

A5.7 12.30 Modeling of free radical polymerization of ethylene using bifunctional initiators. **N. Al-Nidawy, O. Voinicu, *R. Dhib** (Ryerson Univ., Toronto, CA) [766]

A6 Lectures—Wednesday afternoon Reaction engineering

Chairmen: M. Habulin, J. Markoš

A6.1 14.00 The use of the oxygen uptake rate to define nitrification kinetics. ***S. R. Juliastuti, J. Baeyens, G. Degueldre**[1] (Cathol. Univ. Leuven, Heverlee, BE; [1]Aquafin, Aartselaar, BE) [247]

A6.2 14.20 A theoretical and experimental analysis of membrane bioreactor performances in recycle configuration. ***V. Calabro, S. Curcio, G. Iorio** (Univ. Calabria, Arcavacata di Rende, IT) [344]

A6.4 14.40 Modelling of gluconic acid production in an internal-loop airlift reactor. ***O. Dolgoš, M. Blažej, J. Markoš** (Slovak Univ. Technol., Bratislava, SK) [361]

A6.5 15.00 Effects caused by operating conditions on the propagation of the entomopathogenic nematode Steinernema feltiae in submerged monoxenic culture. ***N. Chavarría-Hernández, A. I. Rodríguez-Hernández, F. Pérez-Guevara**[1], **M. De la Torre**[1] (Auton. Univ. Hidalgo State, Tulacingo, MX; [1]CINVESTAV-IPN, Mexico City, MX) [804]

15.20 Coffee break and poster session

A6.6 16.00 Nitrification/denitrification with immobilized systems. ***H.-J. Jördening, B. Hausmann, M. Zastrutzki** (Tech. Univ. Braunschweig, DE) [703]

A6.7 16.20 Lipase-catalyzed hydrolysis of sunflower oil in high-pressure batch stirred tank and continuous flat-shape membrane reactor. ***M. Habulin, M. Primožič, Ž. Knez** (Fac. Chem. Chem. Eng., Maribor, SI) [864]

A6.8 16.40 Lactic acid fermentation in membrane bioreactor: modelling of stress phenomena. **N. V. Menshutina, *A. V. Skorohodov, E. V. Guseva, M. Fick**[1], **J. Boudrant**[1] (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU; [1]INPL-ENSAIA, Vandoeuvre-les-Nancy, FR) [760]

A6.9 17.00 Catalytic gas phase hydrogenation of o-xylene. ***A. Kalantar Neyestanaki, M. R. Rönnholm, J. Wärna, P. Mäki-Arvela, H. Backman, T. Salmi, D. Yu. Murzin** (Abo Akademi, FI) [1281]

A7 Lectures—Thursday morning Reaction engineering

Chairmen: T. Salmi, D. Skala

A7.1 9.40 Assessment of adsorption-enhanced reaction exemplified by the Claus process. **M. Elsner, *M. Menge, D. W. Agar** (Univ. Dortmund, DE) [733]

A7.2 10.00 Hydrodesulfurization of light gas oil - influence of working conditions and reactor geometry on sulfur conversion. ***D. Skala, A. Orlovic, Z. Todosijevic, M. Cetkovic**[1] (Fac. Technol. Metall., Beograd, YU; [1]Oil Refinery, Pancevo, YU) [855]

A7.3 10.20 When is combined steam and dry (CO2) reforming of natural gas appropriate?. **J. F. Cancino, *M. Bagajewicz** (Univ. Oklahoma, Norman OK, US) [614]

A7.4 10.40 The effect of calcination temperature on the activity and some physicochemical properties of the low temperature water-gas shift reaction catalysts. ***M. Sohrabi, A. Irandoukht** (Amirkabir Univ. Technol., Tehran, IR) [65]

11.00 Coffee break

A7.5 11.30 A novel catalytic oxidation of chlorinated volatile organic compounds. ***K. Everaert, J. Degreve, J. Baeyens** (Cathol. Univ. Leuven, Heverlee, BE) [9]

A7.6 11.50 Decalin as a model compound for ring opening reaction of naphthenic hydrocarbons. ***D. Kubička, N. Kumar, T. Salmi, D. Yu. Murzin** (Abo Akademi Univ., FI) [835]

A7.7 12.10 Nanostructurized metal polymeric catalytic systems in hydrogenation and oxidation reactions. ***E. Sulman, V. Matveeva, L. Bronstein**[1], **S. Sidorov**[2], **P. Valetsky**[2], **M. Sulman, N. Semagina, G. Demidenko, A. Bykov, V. Doluda** (Tver Tech. Univ., RU; [1]Indiana Univ., Bloomington IN, US; [2]Nesmeyanov Inst. Organoelement Comp., Moskva, RU) [284]

A8 Lectures—Thursday afternoon Reaction engineering

Chairmen: K. Bouzek, A. Haeger

A8.1 14.00 Heterogeneous photocatalysis with TiO2: influence of wavelength and radiation intensity on the quantum yield of selected gas reactions. ***A. Haeger, D. Hesse** (Univ. Hannover, DE) [353]

A8.2 14.20 Kinetics of the irreversible deactivation of the catalyst in the MTO process. ***A. G. Gayubo, A. T. Aguayo, R. Vivanco, A. Atutxa, J. Bilbao** (Univ. País Vasco, Bilbao, ES) [862]

A8.3 14.40 Deactivation of hydrotreating catalysts: thiophene HDS and a characterization of spent catalysts. ***P. Steiner, B. M. Vogelaar**[1], **A. D. Van Langeveld**[1], **S. Eijsbouts**[2], **J. A. Moulijn**[1], **E. A. Blekkan** (Norweg. Univ. Sci. Technol., Trondheim, NO; [1]Delft Univ. Technol., NL; [2]AKZO Chemicals, Amsterdam, NL) [427]

A8.4 15.00 Modeling gas oil cracking reactions in microreactors. ***F. López-Isunza, N. Moreno, R. Quintana[1], J. C. Moreno[1], F. Hernández-Beltrán[1]** (Univ. Autonom. Metrop., Iztapalapa, MX; [1]Inst. Mex. Petrol., México DF, MX) [644]

15.20 Coffee break and poster session

A8.5 16.00 Hydrogenolysis of 1,4-dimethylcyclohexane on silica supported catalyst; influence of time on stream on activity and selectivity. **F. Locatelli, D. Uzio, G. Niccolai, J. M. Basset, *J. P. Candy[1]** (CNRS, Villeurbanne, FR; [1]Inst. Fr. Pet., Rueil-Malmaison, FR) [23]

A8.6 16.20 Reaction kinetics in system Ln2O3 - SrO - Al2O3 and mechanism of formation of intergrowth structures. ***I. A. Zvereva, V. F. Popova[1], N. S. Pylkina, A. B. Missul, A. M. Toikka, V. V. Gusarov[1]** (St. Petersburg State Univ., RU; [1]Inst. Silicate Chem., St. Petersburg, RU) [154]

A8.7 16.40 A mathematical model for deactivation of a solid acid catalyst in liquid-phase isobutane alkylation. **S. Sahebdelfar, *M. Kazemeini, F. Khorasheh, A. Badakhshan[1]** (Sharif Univ. Technol., Tehran, IR; [1]Univ. Calgary, CA) [203]

A8.8 17.00 Degradation of phenol using photocatalytic reaction in powder catalyst TiO2. ***N. Saksono, Slamet** (Univ. Indonesia, ID) [51]

B

B1 Lectures—Monday morning
Cyclic operation of trickle bed reactors

Chairmen: A. A. H. Drinkenburg, G. Wild

B1.1 9.40 Keynote lecture: Cyclic operation in trickle bed reactors. **B. Drinkenburg** (Tech. Univ. Eindhoven, NL) [1259]

B1.2 10.20 A rating procedure for cyclic operation of trickle bed reactors. ***C. Bühner, G. Schembecker** (GHN, Dortmund, DE) [1015]

B1.3 10.40 Local liquid/solid mass transfer in trickle beds with cyclic liquid feeding. **M. Trivizadakis, D. Giakoumakis, *A. J. Karabelas** (Aristotle Univ., Thessaloniki, GR) [1073]

11.00 Coffee break

B1.4 11.30 Cyclic operation of trickle bed reactors : liquid flow distribution and heat transfer. ***D. Borremans, S. Rode, P. Carré, G. Wild** (CNRS-ENSIC, Nancy, FR) [742]

B1.5 11.50 Transition to pulsing flow and pressure drop in high-pressure trickle bed reactors operated with organic liquids. ***M. I. Urseanu, H. J. M. Bosman, J. G. Boelhouwer, J. C. Schroijen** (DSM Res., Geleen, NL) [1079]

B1.6 12.10 Induced pulsing flow in trickle-bed reactors. ***J. G. Boelhouwer, H. W. Piepers, A. A. H. Drinkenburg** (Eindhoven Univ. Technol., NL) [1355]

B2 Lectures—Monday afternoon
Cyclic operation of trickle bed reactors

Chairmen: H. J. M. Bosman, S. Sicardi

B2.1 14.00 Periodic operation - one way to improve the trickle-bed reactor performance. **R. Lange** (Univ. Dresden, DE) [1091]

B2.2 14.20 Slow mode periodic pulsation of the liquid in trickle bed reactors. **S. Sicardi, L. Manna, *M. Banchero** (Politecnico Torino, IT) [1047]

B2.3 14.40 Experiments with periodically operated liquid feed stream. ***P. Houserová, J. Hanika** (Inst. Chem. Technol., Praha, CZ) [692]

B2.4 15.00 Periodic operations of trickle bed reactor. ***D. Skála, J. Hanika** (Inst. Chem. Technol., Praha, CZ) [971]

15.20 Coffee break and poster session

B2.5 16.00 Periodic state of wet oxidation in trickle-bed reactor. ***V. Tukač, J. Hanika, V. Chyba** (Inst. Chem. Technol., Praha, CZ) [547]

B2.6 16.20 Pressure drop and liquid holdup in trickle bed reactor for air-non-Newtonian liquid systems. ***A. Sous, D. González-Mendizabal** (Univ. Simón Bolívar, Caracas, VE) [551]

B3 Lectures—Tuesday morning
Symposium on micro- and mesoporous materials

Chairmen: P. Hudec, O. Šolcová

B3.1 9.40 Keynote lecture: Dynamics of xylenes in X-type zeolites studied by various neutron scattering techniques. ***H. Jobic, A. Méthivier[1]** (Inst. Rech. Catal., Villeurbanne, FR; [1]Inst. Fr. Pet., Rueil-Malmaison, FR) [213]

B3.2 10.20 Evaluation of sorption characteristics of different mesoporous silica materials. ***P. Hudec, A. Smiešková, Z. Židek, K. Jesenák[1], A. Jentys[2]** (Slovak Univ. Technol., Bratislava, SK; [1]Comenius Univ., Bratislava, SK; [2]Tech. Univ., Wien, AT) [1513]

B3.3 10.40 Pore structural characterization of mesoporous silica synthesized by solvent evaporation method. **T. Miyata, *A. Endo, T. Ohmori, T. Akiya, M. Nakaiwa** (Nat. Inst. Adv. Ind. Sci. Technol., Ibaraki, JP) [550]

11.00 Coffee break

B3.4 11.30 Oxygen enrichment by pressure swing adsorption for membrane fuel cell systems. ***W. Lengerer, G. Eigenberger** (Univ. Stuttgart, DE) [970]

B3.5 11.50 Removing NPE's from kraft pulp bleaching filtrates via adsorption with zeolites and activated carbon. **S. Sequeira, A. Silvestre, C. P. Neto, *I. Portugal** (Univ. Aveiro, PT) [1201]

B3.6 12.10 Production of zeolites from Brazilian coal ashes and its use for metal extraction. ***J. C. T. Endres, I. D. Fernandes, L. S. Ferret** (CIENTEC, Porto Alegre RS, BR) [255]

B4 Lectures — Tuesday afternoon Symposium on micro- and mesoporous materials

Chairmen: J. Baeyens, M. Kočiřík

B4.1 14.00 Chromatographic study on multicomponent adsorption in gas phase. **K. Chihara, *H. Mizuochi, H. Imabeppu** (Meiji Univ., Kawasaki, JP) [310]

B4.2 14.20 Chromatographic determination of transport characteristics of porous solids. ***O. Šolcová, P. Schneider** (Inst. Chem. Proc. Fundam., Praha, CZ) [414]

B4.3 14.40 Mathematical modeling of adsorption processes in capillary electrochromatography. ***M. Pačes, J. Kosek, M. Marek** (Inst. Chem. Technol., Praha, CZ) [1110]

B4.4 15.00 Mathematical modelling of counter-current chromatography. ***A. E. Kostanyan, I. A. Sutherland[1], S. N. Ignatova[2], T. A. Maryutina[2]** (Inst. Gen. Inorg. Chem., Moskva, RU; [1]Brunel Univ., Uxbridge, UK; [2]Inst. Geochem. Anal. Chem., Moskva, RU) [866]

15.20 Coffee break and poster session

B4.5 16.00 Mechanistic aspects of the temperature - dependent uptake of biochemicals by smart materials. **V. Grabstain, O. Kimhi, *H. Bianco-Peled** (Technion ITT, Haifa, IL) [1051]

B4.6 16.20 A comparative study of abatement techniques for volatile organic compounds (VOCs). **K. Everaert, *J. Baeyens, J. Degreve** (Cathol. Univ. Leuven, Heverlee, BE) [8]

B4.7 16.40 Equilibrium studies, sorption kinetics, and column studies for the removal of pesticides from aqueous solutions using activated carbon produced from coconut shell. ***O. Ozgen, M. Mahramanlioglu** (Tech. Univ. Istanbul, TR) [1254]

B4.8 17.00 The kinetics of adsorption of Se(IV) onto activated carbon from aqueous solution. ***R. Leyva-Ramos, C. V. Ruiz Salazar, L. Fuentes Rubio, R. M. Guerrero Coronado** (Univ. Aut. San Luis Potosí, MX) [675]

B4.9 17.20 ISEP CSEP a novel separation technique for process engineers. [Moved to poster session as P3.160]. **B. Dutre** (Chemviron Carbon, Feluy, BE) [1317]

B6 Lectures — Wednesday afternoon Separation processes

Membrane processes

Chairmen: W. Albrecht, V. Kůdela

B6.1 14.00 Keynote lecture: Membrane crystallizers in multicomponent systems. ***E. Drioli, E. Curcio, G. Di Profio** (Univ. Calabria, Rende, IT) [1252]

B6.2 14.40 Nanofiltration of surfactant solutions - experimental investigation and modelling of mass transfer. ***B. Wendler, B. Goers, G. Wozny** (Tech. Univ., Berlin, DE) [525]

B6.4 15.00 Map of gas permeabilities in polymers. ***Z. Pientka, L. Brožová, M. Bleha** (Inst. Macromol. Chem., Praha, CZ) [1268]

15.20 Coffee break and poster session

B6.6 16.00 Calcium salt mass transfer modelling through a nanofiltration membrane. ***R. Maachi, S. Taha[1], T. Chaabane, G. Dorange[1], D. Legheraba** (USTHB, Algiers, DZ; [1]ENSCR, Rennes, FR) [950]

B7 Lectures — Thursday morning Separation processes

Membrane processes

Chairmen: M. Bleha, B. Wendler

B7.1 9.40 Amination of polyimide membranes using di- and multivalent amines. ***W. Albrecht, T. Weigel, B. Seifert, M. Schossig-Tiedemann, R. Hilke, D. Paul** (GKSS Res. Cent. Geesthacht, Teltow, DE) [265]

B7.2 10.00 Modeling of batch electrodialysis of alkali and earth alkali solutions in a cell fitted with an inorganic membrane. **A. Moheb** (Isfahan Univ. Technol., IR) [513]

B7.3 10.20 Effect of the temperature on the transport parameters in diffusion through polymeric matrix. ***M. Kamel, F. Mijangos, M. P. Elizalde** (Univ. País Vasco, Bilbao, ES) [1204]

B7.4 10.40 Transport numbers of hydroxonium ions in cation-exchange membranes for fuel cells. ***V. Kůdela, K. Richau[1], J. Schauer, R. Mohr[1]** (Inst. Macromol. Chem., Praha, CZ; [1]GKSS Res. Cent. Geesthacht, Teltow, DE) [1432]

11.00 Coffee break

B7.5 11.30 Separation of proteins within an electric field using a radial symmetric cell. ***M. Poggel, T. Melin** (RWTH, Aachen, DE) [236]

B7.6 11.50 Concentration of apple juice by reverse osmosis at pilot plant scale: modelling and economic evaluation. ***S. Álvarez, F. A. Riera, R. Álvarez, J. Coca** (Univ. Oviedo, ES) [421]

B7.7 12.10 Modeling and simulation of gas separation by composite membrane modules. **M. Soltanieh** (Sharif Univ. Technol., Tehran, IR) [868]

B8 Lectures — Thursday afternoon Separation processes

Membrane processes

Chairmen: Z. Pientka, H.-H. Schwarz

B8.1 14.00 Effect of temperature on the pervaporation performance of poly(1-trimethylsilyl-1-propyne) (PTMSP) membranes.

***C. López-Dehesa, J. A. González-Marcos, J. R. González-Velasco** (Univ. País Vasco, Bilbao, ES) [318]

B8.2 14.20 Pervaporation separation of aromatic/aliphatic mixtures. **H.-H. Schwarz** (GKSS-Forschungszentrum, Geesthacht, DE) [548]

B8.3 14.40 Prediction of mass transfer coefficient in pervaporation of benzene -cyclohexane mixtures through composite PVA membranes on porous PAN supports. ***D. Roy, D. Sarkhel, M. Bandyopadhyay, P. Bhattacharya** (Jadavpur Univ., Calcutta, IN) [1132]

B8.4 15.00 Microfiltration process: mathematical modelling and calculation. ***E. Guseva, L. Gordeev, Yu. Avramenko, N. V. Menshutina** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [763]

15.20 Coffee break and poster session

B8.5 16.00 A unified approach of gas, liquid and supercritical solvent transport through microporous membranes. **J. Romero, J. Sanchez, *G. M. Rios** (IEM UMR, Montpellier, FR) [891]

B8.6 16.20 Ceramic membranes for filtration of alkaline solutions used as washing bath of metallic surfaces. ***E. Blachowicz, J. Olszewski[1], J. Raabe[2], E. Bobryk[2], T. Zielniok[3]** (Inst. Prec. Mech., Warszawa, PL; [1]Nat. Fund Env. Prot. Water Manag., Warszawa, PL; [2]Tech. Univ., Warszawa, PL; [3]Santech Ltd., PL) [825]

C

C1 Lectures—Monday morning Separation processes

Absorption and distillation

Chairmen: M. Čársky, V. Staněk

C1.1 9.40 Biosorption column performance. ***B. Volesky, M. Carsky[1]** (McGill Univ., Montreal, CA; [1]Univ. Durban-Westville, ZA) [824]

C1.2 10.00 SO2 absorption model on light-off catalyst under oxidising conditions. ***L. Limousy, N. Sabiri, D. Hadjiev** (Univ. Bretagne Sud, Lorient, FR) [664]

C1.3 10.20 Removal of carbon dioxide by novel tubular-type gas absorber. ***M. Teramoto, N. Takeuchi, N. Ohnishi, H. Matsuyama** (Kyoto Inst. Technol., JP) [370]

C1.4 10.40 Non-reflux distillation - a modified method of salt distillation. **G. Bremers, *R. Galoburda, V. Gulbis, G. Birzietis** (Latv. Univ. Agric., Jelgava, LV) [536]

11.00 Coffee break

C1.5 11.30 Considering the benzol recovery from coke gas. ***M. R. Ehsani, F. Eghbali** (Isfahan Sci. Technol. Town, IR) [723]

C1.6 11.50 Non typical applications of the McCabe-Thiele method. **I. L. T. Albuquerque, L. G. S. Vasconcelos, *R. P. Brito** (UFP, Campina Grande, BR) [533]

C1.7 12.10 Measurement of bubble size distribution and radial variation in protein foam fractionation columns using capillary probe with photoelectric sensors. **Liping Du, *A. Prokop, R. D. Tanner** (Vanderbilt Univ., Nashville TN, US) [30]

C1.8 12.30 A unified approach for optimization of batch biotechnological processes. **M. Ardjmand, *A. A. Sayfkordi[1], S. Hosseini** (Islamic Azad Univ., Tehran, IR; [1]Sharif Univ. Technol., Tehran, IR) [205]

C2 Lectures—Monday afternoon Separation processes

Absorption and distillation

Chairmen: M. J. Lockett, V. Staněk

C2.1 14.00 The effect of maldistribution on separation in packed distillation columns. ***M. J. Lockett, J. F. Billingham** (Praxair Inc., Tonawanda NY, US) [43]

C2.2 14.20 Operation of a bubble bed in series with a trickle bed. ***J. Ondráček, V. Jiřičný, V. Staněk** (Inst. Chem. Proc. Fundam., Praha, CZ) [1163]

C2.3 14.40 The behavior of a counter-current packed bed column undergoing flooding. ***P. Svoboda, V. Staněk, V. Jiřičný** (Inst. Chem. Proc. Fundam., Praha, CZ) [1078]

C2.4 15.00 Assessment of foaming process using residence time distribution analysis in a narrow annular gap reactor. ***R. K. Thakur, C. Vial, G. Djelveh** (Univ. Blaise Pascal, Aubiere, FR) [895]

15.20 Coffee break and poster session

C2.5 16.00 Experimental and theoretical study of bubble columns involving a precipitation reaction. **B. Haut, F. Peeters, *T. Cartage, V. Halloin** (Univ. Libre, Bruxelles, BE) [848]

C2.6 16.20 Analysis of the flow phenomena in modified spray columns. **L. Broniarz-Press, *M. Ochowiak** (Poznan Univ. Technol., PL) [176]

C3 Lectures—Tuesday morning Separation processes

Absorption and distillation

Chairmen: V. Jiřičný, Z. Olujic

C3.1 9.40 Functionality of a novel double-effective packing element. ***O. Schneider, J. Stichlmair** (Tech. Univ., München, DE) [470]

C3.2 10.00 Predicting the performance of high capacity structured packings. **E. Saarsloos, P. J. Jansens, *Z. Olujic** (Delft Univ. Technol., NL) [775]

C3.3 10.20 Effect of hydrodynamic parameters on the performance of sieve tray columns. **M. R. Ehsani** (Isfahan Univ. Technol., IR) [138]

C3.4 10.40 Porosity of solids by thermal desorption of liquids - estimation of surface film thickness. ***J. Goworek, W. Stefaniak** (M. Curie-Sklodowska Univ., Lublin, PL) [368]

11.00 Coffee break

C3.5 11.30 Interfacial electron and momentum transfer phenomena in fine dispersed systems. ***A. M. Spasic, M. D. Babic, M. M. Marinko, N. N. Djokovic, M. Mitrovic[1], D. N. Krstic[1]** (Inst. Technol. Nucl. Miner. Raw Mat., Beograd, YU; [1]Fac. Technol. Metall., Beograd, YU) [698]

C3.6 11.50 Kinetics of absorption of carbon dioxide into aqueous solutions of N-methyldiethanolamine + diethanolamine. **Chih-Yuan Lin, *Meng-Hui Li** (Chung Yuan Christ. Univ., Chung Li, TW) [492]

C4 Lectures — Tuesday afternoon Separation processes

Absorption and distillation

Chairmen: J. V. Oldshue, V. Jiřičný

C4.1 14.00 Batch continuous pilot studies for scale-up to plant scale continuous gas-liquid solid systems. **J. Y. Oldshue** (Oldshue Technologies Int., US) [308]

C4.2 14.20 Dynamic model for start-up simulation of three phase distillation columns. ***T. K. Tran, J.-U. Repke, G. Wozny** (Tech. Univ., Berlin, DE) [314]

C4.3 14.40 Minimum energy advatages of simple reactive distillation. ***N. Poth, J. Stichlmair** (Tech. Univ., München, DE) [507]

C4.4 15.00 Thermodynamics interpretation of the design and operation of an ideal heat integrated distillation column (HIDiC). ***M. Nakaiwa, K. Huang, A. Endo, T. Ohmori, T. Akiya, T. Takamatsu[1]** (Nat. Inst. Adv. Ind. Sci. Technol., Tsukuba, JP; [1]Kansai Univ., Suita, JP) [164]

15.20 Coffee break and poster session

C4.5 16.00 Modelling and simulation of of carbon dioxide absorber by hot carbonated process. ***M. R. Rahimpour, A. Z. Kashkoli** (Shiraz Univ., IR) [518]

C4.6 16.20 Model intensification of flue gas absorber. ***D. Roquet, P. Cézac, M. Roques** (ENSGTI, Pau, FR) [642]

C4.7 16.40 Distillation columns: inter play between equipment design and control performance. ***A. Khelassi, C. Bouyahiaoui, J. A. Wilson[1], A. Maidi, A. Benhalla, B. Ould-Bouamama[2]** (Univ. Boumerdes, DZ; [1]Univ. Nottingham, UK; [2]Univ. Sci. Technol., Lille, FR) [135]

C5 Lectures — Wednesday morning Phase equilibria and fluid properties

Chairmen: K. Aim, D. Lempe

C5.1 9.40 Keynote lecture: Determination of thermodynamic properties from molecular simulation. ***P. Ungerer, M. Lagache[1], E. Bourasseau[1], P. Pascual[1], A. Boutin[1], B. Tavitian** (Inst. Fr. Pet., Rueil Malmaison, FR; [1]Univ. Paris Sud, Orsay, FR) [1142]

C5.2 10.20 Application of a cubic 3-parameter EOS to supercritical phase equilibria involving biological/biochemical compounds and natural products. **W.-R. Ji, *D. A. Lempe** (Martin-Luther-Univ., Halle-Wittenberg, DE) [347]

C5.3 10.40 Molecular-based modelling of equilibrium fluid properties at superambient conditions. ***K. Aim, M. Lísal, J. Pavlíček** (Inst. Chem. Proc. Fundam., Praha, CZ) [1275]

11.00 Coffee break

C5.4 11.30 Application of the hole lattice group contribution model for molecular fluids. **A. G. Morachevsky, *I. V. Prikhodko, L. I. Reshetova, N. A. Smirnova, A. I. Viktorov** (St. Petersburg State Univ., RU) [307]

C5.5 11.50 Sorption behaviour of cyclohexane in random styrene-butadiene copolymers and related silica compounds. **F. Bacchelli, *F. Montanari, F. Doghieri[1], C. Baldini[1]** (Polimeri Europa, Ravenna, IT; [1]Univ. Bologna, IT) [715]

C5.6 12.10 Definition of conditions of solubility in systems the gas - liquid. ***E. E. Ramazanova, M. M. Asadov** (Azerb. State Oil Acad., Baku, AZ) [76]

C6 Lectures — Wednesday afternoon Phase equilibria and fluid properties

Chairmen: O. Dahmani, J. Linek

C6.1 14.00 Keynote lecture: Air-water partitioning of organic compounds of environmental interest. **V. Dohnal** (Inst. Chem. Technol., Praha, CZ) [1122]

C6.2 14.40 Interfacial properties of high viscous liquids in a supercritical carbon dioxide atmosphere. ***P. T. Jaeger, R. Eggers, H. Baumgartl** (Tech. Univ. Hamburg-Harburg, DE) [914]

C6.3 15.00 Excess volumes in ternary mixtures containing 1-chlorobutane: experimental data and prediction with HSE Conformal Solution Theory. **O. Dahmani** (USTHB, Algiers, DZ) [648]

15.20 Coffee break and poster session

C6.4 16.00 P-V-T behaviour of liquid alkane - 1-chloroalkane mixtures at elevated temperatures and high pressures. ***J. Linek, L. Morávková** (Inst. Chem. Proc. Fundam., Praha, CZ) [772]

C6.5 16.20 Vapour pressures of benzophenone and phenathrene in the low-pressure region. **J. M. S. Fonseca, *M. Fulem[1], P. Dudková[1], K. Růžička[1], M. A. V. Ribeiro da Silva, M. J. S. Monte, V. Růžička[1]** (Univ. Porto, PT; [1]Inst. Chem. Technol., Praha, CZ) [1480]

C6.6 16.40 Prediction of viscosity of hydrocarbon fluids at high pressures. ***M. R. Riazi, K. Mahdi, M. Alqallaf** (Kuwait Univ., Safat, KW) [706]

C6.7 17.00 Diffusion and instability of a mechanical equilibrium of multicomponent gas mixtures. ***V. N. Kosov, Yu. I. Zhavrin[1], V. D. Seleznev[2], D. U. Kulzhanov[3], N. B. Ankusheva** (Abay State Univ., Almaty, KZ; [1]Kazak State Nat. Univ., Almaty, KZ; [2]Urals State Tech. Univ., Ekaterinburg, RU; [3]Atyrau Inst. Pet. Gas, Atyrau, KZ) [17]

C6.8 17.20 Modeling vapor-liquid equilibria for systems H2O-MEA-CO2 and H2O-MDEA-CO2. ***J. Poplsteinova, H. F. Svendsen, L. L. Lee[1]** (Norwegian Univ. Sci. Technol.,Trondheim, NO; [1]Univ. Oklahoma, Norman OK, US) [1267]

C7 Lectures — Thursday morning
Phase equilibria and fluid properties

Chairmen: D. Kodama, I. V. Prikhodko

C7.1 9.40 Keynote lecture: Molecular simulation of phase equilibria. **I. G. Economou** (Nat. Res. Cent. Demokritos, Aghia Paraskevi Attikis, GR) [1052]

C7.3 10.20 VLE, LLE, VLLE, and saturated densities for binary systems at high pressures. ***D. Kodama, M. Kato** (Nihon Univ., Fukushima, JP) [888]

C7.4 10.40 Solubility of butane and isobutane in molten polypropylene and polystyrene. ***Y. Sato, M. Wang, S. Takishima, H. Masuoka, T. Watanabe[1], Y. Fukusawa[1]** (Hiroshima Univ., Higashi, JP; [1]Asahi Kasei Corp., Suzuka, JP) [1137]

11.00 Coffee break

C7.5 11.30 Representation of VLE and liquid composition whith Pitzer's model: Application to water-inorganic acid systems. **M. Cherif, A. Arbi[1], M. N. Ammar, M. Abderrabbaa[2], *W. Furst[3]** (ENIT, TN; [1]FST, TN; [2]La Marsa, TN; [3]ENSTA, Paris, FR) [783]

C7.6 11.50 An improved SAFT EOS to predict the thermodynamic properties of pure compounds. ***C. Ghotbi, B. Aminshahidi[1], M. Mofakhami-Mehrabadi** (Sharif Univ. Technol., Tehran, IR; [1]Ferdowsi Univ., Mashahd, IR) [1159]

C7.7 12.10 Phase equilibria of hydrogel systems. ***B. Schäfer, A. Hüther, G. Maurer** (Univ. Kaiserslautern, DE) [366]

C8 Lectures — Thursday afternoon
Phase equilibria and fluid properties

Chairmen: A. M. Toikka, I. Wichterle

C8.1 14.00 Keynote lecture: On thermodynamics of fluid phase equilibrium of reacting systems in chemically nonequilibrium states. **A. M. Toikka** (St. Petersburg State Univ., RU) [327]

C8.2 14.40 Phase equilibria in three systems with esterification reaction. ***I. Wichterle, K. Aim** (Inst. Chem. Proc. Fundam., Praha, CZ) [1194]

C8.3 15.00 Liquid-liquid equilibria in ternary systems nitromethane + water + 1-alcohols. Measurement, correlation and prediction. ***Z. Rečková, K. Řehák, J. Matouš, J. P. Novák** (Inst. Chem. Technol., Praha, CZ) [1166]

15.20 Coffee break and poster session

C8.4 16.00 Apparent bulk modulus from enthalpy and volume data, different aging temperatures and various polymer systems. ***P. Slobodian, P. Sáha** (Tomas Bata Univ., Zlín, CZ) [401]

C8.5 16.20 Effect of viscosity on kLa calculated by the dynamic pressure method (DPM). ***R. I. Carbajal, A. Tecante[1]** (IPN, Barrio la Laguna Ticoman, MX; [1]UNAM, Coyoacan, MX) [690]

C8.6 16.40 Stability analysis of phase equilibrium using homotopy continuation in complex space. **F. Jalali** (Univ. Tehran, IR) [79]

D

D1 Lectures — Monday morning
Symposium on supercritical fluids

Chairmen: S. M. Ghoreishi, H. Sovová

D1.1 9.40 Keynote lecture: Supercritical fluids - solvents for future?. **Ž. Knez** (Univ. Maribor, SI) [668]

D1.2 10.20 ASPEN PLUS(TM) computer simulation for critical data prediction of CO2-rich alkane, cycloalkane and aromatic multi-component systems. ***Q. Smejkal, U. Armbruster, B. Kerler, A. Martin** (Inst. Appl. Chem., Berlin-Adlershof, DE) [403]

D1.3 10.40 Residence time distribution in a transpiring wall reactor for supercritical water oxidation. ***K. Lieball, B. Wellig, P. Rudolf von Rohr** (Swiss Fed. Inst. Technol., Zürich, CH) [564]

11.00 Coffee break

D1.4 11.30 Application of metal oxide catalyst vs. redox catalyst for the partial oxidation of propane in dense CO2. ***B. Kerler, A. Martin, M. Baerns** (Inst. Appl. Chem., Berlin-Adlershof, DE) [893]

D1.5 11.50 Investigation of the decomposition of polymers in super critical water using a new high pressure high temperature magnetic suspension balance. ***R. Seif, K. Nakai[1], F. Dreisbach, H. W. Lösch** (Rubotherm Praezisionsmesstechnik, Bochum, DE; [1]BEL Japan, Osaka, JP) [220]

D1.6 12.10 Mathematical modeling of environmental hazardous waste elimination via chemical reaction with supercritical fluids. ***S. M. Ghoreishi, R. Teflan** (Isfahan Univ. Technol., IR) [1228]

D2 Lectures — Monday afternoon
Symposium on supercritical fluids

Chairmen: R. Eggers, P. Subra

D2.1 14.00 Keynote lecture: Current trends in supercritical fluid technologies. ***T. Gamse, R. Marr** (Graz Univ. Technol., AT) [900]

D2.2 14.40 Silica and alumina aerogels as adsorbents for water vapour. ***Z. Novak, P. Kotnik, Ž. Knez** (Univ. Maribor, SI) [663]

D2.3 15.00 Adsorption of aromatics on MSC in supercritical CO2 fluid. A chromatographic study. **K. Chihara, *T. Kaneko, Y. Inoue, T. Yoshida** (Meiji Univ., Kawasaki, JP) [263]

15.20 Coffee break and poster session

D2.4 16.00 Mass balance calculation to control cholesterol precipitation in a semi-continuous antisolvent process. **P. Subra** (Univ. Paris XIII, FR) [222]

D2.5 16.20 Supercritical CO2-extraction of halogenated flame retardants from polymer materials using different modifiers. ***T. Gamse, R. Marr** (Graz Univ. Technol., AT) [937]

D3 Lectures — Tuesday morning
Symposium on supercritical fluids

Chairmen: T. Gamse, Z. Knez

D3.1 9.40 Keynote lecture: Interfacial phenomena in supercritical fluid processing. ***R. Eggers, P. Jaeger** (Tech. Univ. Hamburg-Harburg, DE) [1278]

D3.2 10.20 Continuous decaffeination of liquid coffee-extract. ***H. Marckmann, R. Eggers** (Tech. Univ. Hamburg-Harburg, DE) [627]

D3.3 10.40 Resolution of N-methylamphetamine by supercritical fluid extraction. ***I. Kmecz, B. Simándi, E. Székely, E. Fogassy, I. Markovits** (Budapest Univ. Technol. Econ., HU) [658]

11.00 Coffee break

D3.4 11.30 Evaluation of extraction curves obtained by supercritical fluid extraction from plant materials. **H. Sovová** (Inst. Chem. Proc. Fundam., Praha, CZ) [280]

D3.5 11.50 Isolation of high value components from marjoram (Origanum majorana L.) by extraction with supercritical carbon dioxide. ***E. Vági, B. Simándi, K. P. Vásárhelyiné[1], É. Héthelyi, Á. Suhajda, A. Deák, J. Sawinsky** (Budapest Univ. Technol. Econ., HU; [1]Cent. Food Res. Inst., Budapest, HU) [491]

D3.6 12.10 Effect of operation conditions on eugenol contents in clove bud oil extracted by supercritical carbon dioxide. ***S. Machmudah, M. Sumarno, S. Winardi** (Sepuluh Nopember Inst. Technol., Surabaya, ID) [1126]

D4 Lectures — Tuesday afternoon
Separation processes

Extraction

Chairmen: H.-J. Bart, J. Procházka

D4.1 14.00 Theory of electroviscoelasticity. ***A. M. Spasic, M. D. Babic, M. M. Marinko, N. N. Djokovic, M. Mitrovic[1], D. N. Krstic[1]** (Inst. Technol. Nucl. Miner. Raw Mat., Beograd, YU; [1]Fac. Technol. Metall., Beograd, YU) [719]

D4.2 14.20 Annular chromatography - a review on potential applications. ***H.-J. Bart, J. Brozio, L. Garcia Diez** (Univ. Kaiserslautern, DE) [116]

D4.3 14.40 Extraction of Mo(VI) and W(VI) with trialkylamine. ***J. Procházka, A. Heyberger, E. Volaufová** (Inst. Chem. Proc. Fundam., Praha, CZ) [1018]

D4.4 15.00 Indirect (contactless) mass exchange between two phases. ***A. E. Kostanyan, W. Baecker** (Inst. Gen. Inorg. Chem., Moskva, RU) [857]

15.20 Coffee break and poster session

D4.5 16.00 Design of three phase separators for removal of organic liquids in water. ***D. Hadjiev, N. Sabiri, L. L. Limousy** (Univ. Bretagne Sud, Lorient, FR) [628]

D4.6 16.20 Formation and stabilization of gel emulsions. ***S. N. Ashrafizadeh, M. Hosseinzadeh** (Iran Univ. Sci. Technol., Tehran, IR) [1160]

D4.7 16.40 Unsteady heat transfer from a fluid sphere. ***A. Saboni, S. Alexandrova, C. Gourdon[1]** (Univ. Caen, Saint Lo, FR; [1]ENSIACET, Toulouse, FR) [679]

D5 Lectures — Wednesday morning
Separation processes

Extraction

Chairmen: P. Nekovář, A. M. Spasic

D5.1 9.40 Extraction of Mo(VI) salts by primary amine from aqueous sulphuric acid media. **P. Nekovář, *D. Schrötterová** (Inst. Chem. Technol., Praha, CZ) [747]

D5.2 10.00 A review of analytical process scale counter-current chromatography and its potential as a dynamic high resolution solvent extraction process. ***I. A. Sutherland, A. Kostanyan[1], T. Maryutina[2]** (Brunel Univ., Uxbridge, UK; [1]Inst. Gen. Inorg. Chem., Moskva, RU; [2]Inst. Geochem. Anal. Chem., Moskva, RU) [1483]

D5.3 10.20 Solid-liquid extraction of andrographolide from plants - experimental study and model. **R. Wongkittipong, *L. Prat[1], S. Damronglerd, C. Gourdon[1]** (Chulalongkorn Univ., Bangkok, TH; [1]CNRS, Toulouse, FR) [573]

D5.4 10.40 Extraction of betulinic acid and betulin from white birch bark. ***A. Perva-Uzunalic, M. Hadolin[1], Ž. Knez, D. Bauman[1]** (Univ. Maribor, SI; [1]PINUS, Rače, SI) [906]

11.00 Coffee break

D5.5 11.30 Synthesis and application of calix[4]arenes substituted by acetamide and sulfonamide functions to the extraction of gold from highly acidic media. ***K. Belhamel, A. Casnati[1], M. Benamor, L. Takorabet** (Univ. Bejaia, DZ; [1]Univ. Parma, IT) [938]

D5.6 11.50 Reverse micellar extraction of bovine serum albumin using CTAB/isooctane-1-hexanol. **A. Haghtalab, *S. Osfouri** (Tarbiat Modarres Univ., Tehran, IR) [1113]

D7 Lectures — Thursday morning
Particulate solids

Chairmen: J. Shepperson, Y. Tsuchida

D7.1 9.40 Experimental validation of the kinematic and radial flow models for granular materials. ***J Shepperson, R. W. Greenwood, J. P. K. Seville** (Univ. Birmingham, UK) [1508]

D7.2 10.00 FE investigations of the effects of a passive insert on flow patterns in silos. ***S. Ding, J. Y. Ooi, M. Jecmenica[1], G. G. Enstad[1], S. R. De Silva[1]** (Univ. Edinburgh, UK; [1]Telemark Univ. Coll., Porsgrunn, NO) [466]

D7.3 10.20 Simulations of silo discharge flow patterns and predictions of loads on walls and inserts. ***S. Ding, J. Y. Ooi, J. M. Rotter, M. Wojcik[1], M. Jecmenica[1], S. R. De Silva[1]** (Univ. Edinburgh, UK; [1]Telemark Univ. Coll., Porsgrunn, NO) [389]

D7.4 10.40 New multi-stage centrifugal classification in almost rigidly rotating flow. **K. Nakabayashi, *Y. Tsuchida** (Nagoya Inst. Technol., JP) [1024]

11.00 Coffee break

D7.5 11.30 Instruments for dry in-line particle size analysis by laserdiffraction including representative sampling and dry dispersing. **A. Pankewitz** (Sympatec GmbH, Clausthal-Zellerfeld, DE) [1258]

D7.6 11.50 Influence of air humidity and surfactant coating on the flow properties of fine powders. ***S. Thümmler, D. Höhne, K. Husemann** (Freiberg Univ. Mining Technol., DE) [322]

D7.7 12.10 Experimental investigations of bulk material falling processes using LDV. **C. Trenker, *W. Höflinger** (Tech. Univ., Wien, AT) [457]

E

E1 Lectures — Monday morning
Symposium on transient multiphase flows

Chairmen: M. Giot, Y. Taitel

E1.1 9.40 Keynote lecture: Boiling of surfactant solutions. ***G. Hetsroni, A. Mosyak, R. Rozenblit, Z. Segal** (Technion IIT, Haifa, IL) [1185]

E1.2 10.20 PIV measurements of the velocity field around a Taylor bubble in a vertical pipe. ***L. Shemer, A. Gulitski, D. Barnea** (Tel-Aviv Univ., IL) [988]

E1.3 10.40 Bubble measurement and characterization using optical fiber probe: Relationship between measuring accuracy and bubble interfacial deformation. **T. Saito, *S. Yamamoto, T. Yamashita, M. Fukawa, H. Kusano** (Shizuoka Univ., JP) [406]

11.00 Coffee break

E1.4 11.30 Keynote lecture: Multiscale characteristics of bubbly flow in simple and complex geometries. **I. Žun** (Univ. Ljubljana, SI) [1203]

E1.5 12.10 Comparison between temporal pressure and ERT signals in a bubble column. **E. Fransolet, D. Toye, *M. Crine, G. L'Homme, P. Marchot** (Univ. Liege, BE) [1123]

E2 Lectures — Monday afternoon
Symposium on transient multiphase flows

Chairmen: M. Crine, L. Shemer

E2.1 14.00 Keynote lecture: Two-phase flow water hammer transients and induced loads on materials and structures (WAHALoads). ***M. Giot, A. Dudlik[1], E. Lauter[2], H. Lemonnier[3], I. Tiselj[4], F. Castrillo[5], W. Van Hove[6], R. Perezagua[7], S. Potapov[8], J. M. Seynhaeve** (Cathol. Univ., Louvain-la-Neuve, BE; [1]Fraunhofer UMSICHT, Oberhausen, DE; [2]Framatone ANP, Offenbach, DE; [3]CEA, Grenoble, FR; [4]J. Stefan Inst., Ljubljana, SI; [5]Iberdola, Madrid, ES; [6]Tractebel, Bruxelles, BE; [7]Empresarios Agrupados, Madrid, ES; [8]EDF, Clamart) [1098]

E2.2 14.40 Water hammer and cavitational hammer in process plant pipe systems. ***A. Dudlik, S. B. H. Schönfeld, O. Hagemann, H. Fahlenkamp[1]** (Fraunhofer UMSICHT, Oberhausen, DE; [1]Univ. Dortmund, DE) [6]

E2.3 15.00 Observation of transients in slug flow using electrical capacitance tomography. ***B. J. Azzopardi, W. W. Clark, G. Baker, T. Dyakowski[1]** (Univ. Nottingham, UK; [1]UMIST, Manchester, UK) [228]

15.20 Coffee break and poster session

E2.4 16.00 Atomization of liquids by critical two phase gas-liquid flow. Effects of the flow regime inside the nozzle on the spray. ***M. Lörcher, D. Mewes** (Univ. Hannover, DE) [620]

E2.5 16.20 Keynote lecture: Fast visualization of transient two-phase flows and mixing processes in single phase flows by means of electrode-mesh sensors. **H.-M. Prasser** (Res. Cent., Rossendorf, DE) [1244]

E2.6 17.00 Direct steam generation in parallel pipes using solar energy. **S. Natan, D. Barnea, *Y. Taitel** (Tel Aviv Univ., IL) [1085]

E3 Lectures—Tuesday morning Fluid flow and multiphase systems

Gas-liquid flow

Chairmen: G. Hetsroni, I. Zun

E3.1 9.40 Keynote lecture: Fluid flow and thermodynamics via art. **A. Tamir** (Ben-Gurion Univ. Negev, Beer-Sheva, IL) [1161]

E3.2 10.20 Description of flow regimes in a flat bubble column via wavelet transform. **E. Olmos, C. Gentric, *G. Wild, S. Poncin, N. Midoux** (LSGC, Nancy, FR) [1199]

E3.3 10.40 Improved model for homogeneous bubbly flow. ***S. Scheid, M. Schlüter, S. John, O. Bork, H. Parchmann, N. Räbiger** (Univ. Bremen, DE) [1050]

11.00 Coffee break

E3.4 11.30 Limitations of stochastic approach in the calcualtions of particle and bubble dispersion in turbulent free shear flows. ***X. Yang, N. H. Thomas[1], L. J. Guo[2], L. Li** (Univ. Paisley, UK; [1]FRED Ltd., Birmingham, UK; [2]Xi'an Jiaotong Univ., CN) [1205]

E3.5 11.50 Sensitivity analysis of the transverse distribution of bubbles in laminar flows in the limit of small particle Reynolds numbers. **T. Ho, *P. Séchet, A. Cartellier** (LEGI, Grenoble, FR) [662]

E3.6 12.10 Comparison of numerical and analytical solutions of the one-dimensional dispersion model. ***N. Siyakatshana, V. Kudrna, V. Machoň, J. Čermáková** (Inst. Chem. Technol., Praha, CZ) [418]

E4 Lectures—Tuesday afternoon Fluid flow and multiphase systems

Bubbles, particles, jets

Chairmen: D. Mewes, H.-M. Prasser

E4.1 14.00 Particles-liquid hydrodynamics and mixing of suspensions in airlift loop tanks (ALT). ***J. A. Trilleros, R. Díaz[1], P. Redondo** (Univ. Complutense, Madrid, ES; [1]Univ. San Pablo, Madrid, ES) [289]

E4.2 14.20 The effect of gas inlet height and orifice diameter on liquid velocity and gas holdup in an airlift bubble column. ***F. Yamashita, Y. Kiba, H. Nakatuji, K. Takashina** (Kanagawa Inst. Technol., JP) [162]

E4.3 14.40 Mass transfer at swarms of droplets under the influence of interfacial convections. ***M. Tourneau, J. Stichlmair** (Tech. Univ., München, DE) [496]

E4.4 15.00 Experimental study of vortex structures in a pulsating impinging jet. ***J. Vejražka, P. Marty[1], J. Tihon** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]CEA, Grenoble, FR) [459]

15.20 Coffee break and poster session

E4.5 16.00 A quantitative 3-D flow visualisation technique. ***A. Ramadan, S. Michelet[1], K. C. Lee[1], M. Yianneskis[1]** (City Univ. London, UK; [1]King's Coll. London, UK) [890]

E4.6 16.20 Surfactant effects in liquid jets. ***M. Weiss, R. C. Darton, T. Battal, C. D. Bain** (Univ. Oxford, UK) [295]

E4.7 16.40 A miniature laser sheet anemometer. ***A. Aroussi, M. Menacer** (Univ. Nottingham, UK) [1370]

E4.8 17.00 Pulverised fuel flow through bifurcators in power station pipelines. ***A. Aroussi, S. Abdul-ghani** (Univ. Nottingham, UK) [1372]

E5 Lectures—Wednesday morning Fluid flow and multiphase systems

Multiphase CFD

Chairmen: B. Azzopardi, X. Yang

E5.1 9.40 Keynote lecture: Requirements for accurate numerical calculations of bubbly flows and associated sensitivity studies. ***M. Sommerfeld, E. Bourloutski** (Martin-Luther-Univ., Halle-Wittenberg, DE) [1514]

E5.2 10.20 Analysis of particle transport processes for the calculation of particle separation in a gas cyclone. ***C. A. Ho, M. Sommerfeld** (Martin-Luther-Univ., Halle-Wittenberg, DE) [989]

E5.3 10.40 CFD calculation of particle-wall adhesion in horizontal pneumatic conveying of fine powder. ***E. Heinl, M. Bohnet** (Tech. Univ. Braunschweig, DE) [957]

11.00 Coffee break

E5.5 11.30 Computer simulation of turbulent flow in a rectangular channel. **I. Roušar, *K Petera, P. Ditl** (Czech Tech. Univ., Praha, CZ) [1153]

E5.6 11.50 Numerical three-dimensional simulation of horizontal steam generator thermal-hydraulics: steady-state and transient conditions. **V. D. Stevanovic, *Z. V. Stosic[1], M. Kiera[1], U. Stoll[1]** (Fac. Mech. Eng., Beograd, YU; [1]Framatome ANP GmbH, Erlangen, DE) [1059]

E6 Lectures—Wednesday afternoon Fluid flow and multiphase systems

Multiphase CFD

Chairmen: M. Růžička, M. Sommerfeld

E6.1 14.00 Influence of instabilities on the trajectory of a light sphere. ***M. Jenny, G. Bouchet, J. Dušek** (Inst. Mech. Fluids, Strasbourg, FR) [25]

E6.2 14.20 Direct numerical simulation of mass transfer between rising gas bubbles and water. ***D. Bothe, M. Koebe, K. Wielage, J. Pruess[1], H.-J. Warnecke** (Univ. Paderborn, DE; [1]Martin-Luther Univ., Halle, DE) [237]

E6.3 14.40 Parallelization and performance optimization of a dynamic CFD reactor model. ***H. Lindborg, V. Eide, S. Unger[1], S. T. Henriksen, H. A. Jakobsen** (Norwegian Univ. Sci. Technol.,Trondheim, NO; [1]Fraunhofer FIRST, Berlin, DE) [1190]

E6.4 15.00 Modelling bubble collisions, coalescence and break-up using the Lagrangian approach. ***M. Sommerfeld, D. Bröder, M. Růžička[1], J. Drahoš[1]** (Martin-Luther-Univ., Halle-Wittenberg, DE; [1]Inst. Chem. Proc. Fundam., Praha, CZ) [987]

15.20 Coffee break and poster session

E6.5 16.00 CFD and PIV aided study of hydrodynamic and mixing in a Couette-Taylor mixing device. Application to animal cell culture. **H. Ben Amor, L. Coulon, B. Haut, V. Halloin, *F. Peeters** (Univ. Libre, Bruxelles, BE) [826]

E6.6 16.20 CFD code application for flow through narrow channels with corrugated walls. **S. V. Paras, *A. G. Kanaris, A. A. Mouza, A. J. Karabelas** (Aristotle Univ., Thessaloniki, GR) [621]

E6.7 16.40 Mass transfer jump conditions for double emulsion systems. **E. Morales-Zárate, *J. A. Ochoa-Tapia** (Univ. Autonom. Metrop., Iztapalapa, MX) [810]

E6.8 17.00 Electrophoretic mobility in concentrated suspensions of charge-regulating colloidal spheres. ***J. M. Ding, H. J. Keh** (Nat. Taiwan Univ., Taipei, TW) [18]

E7 Lectures—Thursday morning
Fluid flow and multiphase systems

Particulate systems

Chairmen: V. Staněk, J. Tobis

E7.1 9.40 Keynote lecture: Review of recent experimental results and evaluation of physical criteria required for surfactant drag reduction. ***J. L. Zakin, Yunying Qi, Ying Zhang** (Ohio State Univ., Columbus OH, US) [724]

E7.2 10.20 Experimental characterization of the dynamic of bubbles flowing in fixed beds. **M.-L. Bordas, A. Cartellier, *P. Séchet, C. Boyer[1]** (LEGI, Grenoble, FR; [1]Inst. Fr. Pet., Vernaison, FR) [456]

E7.3 10.40 Turbulent flow behaviour within complex structures. **J. Tobis** (Inst. Phys. Chem., Warszawa, PL) [300]

11.00 Coffee break

E7.4 11.30 Network modelling of flow in a packed bed. ***A. A. Martins, M. M. Dias, J. C. B. Lopes** (Univ. Porto, PT) [526]

E7.5 11.50 Computing of experimental research of the process dehydration and granulation in an air-fluidized bed. **Ya. Korniyenko, *G. Statyukha, D. Skladannyy** (Nat. Tech. Univ., Kyiv, UA) [738]

E7.6 12.10 Characterisation of pulverised fuel roping. ***A. Aroussi, D. Giddings, S. J. Pickering, E. Mozzafari** (Univ. Nottingham, UK) [1373]

E8 Lectures—Thursday afternoon
Fluid flow and multiphase systems

Film flow and rheology

Chairmen: O. Wein, J. Zakin

E8.1 14.00 Keynote lecture: Wavy film flows: linear stability and evolution. ***O. Wein, J. Tihon** (Inst. Chem. Proc. Fundam., Praha, CZ) [1061]

E8.2 14.40 Hydrodynamics of the solitary waves travelling down a liquid film. ***J. Tihon, V. Tovčigrečko, V. Sobolík, O. Wein** (Inst. Chem. Proc. Fundam., Praha, CZ) [1149]

E8.3 15.00 Rheological properties of aqueous ceria dispersions. ***A. Nacu, J. P. Hsu** (Nat. Taiwan Univ., Taipei, TW) [70]

15.20 Coffee break and poster session

E8.4 16.00 Non-Newtonian fluid flow modeling through piping system using power law and Sisko model. ***P. Ternik, J. Marn** (Univ. Maribor, SI) [535]

E8.5 16.20 Fluid transportation at extremely high or low temperatures. ***R. Kraemer, R. Neumaier** (HERMETIC-Pumpen GmbH, Gundelfingen, DE) [54]

E8.6 16.40 Mathematical simulation of non-Newtonian liquid (catalytic paste) flow in ram extruder. ***A. V. Jensa, A. V. Mironov, E. A. Medvedev, V. V. Kostyuchenko, I. A. Petropavlovskiy, V. A. Filippin, E. M. Koltsova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [360]

E8.7 17.00 Rheological behavior of motor oil. ***S. G. Etemad, A. Mellati, J. Thibault[1]** (Isfahan Univ. Technol., IR; [1]Univ. Ottawa, CA) [88]

F

F1 Lectures—Monday morning
Fluid flow and multiphase systems

Mixing

Chairmen: O. Bork, T. Moucha

F1.1 9.40 Transport characteristics of multiple-Lightnin A315 impellers in gas-liquid dispersions. **T. Moucha, V. Linek, *M. Fujasová** (Inst. Chem. Technol., Praha, CZ) [606]

F1.2 10.00 Prediction of gas hold up distribution in an aerated stirred-tank with disc turbine. ***Altway, Danawati, S. Winardi** (Sepuluh Nopember Inst. Technol., Surabaya, ID) [1131]

F1.3 10.20 Experimental study on mass transfer mechanism in gas-liquid dispersions. ***M. Kordač, V. Linek, T. Moucha** (Inst. Chem. Technol., Praha, CZ) [463]

F1.4 10.40 Gas hold-up and power input in two- and three-phase dual-impeller stirred reactor. ***H. Majířová, T. Prikopa, M. Jahoda, V. Machoň** (Inst. Chem. Technol., Praha, CZ) [472]

11.00 Coffee break

F1.5 11.30 Study on three-phase continuous stirred mixer. ***J. Čermáková, V. Kudrna, V. Machoň, N. Siyakatshana, M. Jahoda** (Inst. Chem. Technol., Praha, CZ) [405]

F1.6 11.50 Influence of wake mixing on mass transfer in gas-liqid reactors. ***P. Bork, M. Schlueter, N. Raebiger** (Univ. Bremen, DE) [913]

F2 Lectures—Monday afternoon
Fluid flow and multiphase systems

Mixing

Chairmen: W. Bujalski, E. Szalai

F2.1 14.00 Dynamics of laminar mixing in continuous stirred tank reactors. ***P. E. Arratia, J. Kukura, F. J. Muzzio** (Rutgers Univ., Piscataway NJ, US) [1227]

F2.2 14.20 Mixing of non-Newtonian fluids in stirred tanks. ***P. E. Arratia, F. J. Muzzio** (Rutgers Univ., Piscataway NJ, US) [1229]

F2.3 14.40 Study of blending efficiency of pitched blade impellers. ***I. Fořt, T. Jirout, F. Rieger, R. Allner[1], R. Sperling[1]** (Czech Tech. Univ., Praha, CZ; [1]Anhalt Univ. Appl. Sci., Köthen, DE) [1224]

F2.4 15.00 Investigation of low frequency fluctuations in flow field in stirred tank with double fan turbines. **Widiastuti, Altway, *S. Winardi** (Sepuluh Nopember Inst. Technol., Surabaya, ID) [1130]

15.20 Coffee break and poster session

F2.5 16.00 Nonlinear analysis of tangential dynamical force affecting radial baffles in a stirred vessel. ***P. Hasal, J. Kratěna[1], I. Fořt[1]** (Inst. Chem. Technol., Praha, CZ; [1]Czech Tech. Univ., Praha, CZ) [650]

F2.6 16.20 The dynamic pressure along a standard baffle in a vessel agitated by a Rushton turbine: CFD simulation compared to experimental results. ***J. M. Bujalski, Z. Jaworski[1], W. Bujalski, I. Fořt[2], A. W. Nienow** (Univ. Birmingham, UK; [1]Tech. Univ. Szczecin, PL; [2]Czech Tech. Univ., Praha, CZ) [671]

F2.7 16.40 Correlation of discharge flow rate in a vessel with pitched blade paddle impeller. ***S. Hiraoka, Y. Tada, Y. Kato, Y. Murakami, A. Matsuura, T. Yamaguchi** (Nagoya Inst. Technol., JP) [311]

F3 Lectures—Tuesday morning
Fluid flow and multiphase systems

Mixing

Chairmen: A. Bakker, K. J. Bittorf

F3.1 9.40 Computer aided mixing modeling using the Galerkin least-squares finite element technique. ***K. J. Bittorf, K. Johnson** (Dantec Dynamics Inc., Mahwah NJ, US) [419]

F3.2 10.00 CFD analysis of effects of geometrical and process parameters on power and kinetics of mixing operations. ***S. Bašic, M. Hriberšek, L. Škerget** (Fac. Mech. Eng., Maribor, SI) [410]

F3.3 10.20 Modeling of turbulence in stirred vessels using large Eddy simulation. ***A. Bakker, K. Dhanasekharan, A. Haidari, S. E. Kim** (Fluent Inc., Lebanon NH, US) [254]

F3.4 10.40 Maximum power consumption of an agitator heaving inclined blades. ***S. Masiuk, D. Pisarek** (Tech. Univ. Szczecin, PL) [921]

11.00 Coffee break

F3.6 11.30 Breakage of oil drops in Newtonian and non-Newtonian continuous phase in Kenics mixers. ***Aylianawati, C. Manileve[1], M. Baker[2], A. W. Pacek** (Univ. Birmingham, UK; [1]Carollo Engrs., Santa Ana, CA, US; [2]Unilever Res., Port Sunlight, UK) [716]

F3.7 11.50 Study of micromixing in a stirred tank using a Rushton turbine: comparison of feed positions and other mixing devices. ***M. Assirelli, W. Bujalski, A. W. Nienow, A. Eaglesham[1]** (Univ. Birmingham, UK; [1]Huntsman Polyurethanes, Bruxelles, BE) [1531]

F4 Lectures—Tuesday afternoon
Mixing of suspensions

Chairmen: S. M. Kresta, G. Montante

F4.1 14.00 Choice of a proper equipment for suspension mixing. ***F. Rieger, P. Ditl** (Czech Tech. Univ., Praha, CZ) [624]

F4.2 14.20 Potentials of a nickel/aluminum alloy tracer for solid-phase flow identification in suspension mixing vessels. **S. D. Vlaev** (Inst. Chem. Eng., Sofia, BG) [110]

F4.3 14.40 Mixing of suspension with axial-flow hydrofoil impeller. ***M. Špidla, V. Sinevič, T. Hnízdil** (Inst. Chem. Technol., Praha, CZ) [508]

F4.4 15.00 CFD predictions of solid concentration distributions in a baffled stirred vessel agitated with multiple PBT impellers. ***G. Montante, D. Rondini, A. Bakker[1], F. Magelli** (Univ. Bologna, IT; [1]Fluent Inc., Lebanon NH, US) [269]

15.20 Coffee break and poster session

F4.5 16.00 Image analysis of agitated particle - liquid transparent system. ***V. Šedivý, P. Ditl, M. Severa[1]** (Czech Tech. Univ., Praha, CZ; [1]Inst. Hydrodyn., Praha, CZ) [1154]

F4.6 16.20 Distribution of solids and solids cloud height in a stirred tank. ***S. M. Kresta, K. J. Bittorf**[1] (Univ. Alberta, Edmonton, CA; [1]Dantec Dynamics, Mahwah NJ, US) [646]

F4.7 16.40 Some remarks on the scale-up conditions for the solid distribution in slurry reactors stirred with multiple impellers. **G. Montante, D. Pinelli, *F. Magelli** (Univ. Bologna, IT) [1101]

F5 Lectures—Wednesday morning Separation processes

Filtration

Chairmen: W. Höflinger, J. Přidal

F5.1 9.40 Characterization of the resistance behavior and separation efficiency of precoat-layers built up during crossflow filtration. ***H. Hess, W. Höflinger** (Tech. Univ., Wien, AT) [412]

F5.2 10.00 Sorption filter materials as challenge for separation technology. **M. Milichovský** (Univ. Pardubice, CZ) [39]

F5.3 10.20 Experimental analysis of particle retention on different filter media in solid-liqid filtration. ***M. Rainer, W. Höflinger** (Tech. Univ. Wien, AT) [846]

F5.4 10.40 Transfer phenomena during the drying of a shrinkable product : modeling and simulation. ***D. Mihoubi, F. Zagrouba, J. Vaxelaire**[1]**, A. Bellagi**[2] (Inst. Nat. Res. Sci. Tech., Hammam-Lif, TN; [1]ENSIG, Pau, FR; [2]Ec. Nat. Ing. Monastir, TN) [124]

11.00 Coffee break

F5.5 11.30 Description of the clogging behaviour of nonwovens for cleanable dust filters by internal particle rearrangement. ***G. Mauschitz, W. Koschutnig, W. Höflinger** (Vienna Univ. Technol., AT) [273]

F5.6 11.50 The growing market for hot off-gas filtration media. ***I. Schildermans, J. Baeyens** (Cathol. Univ. Leuven, Heverlee, BE) [243]

F5.7 12.10 A study on the application of filter-aids in ZDDP filtration. ***M. Mehrabi, S. S. Nouri, A. Khaleghinasab** (NIOC, Tehran, IR) [1384]

F6 Lectures—Wednesday afternoon Heat transfer processes

Chairmen: B. S. Repic, F. Rashidi

F6.1 14.00 Flow inversion for RTD and heat transfer improvement in closed ducts. ***L. C. Tu, R. Žitný, P. Střasák**[1]**, J. Šesták** (Czech Tech. Univ., Praha, CZ; [1]Techsoft Engineering s. r. o., Praha, CZ) [981]

F6.2 14.20 Three-dimensional combustion modelling of a biomass fired pulverized fuel boiler. ***M. Stastny, F. Ahnert, H. Spliethoff** (Tech. Univ., Delft, NL) [119]

F6.3 14.40 Estimation of quality and efficiency of coal combustion. ***B. S. Repic, M. P. Jovanovic, N. D. Crnomarkovic, R. V. Mladenovic** (Inst. Nucl. Sci. Vinča, Beograd, YU) [905]

F6.4 15.00 Thermal analysis of a cylindrical battery using a mathematical model. ***F. Rashidi, R. Badrnezhad** (Amirkabir Univ. Technol., Tehran, IR) [175]

15.20 Coffee break and poster session

F6.5 16.00 A new improved method of process design of liquid ring pump. **B. Hayadar, *D. Rashtchian, D. R. Webb**[1] (Sharif Univ. Technol., Tehran, IR; [1]UMIST, Manchester, UK) [1103]

F6.6 16.20 Influence of an inert gas on surface tension driven instabilities of pure evaporating liquids. **P. Colinet, B. Haut, J. Margerit**[1]**, *F. Peeters, J. C. Legros, G. Lebon, V. Halloin** (Univ. Libre, Bruxelles, BE; [1]Univ. Liege, BE) [858]

F7 Lectures—Thursday morning Fluid flow and multiphase systems

Fluidization

Chairmen: J. Baeyens, D. Gidaspow

F7.1 9.40 Keynote lecture: Hydrodynamics of fluidization: structure and turbulence. **D. Gidaspow** (Illinois Inst. Technol., Chicago IL, US) [1165]

F7.2 10.20 The assessment of the solids flow in the riser of a circulating fluidised bed (CFB) through positron imaging. ***C. Vandewalle, D. J. Parker**[1]**, J. P. K. Seville**[1]**, J. Baeyens** (Cathol. Univ. Leuven, Heverlee, BE; [1]Univ. Birmingham, UK) [240]

F7.3 10.40 The influence of the core-annulus flow of dilute CFB risers on the residence time distribution of the gas phase. ***C. Vandewalle, J. Degréve, J. Baeyens** (Cathol. Univ. Leuven, Heverlee, BE) [244]

11.00 Coffee break

F7.4 11.30 Examination of flow field and temperature profiles in circulating fluidised bed. ***R. V. Filkoski, A. J. Stefanova**[1]**, I. J. Petrovski, A. T. Nospal** (Univ. Sv. Kiril i Metodij, Skopje, MK; [1]Univ. British Columbia, Vancouver, CA) [691]

F7.5 11.50 The carry-over of catalyst from large fluidized bed gas-catalytic reactors. **I. Schildermans, *J. Baeyens** (Cathol. Univ. Leuven, Heverlee, BE) [241]

F8 Lectures—Thursday afternoon Fluid flow and multiphase systems

Fluidization

Chairmen: I. Machač, K. Svoboda

F8.1 14.00 CFD modelling of an industrial polymerisation fluidised bed. ***A. Gobin, G. Patino, O. Simonin, J. R. Llinas**[1]**, E. Helland**[1]**, V. Reiling**[1] (CNRS-INPT, Toulouse, FR; [1]BP Chemicals, Lavéra, FR) [622]

F8.2 14.20 Fluidization of beds of non-spherical particles with viscoelastic fluids. **R. Teichman, P. Brokl, B. Šiška, *I. Machač** (Univ. Pardubice, CZ) [694]

F8.3 14.40 High temperature defluidisation: a micro mechanistic approach. ***P. Pagliai, D. Rhodes[1], S. J. R. Simons** (Univ. Coll., London, UK; [1]British Nucl. Fuels, Sellafield, UK) [479]

F8.4 15.00 FLUMOV: An innovative dryer based on fluidised-moving bed. ***J. M. Aragón, M. C. Palancar, M. D. Liébanes, A. B. Vicent** (Univ. Complutense, Madrid, ES) [304]

15.20 Coffee break and poster session

F8.5 16.00 Effect of electric field on the transition velocity of an electrically stabilized fluidized bed. ***J. B. Helonde, N. T. Khobragade[1], P. Patil[1], R. L. Sonolikar[1]** (Coll. Eng., Wardha, IN; [1]Laxminarayan Inst. Technol., Nagpur, IN) [743]

G

G1 Lectures — Monday morning
Computer aided process engineering

Process control

Chairmen: M. Bakošová, R. Dhib

G1.1 9.40 Process Control of a 2-Bed Pressure Swing Adsorption Plant and Laboratory Experiment. ***M. Bitzer, W. Lengerer, M. Stegmaier, G. Eigenberger, M. Zeitz** (Univ. Stuttgart, DE) [833]

G1.2 10.00 Decentralized adaptive control of MIMO systems: Application to distillation columns. ***M. Bakošová, M. Ondrovičová, M. Karšaiová** (Slovak Univ. Technol., Bratislava, SK) [428]

G1.3 10.20 Identification and online control of an industrial fluidized catalytic cracking unit. **M. Khalilian, *R. Dhib** (Ryerson Univ., Toronto, CA) [1209]

G1.4 10.40 Enhanced plant data utilization with on-line residence time calculator. ***A. Pasanen, U. Ojaniemi, M. Olin, J. Pennanen[1]** (VTT Chem. Technol., Espoo, FI; [1]Metso Automation Inc., Tampere, FI) [746]

11.00 Coffee break

G1.5 11.30 Non-linear parameter estimation of distillation column. **A. M. Mehrabani Zeinabad** (Isfahan Univ. Technol., IR) [364]

G1.6 11.50 A neuro-fuzzy controller for product composition control of the ethanol distillation plant. **J. Savkovic-Stevanovic** (Fac. Technol. Metall., Beograd, YU) [1102]

G2 Lectures — Monday afternoon
Computer aided process engineering

Plant operation

Chairmen: M. Dohnal, A. A. Levis

G2.1 14.00 A framework towards the optimal synthesis and operational modelling of batch processes. ***I. Papaeconomou, S. B. Jorgensen, R. Gani** (Tech. Univ. Denmark, Lyngby, DK) [1006]

G2.2 14.20 A mathematical programming approach for multi-site capacity planning in the pharmaceutical industry. ***A. A. Levis, L. G. Papageorgiou** (Univ. Coll. London, UK) [1014]

G2.3 14.40 On line approach for optimal maintenance management for continuous parallel process. ***S. E. Sequeira, M. Graells[1], L. Puigjaner** (Univ. Polit. Catal., Barcelona, ES; [1]EUETIB, Barcelona, ES) [49]

G2.4 15.00 Making value from financial-supply chain schedule integration. ***M. Badell, M. Auger, G. Santos[1], L. Puigjaner[2]** (EUETIB, Barcelona, ES; [1]Cimade S. L., Barcelona, ES; [2]Univ. Polytech. Catalunya, Barcelona, ES) [173]

15.20 Coffee break and poster session

G2.5 16.00 Case-based reasoning system for wastewater treatment selection. ***Y. Avramenko, S. V. Kolesnikov, N. Menshutina, A. Kraslawski[1]** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU; [1]Lappeenranta Univ. Technol., FI) [309]

G2.6 16.20 SimuChemPro : An object-oriented environment for modeling and simulation. ***A. Farzi, A. M. Zeinabad, S. G. Etemad** (Isfahan Univ. Technol., IR) [373]

G3 Lectures — Tuesday morning
Computer aided process engineering

Modelling, simulation, optimization

Chairmen: R. Gani, M. Kubíček

G3.1 9.40 Keynote lecture: The age of computer aided modelling. **R. Gani** (Tech. Univ. Denmark, Lyngby, DK) [1055]

G3.2 10.20 An alternative approach for on-line optimization of continuous plants operation. ***S. E. Sequeira, M. Graells[1], L. Puigjaner** (Univ. Polit. Catal., Barcelona, ES; [1]EUETIB, Barcelona, ES) [50]

G3.3 10.40 Multi-objective optimization for the design of optimal hybrid fuel cell power plants. ***A. Goyal, U. Diwekar** (Carnegie Mellon Univ., Pittsburgh PA, US) [524]

11.00 Coffee break

G3.4 11.30 Optimisation of a distillation/pervaporation process for the separation of a ternary azeotropic mixture by the use of MINLP. ***D. Brusis, J. Stichlmair** (Tech. Univ., München, DE) [287]

G3.5 11.50 Modelling and numerical simulation of the metal oxide electrodeposition process on rotating electrode. I. Theoretical and

numerical aspects. ***P. Mandin, T. Pauporté, D. Lincot*** (ENSC, Paris, FR) [1500]

G3.6 12.10 Modeling and simulation of gasoline demercaptanization process. ***S. Zarrinpashne, M. Ahmadi Marvast, S. Shokri, M. Bazmi, R. Hashemi, A. M. Mazgarov[1], A. F. Vildanov[1]*** (RIPI, Tehran, IR; [1]J. S. Tatneft, RU) [31]

G4 Lectures — Tuesday afternoon Computer aided process engineering

Computer aided design

Chairmen: E. Bek-Pedersen, F. Stepanek

G4.1 14.00 Keynote lecture: Computer-aided design of granule microstructure. ***F. Stepanek, P. B. Warren*** (Unilever Res., Bebington, UK) [90]

G4.2 14.40 Design and synthesis of separation systems using a driving force approach. ***E. Bek-Pedersen, R. Gani*** (Tech. Univ. Denmark, Lyngby, DK) [1012]

G4.3 15.00 A new component-free approach for simultaneous process and product design through property integration. ***M. R. Eden, S. B. Jorgensen, R. Gani, M. M. El-Halwagi[1]*** (Tech. Univ. Denmark, Lyngby, DK; [1]Auburn Univ, Auburn AL, US) [1007]

15.20 Coffee break and poster session

G4.4 16.00 Computer aided molecular design: application to optimal solvent mixture design. **I. Stanescu, *R. Gani** (Tech. Univ. Denmark, Lyngby, DK) [1010]

G4.5 16.20 Computer aided process safety engineering: Design for safety. ***B. A. Schupp, S. M. Lemkowitz, L. Goossens, A. R. Hale, H. J. Pasman[1]*** (Delft Univ. Technol., NL; [1]TNO, Delft, NL) [420]

G4.6 16.40 Applying fundamental and neural networks theories in the modeling of a commercial FCC unit. **S. Papadokonstantakis, *G. M. Bollas[1], J. Michalopoulos, A. A. Lappas[1], I. A. Vasalos[1], A. Lygeros** (Nat. Tech. Univ. Athens, GR; [1]Chem. Proc. Eng. Res. Inst., Thessaloniki, GR) [1452]

G4.7 17.00 Conceptional design modeling of gas turbine cycle for optimum performance. **A. M. Hany** (Assiut Univ., EG) [4]

G5 Lectures — Wednesday morning Computer aided process engineering

Software packages and AI

Chairmen: M. Ortega, P. Roux

G5.1 9.40 Computer aided system for creating problem specific property models. ***J. W. Kang, R. Gani*** (Tech. Univ. Denmark, Lyngby, DK) [1011]

G5.2 10.00 Open bed-reactor modelling software component. **J. P. Belaud, M. Pons[1], *P. Roux[2]** (INPT, Toulouse, FR; [1]ATOFINA, Pierre-Benite, FR; [2]Inst. Fr. Pet., Vernaison, FR) [652]

G5.3 10.20 UC-PHP: a ubiquitous computing system to predict hydrocarbon properties in a refinery plant. ***M. Ortega, J. Bravo, P. P. Sánchez-Villalón, M. A. Redondo, C. Bravo*** (Univ. Castilla La Mancha, Ciudad Real, ES) [726]

G5.4 10.40 Qualitative models of complex systems as decision support system. **M. Bongards, *M. Dohnal[1]** (Univ. Appl. Sci. Cologne, Gummersbach, DE; [1]Tech. Univ. Brno, CZ) [1442]

11.00 Coffee break

G5.5 11.30 Modeling of an industrial process for isoprene production using neural network based approach. ***R. M. B. Alves, C. A. O. Nascimento*** (Univ. Sao Paulo, BR) [509]

G5.6 11.50 Numerical simulation of processes in pulverized coal boiler furnace, by means of originally developed 3D CFD-code. ***S. Belosevic, S. Oka, M. Sijercic, Lj. Brkic[1], T. Zivanovic[1], Z. Stevanovic*** (Inst. Nucl. Sci., Beograd, YU; [1]Fac. Mech. Eng., Beograd, YU) [33]

G5.7 12.10 Modeling and simulation of NGL demercaptanization process. ***M. Ahmadi Marvast, S. Zarrinpashne, S. Shokri, M. Bazmi, R. Hashemi, A. M. Mazgarov[1], A. F. Vildanov[1]*** (RIPI, Tehran, IR; [1]J. S. Tatneft, RU) [32]

G6 Lectures — Wednesday afternoon Computer aided process engineering

Nonlinear dynamics

Chairmen: A. Kienle, I. Schreiber

G6.1 14.00 Keynote lecture: Computational tools for analysis of nonlinear dynamical systems in chemical engineering. ***I. Schreiber, M. Kohout, M. Kubicek*** (Inst. Chem. Technol., Praha, CZ) [1186]

G6.2 14.40 Firing patterns in periodically perturbed CSTRs. ***V. Kofránková, V. Nevoral, I. Schreiber, M. Marek*** (Inst. Chem. Technol., Praha, CZ) [1129]

G6.3 15.00 Spatiotemporal patterns in biochemical reaction-diffusion-convection systems. **T. Vaníčková, *M. Kohout, I. Schreiber, M. Kubicek** (Inst. Chem. Technol., Praha, CZ) [1180]

15.20 Coffee break and poster session

G6.4 16.00 Keynote lecture: Nonlinear dynamics and control of reactive distillation processes. **A. Kienle** (Max-Planck-Inst. Dyn. Kompl. Tech. Syst., Magdeburg, DE) [1178]

G6.5 16.40 Dynamic simulation in process engineering: studying alternative temperature control systems of an exothermically reacting process. **I. Grau, M. A. Alós, *A. Gómez, J. A. Feliu** (Hyprotech (subs.: Aspen Technology Inc.), Barcelona, ES) [439]

H

H1 Lectures — Monday morning PRES 2002

Chairmen: J. Klemeš, P. Stehlík

H1.1 9.40 PRES Plenary: Sustainable systems theory: ecological and other aspects. **C. W. Pawlowski, A. L. Mayer, N. T. Hoagland, *H. Cabezas** (Nat. Risk Manag. Res. Lab., Cincinnati OH, US) [42]

H1.2 10.20 Keynote lecture: On minimization of the number of heat exchangers in water networks. ***M. Sorin, L. Savulescu** (Nat. Resources Canada, Varennes QC, CA) [35]

11.00 Coffee break

H1.3 11.30 Water network optimization in the process industry - case study of a liquid detergent plant. ***M. Forstmeier, B. Goers, G. Wozny** (Tech. Univ., Berlin, DE) [47]

H1.4 11.50 Nitrogen removal of pig manure liquid fraction. ***M. D. Hidalgo, J. Del Álamo, M. Hernández, R. Irusta** (CARTIF, Valladolid, ES) [83]

H1.5 12.10 WADO: water design optimization methodology and software for the synthesis of process water systems. ***C. Ullmer, N. Kunde[1], A. Lassahn, G. Gruhn, K. Schulz[1]** (Tech. Univ. Hamburg-Harburg, DE; [1]Siemens AG, Erlangen, DE) [612]

H1.6 12.30 Optimal wastewater reuse networks design by adaptive random search optimization. **G. Poplewski, *J. Jezowski, A. Jezowska** (Rzeszow Univ. Technol., PL) [229]

H2 Lectures — Monday afternoon PRES 2002

Chairmen: H. Cabezas, G. Gruhn

H2.1 14.00 PRES Plenary: Process integration for reduced environmental impact. **R. Smith** (UMIST, Manchester, UK) [1033]

H2.2 14.40 Keynote lecture: Environmentally benign solvent selection and in-process solvent recycling in complex batch distillation. ***K.-J. Kim, U. M. Diwekar, K. G. Tomazi[1]** (Carnegie Mellon Univ., Pittsburgh PA, US; [1]Mallinckrodt Inc., St. Louis MO, US) [805]

15.20 Coffee break and poster session

H2.3 16.00 Life cycle analysis of dividing wall columns. **P. Shah, *M. Brodkorb** (Hyprotech Ltd., Calgary, CA) [808]

H2.4 16.20 Design and development of solvent recovery technologies by hybrid separation tools. ***A. Szanyi, P. Mizsey, Z. Fonyo** (Budapest Univ. Technol. Econ., HU) [1181]

H2.5 16.40 New solution for thermal coupling between a crude distillation unit and a delayed coking unit. **V. Plesu, G. Bumbac, M. Munteanu, *I. Ivanescu[1], D. C. Popescu[2]** (Univ. Politehnica, Bucuresti, RO; [1]PETROM, Bucuresti, RO; [2]PETROM, Ploiesti, RO) [1249]

H2.6 17.00 Modelling and simulation of a combined membrane/distillation process. ***P. Kreis, A. Górak** (Univ. Dortmund, DE) [869]

H3 Lectures — Tuesday morning PRES 2002

Chairmen: U. M. Diwekar, F. Friedler

H3.1 9.40 Keynote lecture: CO2 emissions and its impact on refinery industry. **X. X. Zhu** (UMIST, Manchester, UK) [13]

H3.2 10.20 Second law thermodynamics as a utility in developing sustainable technology. ***J. Dewulf, H. Van Langenhove** (Ghent. Univ., BE) [234]

H3.3 10.40 Development of E-Learning for environmental engineering education. **S. Perry** (UMIST, Manchester, UK) [434]

11.00 Coffee break

H3.4 11.30 Waste minimisation - recycling of waste electrical and electronical equipment. ***A. Hornung, J. Schöner, A. Balabanovich, S. Donner, J. Furrer, H. Seifert** (Forschungszentrum, Karlsruhe, DE) [302]

H3.5 11.50 Peroxi-coagulation reactors for the treatment of polluted water. **M. De Francesco, *A. Fedi[1], P. Pera[1], O. Paladino[1]** (Univ. Genova, IT; [1]CIMA, Savona, IT) [713]

H3.6 12.10 Multicriteria decison making in process integration. ***K. Cziner, M. Tuomaala, M. Hurme** (Helsinki Univ. Technol., FI) [870]

H4 Lectures — Tuesday afternoon PRES 2002

Chairmen: J. J. Nossent, G. Wozny

H4.1 14.00 Keynote lecture: Minimisation of water use in a novel sugar manufacturing process. ***K. Urbaniec, J. Wernik** (Warsaw Univ. Technol., Plock, PL) [818]

H4.2 14.40 Analysis of sugar production flowsheets. Part III: Balances at equipment and operation level. ***R. Diaz, M. Ribas García, R. Hurtado Vargas, C. De Armas Casanova, L. Rostgaard Beltran** (ICIDCA, La Habana, CU) [400]

H4.3 15.00 Overview of the environmental problems in beet sugar processing: possible solutions. ***G. Vaccari, E. Tamburini, G. Sgualdino, K. Urbaniec[1], J. Klemeš[2]** (Univ. Ferrara, IT; [1]Warsaw Univ. Technol., Plock, PL; [2]UMIST, Manchester, UK) [543]

15.20 Coffee break and poster session

H4.4 16.00 AWARENET: agro-food wastes minimisation and reduction network. **L. De las Fuentes, B. Sanders[1], *J.**

Klemeš[2] (GAIKER, Zamudio, ES; [1]ADAS, Wolverhampton, UK; [2]UMIST, Manchester, UK) [1328]

H4.5 16.20 Optimization of a ASR pyrolysis reactor for the minimization of energy consumption. ***A. Chiarioni, V. Dovi** (Univ. Genova, IT) [288]

H4.6 16.40 New one-stage MILP procedure for HEN design and retrofit. **A. Barbaro, *M. B. Bagajewicz** (Univ. Oklahoma, Norman OK, US) [531]

H4.7 17.00 Interfaces between process simulation environment and process integration software. **V. Plesu, *C. Marcov-Tacu, G. Bumbac, P. Iancu, M. T. Bercaru, I. Grozeanu**[1] (Univ. Politehnica, Bucuresti, RO; [1]PETROM, Ploiesti, RO) [1247]

H5 Lectures—Wednesday morning PRES 2002

Chairmen: V. Plesu, T. Thonon

H5.1 9.40 Keynote lecture: Targeting the integration of multi-period utility systems for site scale process integration. ***F. Marechal, B. Kalitventzeff**[1] (Swiss Fed. Inst. Technol., Lausanne, CH; [1]Belsim s. a., Saint-Georges-sur-Meuse, BE) [587]

H5.2 10.20 Cooling system design with pressure drop constraints. ***J. Kim, R. Smith** (UMIST, Manchester, UK) [740]

H5.3 10.40 Utility system management using path analysis. ***H. Singh, I. McKay** (Hyprotech Ltd., Calgary, CA) [46]

11.00 Coffee break

H5.4 11.30 Separation of azeotropic mixtures: synthesis of column sequences with recycles. **S. K. Wasylkiewicz, *M. Brodkorb** (Hyprotech Ltd., Calgary, CA) [725]

H5.5 11.50 Alternative approach in optimization of plate type heat exchangers. ***Z. Jegla, P. Stehlík, J. Kohoutek** (Tech. Univ., Brno, CZ) [395]

H5.6 12.10 Entropy generation reduction through chemical pinch analysis. Case study: methanol synthesis heat integrated reactor. ***V. Lavric, D. Baetens**[1], **J. De Ruyck** (Vrije Univ., Bruxelles, BE; [1]Vlaam. Inst. Technol. Onder., Mol, BE) [447]

H6 Lectures—Wednesday afternoon PRES 2002

Chairmen: F. Marechal, J. Paris

H6.1 14.00 Keynote lecture: Reduction of water intake and COD emissions by using new watertreatment technology in paper industry. ***J. J. Nossent, B. Hepp** (TNO Ind. Technol., Delft, NL) [559]

H6.2 14.40 EPPIC Thematic Network "A Competitive European Pulp and Paper Industry". ***P. Badieritaki, A. J. J. F Nossent**[1] (European Process Greece, Zografos, GR; [1]TNO, Delft, NL) [352]

H6.3 15.00 Framework for water minimisation technology evaluation in paper making. ***J. Manninen, S. Kaijaluoto, T. Puumalainen, J. Hakala** (VTT Energy, Jyväskylä, FI) [750]

15.20 Coffee break and poster session

H6.4 16.00 System closure in an integrated newsprint mill, practical application. ***S. Shafiei, S. Domenech**[1], **J. Paris** (Ec. Polytech., Montreal, CA; [1]ENSIGC, Toulouse, FR) [258]

H6.5 16.20 Use of process heat of a pulp mill in a district heating system - synthesis of flexible heat exchanger network. **J. M. Aaltola** (Helsinki Univ. Technol., FI) [45]

H6.6 16.40 Processing of wastes from pulp and paper plant. **J. Oral, J. Sikula, R. Puchýř, Z. Hajný, P. Trunda, *P. Stehlík**[1], **L. Bébar**[1] (EVECO Ltd., Brno, CZ; [1]Tech. Univ., Brno, CZ) [1094]

H6.7 17.00 Energy and water saving - using pinch analysis. **Š. Boháček** (PulpPaper Res. Inst., Bratislava, SK) [1188]

H6.8 17.20 Increasing paper machine performance by integrating biochemical and chemical processes. ***E. Bobu, V. Popa** (Tech. Univ. Iasi, RO) [1246]

H6.9 17.40 Examples of practical applications of process integration to pulp and paper mills. **T. Retsina, *S. Rouzinou** (American Process Inc., Athens, GR) [455]

H7 Lectures—Thursday morning PRES 2002

Chairmen: S. Kaijaluoto, A. Hornung

H7.1 9.40 Keynote lecture: Design and optimisation of the dividing wall column for product separation in an oil refinery. ***V. Plesu, R. D. Isopescu, T. Gheorghita**[1] (Univ. Politehnica, Bucuresti, RO; [1]Astra Romana, Ploiesti, RO) [1235]

H7.3 10.20 The using of plate heat exchangers with optimal grouping for district heating systems. **L, L. Tovazhniansky, T. G. Babak, *G. L. Havin**[1], **O. P. Arseneva**[1] (Nat. Tech. Univ., Kharkiv, UA; [1]Sodrugesrtvo, Kharkiv, UA) [602]

H7.4 10.40 Long-term leaching behaviour of zinc in Portland Cement. ***M. F. De Velasco, A. Andrés, A. Irabien** (Univ. Cantabria, Santander, ES) [761]

11.00 Coffee break

H7.5 11.30 Conceptional design modeling of combined power generation cycle for optimum performance. **A. M. Hany** (Assiut Univ., EG) [5]

H7.6 11.50 New approach to the exposure-response study of the industrial impact on forest. ***O. B. Butusov, V. P. Meshalkin**[1] (Forest Ecol. Cent., Moskva, RU; [1]Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [1088]

I

I1 Lectures—Monday morning CAETS Symposium of synergies of various engineering branches

Moderation and introductory lecture. **J. Koubek** (Inst. Chem. Technol., Praha, CZ)

Keynote lecture: The role of interdisciplinary co-operation in the history and perspectives of chemical industry. **J. Horák** (Inst. Chem. Technol., Praha, CZ)

Engineering achievements of the 20th Century and challenges for the 21st. **W. A. Wulf** (President, Nat. Acad. Eng., US)

Nanotechnology: The challenge for the educators. **G. Tegart** (Victoria Univ. Technol., Melbourne, AU)

The China's greatest achievements of engineering and technological sciences in the 20th Century. **Song Jian** (Chinese Acad. Eng., CN)

Collaboration between universities and industry. **A. Broers** (Univ. Cambridge, UK)

Czech national program of targeted research in the European context. **K. Klusáček** (Technol. Center, Czech Acad. Sci., Praha, CZ)

I2 Lectures—Monday afternoon Chemical engineering education

Chairmen: V. Machoň, M. Molzahn

I2.1 14.00 Keynote lecture: Chemical engineering education: outcomes and customers. ***C. D. Grant, B. R. Dickson** (Univ. Strathclyde, Glasgow, UK) [1257]

I2.2 14.40 Chemical engineering education - the Australian and New Zealand way. ***D. G. Wood, D. C. Shallcross** (Univ. Melbourne, AU) [67]

I2.3 15.00 New relationship between chemistry and chemical engineering : current evolvements in Toulouse. ***A.-M. Wilhelm, P. Duverneuil, G. Casamatta** (ENSIACET, Toulouse, FR) [1353]

15.20 Coffee break and poster session

I2.4 16.00 Creation of multimedia education courses in the pharmaceutics area. ***D. V. Shishulin, N. V. Menshutina, G. A. Avramenko, H. Leuenberger[1], L. S. Gordeev** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU; [1]Univ. Basel, CH) [741]

I2.5 16.20 Developing an Internet course: dynamic modelling and simulation of chemical engineering and bioengineering processes. **I. J. Dunn, *J. E. Prenosil** (Swiss Fed. Inst. Technol., Zürich, CH) [1342]

I2.6 16.40 Chemical reaction engineering undergraduate experiments. **F. A. De Silva, *I. Portugal** (Univ. Aveiro, PT) [1202]

I2.7 17.00 "IASU General Test" - Information control system academic process for institutions of higher education. ***G. Statyukha, A. Kvitka, V. Petrovskiy** (Nat. Tech. Univ., Kyiv, UA) [949]

I2.8 17.20 Expanded excel used for balancing of process lines. ***M. Šisler, J. Skřivánek, P. Ditl** (Czech Tech. Univ., Praha, CZ) [1082]

I3 Lectures—Tuesday morning PRES 2002

Chairmen: R. Smith, M. Sorin

I3.1 9.40 Keynote lecture: Development and integration of advanced heat exchangers and process control for high energy efficient distillation columns and separation processes. **T. Thonon** (CEA, Grenoble, FR) [1242]

I3.2 10.20 Scale-up or scale-out?. **D. J. Brennan** (Monash Univ., Clayton Vic., AU) [659]

I3.3 10.40 Possible approach for optimum selection of utility systems. ***P. Martinák, P. Stehlík, L. Bébar** (Tech. Univ., Brno, CZ) [813]

11.00 Coffee break

I3.4 11.30 A methodology for improving heat exchanger network operation. **H. Rodera, D. Westphalen, H. K. Shethna, *M. Brodkorb** (Hyprotech Ltd., Calgary, CA) [383]

I3.5 11.50 Design of optimal flexible heat recovery systems using evolutionary programming. ***F. Pettersson, J. Söderman** (Abo Akademi Univ., FI) [839]

I3.6 12.10 Synthesis method for tankage treatment. ***L. Halasz, A. B. Nagy, F. Friedler** (Univ. Veszprém, HU) [585]

I4 Lectures—Tuesday afternoon PRES 2002

Chairmen: J. Jelínek, B. Kalitventzeff

I4.1 14.00 Keynote lecture: Factors associated with fouling in the process industry. ***D. J. Kukulka, R. E. Baier, J. C. Mollendorf** (State Univ. New York, Buffalo NY, US) [464]

I4.2 14.40 Local linear models for nonlinear model predictive control of a reactive distillation column. ***K. Dadhe, R. Gesthuisen, S. Engell** (Univ. Dortmund, DE) [1074]

I4.3 15.00 Hydrodynamic diagnosis of a shell-and-tube heat exchanger using tracer. ***M. Albaric, C. Jallut[1], P. Bandelier** (CEA, Grenoble, FR; [1]ESCPE, Lyon, FR) [1072]

15.20 Coffee break and poster session

I4.4 16.00 The simulation of multicomponent mixtures condensation in plate condensers. **L. L. Tovazhnyansky, *P. O. Ka-**

pustenko, O. G. Nagorna, O. Y. Perevertaylenko (Nat. Tech. Univ., Kharkiv, UA) [601]

I4.5 16.20 Equilibria in limestone based FGD process - magnesium addition. **J. A. Michalski** (Inst. Phys. Chem., Warszawa, PL) [181]

I4.6 16.40 What and how to execute the overall management in the complex chemical plants. **Young Ho Kim** (Eng. Manuf. Consult., Koyang, KR) [1158]

I4.7 17.00 Optimal design of crude fractionation units and new technologies to improve distillation yield. **Shuncheng Ji, *M. Bagajewicz** (Univ. Oklahoma, Norman OK, US) [540]

I5 Lectures—Wednesday morning PRES 2002

Chairmen: K. Urbaniec, G. Vaccari

I5.1 9.40 Keynote lecture: Financial risk management in planning under uncertainty. **A. F. Barbaro, *M. B. Bagajewicz, A. P. Koppol** (Univ. Oklahoma, Norman OK, US) [1516]

I5.2 10.20 Revamp of rectification section in styrene unit for higher capacity and efficiency. **J. Jelínek** (Koch-Glitsch a. s., Brno, CZ) [158]

I5.3 10.40 Supply chain optimization of refinery. ***Li Wenkai, Chi-Wai Hui, Ben Hua[1]** (Hong Kong Univ. Sci. Technol., CN; [1]South China Univ. Technol., Guangzhou, CN) [199]

11.00 Coffee break

I5.4 11.30 Cost estimation procedures for process integration retrofit studies. **M. Taal, *J. Klemeš, P. Martinak[1], P. Stehlík[1]** (UMIST, Manchester, UK; [1]Tech. Univ., Brno, CZ) [131]

I5.5 11.50 Physico chemical characterization and kinetic modeling of liquid fuels and surrogates. ***E. Ranzi, R. Del Rosso, S. Pierucci, S. Granata** (Politecnico, Milano, IT) [367]

I5.6 12.10 On the integrated management of industrial resources incorporating finances. **T. K. Zhelev** (Univ. Durban-Westville, ZA) [285]

I6 Lectures—Wednesday afternoon PRES 2002

Chairmen: P. O. Kapustenko, H. Singh

I6.1 14.00 Keynote lecture: Rigorous super-structure in action. ***Z. Ercsey, Z. Kovács[1], F. Friedler, L. T. Fan[2]** (Univ. Veszprém, HU; [1]Univ. Szeged, HU; [2]Kansas Univ., Manhattan KS, US) [879]

I6.2 14.40 Environmental analysis of gasoline blending components through their life cycle. ***T. M. Mata, R. L. Smith[1], D. M. Young[1], C. A. V. Costa** (Univ. Porto, PT; [1]US EPA, Cincinnati OH, US) [448]

I6.3 15.00 Information management for engineering sciences. ***M. Weiten, B. Goers, G. Wozny, M. Jekel** (Tech. Univ., Berlin, DE) [486]

15.20 Coffee break and poster session

I6.4 16.00 Algorithmic synthesis of an azeotropic-distillation system: production of pure ethanol revisited. ***S. Novaki, B. Bertok, F. Friedler, L. T. Fan[1], G. Feng[1]** (Univ. Veszprém, HU; [1]Kansas State Univ., Manhattan KS, US) [394]

I6.5 16.20 Incorporating heat integration in batch process scheduling. ***R. Adonyi, J. Romero[1], L. Puigjaner[1], F. Friedler** (Univ. Veszprém, HU; [1]Univ. Polytech. Catalunya, Barcelona, ES) [475]

I6.6 16.40 Influence of variations in cost factors in structural optimisation of heat recovery systems with moist air streams. ***J. Söderman, F. Pettersson** (Abo Akademi Univ., FI) [485]

I6.7 17.00 Universal plant model for production planning. **K.-Y. Cheung, *Li Wenkai, C.-W. Hui, H. Sakamoto[1], K. Hirata[1], L. O'Young[2]** (Hong Kong Univ. Sci. Technol., CN; [1]Mitsubishi Chem. Corp., Yokkaichi Mie, JP; [2]MC Res. Innov. Cent., Mt. View CA, US) [380]

I7 Lectures—Thursday morning Compact heat exchangers course

9:00 Welcome and Course introduction

9:30 Overview of heat exchanger types

10:15 Process integration and heat exchanger networks

11:15 Exchangers with cross-corrugated passages and design details

13:30 Design exploration with plate heat exchangers

13:45 Plate-fin heat exchangers

14:30 Design exploration with plate-fin heat exchangers

15:00 Recent advances in shell and tube heat exchanger technology

15:45 Recent advances in CHE technology

16:15 Final discussion

Course Leader: **V. Wadekar**, Hyprotech UK Ltd, UK Speakers: **P. Stehlík**, Tech. Univ., Brno, CZ; **R. Smith**, UMIST, Manchester, UK; **J. Klemeš**, UMIST, UK.

J

J1 Lectures—Monday morning Symposium on process safety

Risk assessment

Chairmen: H. J. Pasman, J. Škarka

J1.1 9.40 Keynote lecture: Developments in loss prevention / process safety / risk assessment methodology: layer of protection analysis. **H. J. Pasman** (TNO, Delft, NL) [629]

J1.2 10.20 A methodology and a software (DominoXL) for studying domino effects. **C. Fiévez, C. Delvosalle, *S. Brohez** (Fac. Polytech. Mons, BE) [382]

J1.3 10.40 Experimental research of the dispersion-behavior of heavy gases with regard to the influence of the roughness and the slope of the ground with small scale-experiments in a wind tunnel. **S. Hartwig, J.-H. Kim, *A. Rupp** (Univ. Wuppertal, DE) [637]

11.00 Coffee break

J1.4 11.30 Note on emergency relief vent size. ***A. Sogaro, S. Colombo, G. Biardi** (Politechnica, Milano, IT) [770]

J1.5 11.50 Estimation of minimum amount of gas leaking for explosion at enclosure. ***K. S. Park, Y. D. Jo** (Inst. Gas Safety Technol., Kyeonggi-do, KR) [634]

J1.6 12.10 Virtual reality support for industrial safety and loss prevention. ***I. E. Lukashevich, I. A. Kirillov, E. A. Rossinsky**[1] (Kurchatov Inst., Moskva, RU; [1]Bauman State Tech. Univ., Moskva, RU) [796]

J1.7 12.30 A strategy for early detection of hazardous states in batch reactors. ***J.-S. Chang, K.-Y. Chen** (Tatung Univ., Taipei, TW) [1327]

J2 Lectures—Monday afternoon Symposium on process safety

Safety management

Chairmen: A. Rupp, V. Václavek

J2.1 14.00 Keynote lecture: The European Process Safety Centre (EPSC): A decade of learning. **J. Calzia, R. Turney, *L. Allford** (EPSC, Rugby, UK) [592]

J2.2 14.40 The safety modelling language. ***B. A. Schupp, S. M. Lemkowitz, L. Goossens, A. R. Hale, H. J. Pasman**[1] (Delft Univ. Technol., NL; [1]TNO Defence Cent., Delft, NL) [600]

J2.4 15.00 Strain caused by substances at activities with high-exposition rate. **S. Hartwig, J.-H. Kim, *A. Rupp** (Univ. Wuppertal, DE) [665]

15.20 Coffee break and poster session

J2.5 16.00 Dependability in chemical industry. **P. Fuchs** (Tech. Univ., Liberec, CZ) [680]

J2.6 16.20 Chemical reaction modeling problems in industrial and environmental safety. ***I. A. Kirillov, B. V. Potapkin, M. A. Deminsky, E. V. Shoulakova, S. V. Petrusev, M. I. Strelkova, I. E. Cheshigin, G. I. Belov**[1] (Kurchatov Inst., Moskva, RU; [1]Res. Inst. High Temp., Moskva, RU) [721]

J2.7 16.40 Computer-aided life cycle safety engineering: concept and software requirements. **I. A. Kirillov, A. V. Panasenko**[1], **I. E. Lukashevich, *A. I. Lobanov**[2] (Kurchatov Inst., Moskva, RU; [1]Cent. Res. Inst. Mach. Build., Korolev, RU; [2]Inst. Physics Technol., Dolgoprudny, RU) [722]

J2.8 17.00 Why are we publishing less accident report in Iran? Once bitten twice shy. **D. Rashtchian** (Sharif Univ. Technol., Tehran, IR) [1143]

J3 Lectures—Tuesday morning Symposium on process safety

Human factor. SEVESO-II

Chairmen: F. Babinec, R. Turney

J3.1 9.40 Keynote lecture: Human factors in the process industries: The PRISM project. **R. D. Turney** (European Proc. Safety Cent., Rugby, UK) [355]

J3.2 10.20 SEQHAZ - a revolutionary hazard study tool. **R. Salo** (Neste Engineering Oy, Porvoo, FI) [1054]

J3.3 10.40 Implementation of SEVESO II: an efficient methodological approach. ***P. Lerena, G. Suter** (Swiss Safety Inst., Basel, CH) [959]

11.00 Coffee break

J3.4 11.30 Learning from SEVESO II Safety Reports. **F. Babinec** (Tech. Univ., Brno, CZ) [1177]

J3.5 11.50 Actual requirements for safety documentation according Czech version of SEVESO II Directive. **A. Bernatik** (Regional EIACent., Ostrava, CZ) [892]

J3.6 12.10 Qualitative safety analysis and common sense reasoning applied to polymerisation reactors. **R. Koivisto, M. Bongards**[1], ***F. Babinec**[2], **M. Dohnal**[2] (VTT Manuf. Technol., Tampere, FI; [1]Fachhochschule, Gummersbach, DE; [2]Tech. Univ. Brno, CZ) [1443]

J3.7 12.30 Experience with quantitative risk assessment (QRA) in sense of legislation Seveso II. ***V. Václavek, M. Podracká, A. Novotná** (Inst. Chem. Technol., Praha, CZ) [1040]

J4 Lectures — Tuesday afternoon Symposium on environmental engineering and management

Wastewater

Chairmen: J. Horák, J. Venselaar

J4.1 14.00 Treatment of sewage sludge: the economy of using advanced sludge treatment methods for sewage sludge. ***E. Neyens, J. Baeyens, M. Weemaes[1], B. De heyder[1]** (Cathol. Univ. Leuven, Heverlee, BE; [1]Aquafin, Aartselaar, BE) [242]

J4.2 14.20 Alkaline thermolysis improves the dewaterability of activate sewage sludge. ***E. Neyens, J. Baeyens, M. Weemaes[1], B. De heyder[1]** (Cathol. Univ. Leuven, Heverlee, BE; [1]Aquafin, Aartselaar, BE) [206]

J4.3 14.40 The use of wet oxidation and PACT(R) for the treatment of propylene oxide/styrene monomer (PO/SM) industrial wastewaters at the Repsol PO/SM Plant in Tarragona, Spain. **J. Pedrerol, S. Ruiz, *C. Maugans[1]** (Repsol Quimica, Tarragona, ES; [1]USFilter, Rothschild WI, US) [174]

J4.4 15.00 UV/H2O2 chemical oxidation for high loaded effluents: Application to surfactants in water. Kinetics of decomposition and biodegradability. ***J. Sanz, J. L. Lombraña, A. M. De Luis, R. Rodriguez** (Univ. País Vasco, Bilbao, ES) [250]

15.20 Coffee break and poster session

J4.7 16.00 Rising Behavior of Ozone-containing Bubbles in a Bubble Column. ***Hua Wei Chen, Young Ku** (Nat. Taiwan Univ. Sci. Technol., Taipei, TW) [1124]

J4.8 16.20 Removal of heavy metals from industrial wastewaters: A review. **M. A. Zarraa** (Alexandria Univ., EG) [114]

J4.9 16.40 Potential of freezing in wastewater treatment: application on nitrates and phosphates removal. ***A. Rodriguez, Y. Aurelle** (INSA, Toulouse, FR) [1364]

J4.1017.00 An intelligent multi-objective approach to solve rural wastewater management problems. **M. A. E. El Tokhy, H. A. Talaat, *S. R. Tewfik, M. H. Rasmy[1]** (Nat. Res. Cent., Cairo, EG; [1]Cairo Univ., EG) [1523]

J5 Lectures — Wednesday morning Symposium on environmental engineering and management

Wastewater

Chairmen: E. Dinjus, M. Punčochář

J5.1 9.40 Keynote lecture: Environmental friendly processes to use biomass as a feedstock for chemistry and energy. **E. Dinjus** (Forschungszentrum Karlsruhe, DE) [1287]

J5.2 10.20 Strategies for small-site characterization and assessment of gasoline release. ***R. E. Woodward, R. L. Sloan[1]** (Sierra Env. Serv. Inc., Houston TX, US; [1]Lyondell Chem. Co., Channelview TX, US) [666]

J5.3 10.40 Selective flotation of plastics mixtures with polystyrene. ***P. Basařová, L. Bartovská, K. Kořínek** (Inst. Chem. Technol., Praha, CZ) [661]

11.00 Coffee break

J5.4 11.30 Study and modelling of electric arc furnace slag alteration. ***E. Le Yaouanq, E. Garcia-Diaz, P. Degrugilliers, J. M. Siwak[1]** (Ec. Mines Douai, FR; [1]Cons. Gen. Mines, Paris, FR) [579]

J5.5 11.50 Comparing the effect of various coagulants on performance of secondary clarifier in sulfite mill pulp and paper plant. ***M. C. Amiri, S. Ghodbanan, N. Hatami** (Isfahan Univ. Technol., IR) [1385]

J5.6 12.10 The combination of membrane separation technology for treating hazardous waste landfill leachates. ***T. Setiadi, S. Fairus** (Inst. Technol. Bandung, ID) [335]

J6 Lectures — Wednesday afternoon Symposium on environmental engineering and management

Air pollution

Chairmen: T. Saito, V. Václavek

J6.1 14.00 Abatement of VOCes by combustion technology with the scope of energy process integration. ***V. Václavek, A. Novotná, J. Dedková** (Inst. Chem. Technol., Praha, CZ) [1037]

J6.2 14.20 Treatment of gaseous aromatic pollutant by optical-fiber photocatalytic reactor: radiation distribution and quantum efficiency influenced by photocatalyst coating. ***Wen Wang, Young Ku** (Nat. Taiwan Univ. Sci. Technol., Taipei, TW) [1115]

J6.3 14.40 Reduction of carbon dioxide in gas steams by UV/TiO2 process. ***Wan-Hui Lee, Young Ku** (Nat. Taiwan Univ. Sci. Technol., Taipei, TW) [1134]

J6.4 15.00 Deep sea sequestration of CO2 gas with highly environmental acceptability via a gas lift pump system. ***T. Saito, S. Kosugi[1], T. Kajishima[2], K. Tsuchiya[3]** (Shizuoka Univ., JP; [1]Sumimoto Met. Ind.,Tokyo, JP; [2]Osaka Univ., JP; [3]Univ. Tokushima, JP) [429]

15.20 Coffee break and poster session

J6.6 16.00 Heat recovery from dilute methane emissions by using a catalytic flow reversal reactor technology. **H. Sapoundjiev** (Nat. Resources Canada, Varennes, CA) [476]

J6.7 16.20 Characteristic of char obtained in pyrolysis process of municipal sewage sludge. **J. B. Bien, M. Sanitsky, *J. D. Bien, W. Bialczak** (Tech. Univ. Czestochowa, PL) [828]

J6.8 16.40 Halide compounds removal from hot coal derived gas with sodium based sorbents. ***M. Nunokawa, M. Kobayashi, H. Shirai** (Cent. Res. Inst. Elect. Power Ind., Yokosuka, JP) [1301]

J7 Lectures—Thursday morning Symposium on environmental engineering and management

Waste release reduction

Chairmen: J. P. Candy, E. Neyens

J7.1 9.40 The effect of double diffusion on the dispersion of pollutants discharged into the ocean. **S. S. S. Cardoso, *M. M. Chow, J. M. Holford** (Univ. Cambridge, UK) [974]

J7.2 10.00 Use of PACT to improve organic compounds biodegradability in textile wastewaters. **M. Ghaheri** (IROST, Tehran, IR) [44]

J7.3 10.20 Decomposition of 2-Chlorophenol in Aqueous Solution by Sonolysis Process. **Young Ku, Tai-Chi Huang, *Chih-Ming Ma** (Nat. Taiwan Univ. Sci. Technol., Taipei, TW) [1125]

J7.4 10.40 Surface organo-metallic chemistry on metals; removing of heavy metals from water solution, by strong chemisorption on catalyst surface. **G. Godard, J. M. Basset, *J. P. Candy** (CNRS, Villeurbanne, FR) [239]

11.00 Coffee break

J7.5 11.30 Studies on treatment of carbonaceous wastewater by fixed film aeration tank. **S. Yaghmaei** (Sharif Univ. Technol., Tehran, IR) [1118]

J7.7 11.50 Phosphate removal using acid treated spent bleaching earth. **M. Mahramanlioglu** (Instanbul Univ., Avcilar, TR) [928]

J8 Lectures—Thursday afternoon Symposium on environmental engineering and management

Organic pollutants

Chairmen: M. Králik, R. E. Woodward

J8.1 14.00 Common myths, misconceptions and assumptions about MTBE: where are we now?. ***R. E. Woodward, R. L. Sloan**[1] (Sierra Env. Serv., Houston TX, US; [1]Lyondell Chem. Co., Channelview TX, US) [625]

J8.2 14.20 Use of enriched mixed cultures for high rate polyhydroxyalkanoate production from solid waste fermentation products. **M. Beccari, *D. Dionisi, M. Majone, V. Papa** (Univ. Rome La Sapienza, IT) [609]

J8.3 14.40 Analysis of the efficiency of three advanced oxidation processes on the generation of hydroxyl radicals in the treatment of phenol. ***J. Sanz, J. L. Lombraña, A. M. De Luis, M. Ortueta, F. Varona** (Univ. País Vasco, Bilbao, ES) [207]

J8.4 15.00 A comparison of ecological impacts of methyl tert.butyl ether and ethyl tert.butyl ether used as components of reformulated gasolines. **M. Králik** (Slovak Univ. Technol., Bratislava, SK) [727]

15.20 Coffee break and poster session

J8.5 16.00 Recent developments in bioremediation of fuel oxygenates. **E. E. Moyer** (Tighe Bond, Inc., Westfield MA, US) [779]

J8.6 16.20 Complete perchloroethylene (PCE) dechlorination to ethylene in anaerobic fixed-bed reactor. ***F. Aulenta, F. Giarolli, M. Majone, M. Petrangeli Papini, V. Tandoi** (Univ. Rome La Sapienza, IT) [626]

K

K1 Lectures—Monday morning Chemical technology for sustainable future

Bioprocesses

Chairmen: J. Páca, H. P. Schmauder

K1.1 9.40 Keynote lecture: Towards to a cleaner environment - situation, (chemical, biotechnological, general) technologies and trends. ***H.-P. Schmauder, J. Páca**[1] (Res. Cent. Med. Tech. Biotechnol., Bad Langensalza, DE; [1]Inst. Chem. Technol., Praha, CZ) [604]

K1.2 10.20 Biodegradation processes for the cleaner environment. **K. Miksch** (Silesian Univ. Technol., Gliwice, PL) [1183]

K1.3 10.40 Chemical and biological reactions of TNT and RDX. ***R. Bajpai, M. Qasim**[1]**, L. Hansen**[1]**, M. Popovic**[2]**, J. Páca**[3] (Univ. Missouri, Columbia MO, US; [1]US Army ERDC, Vicksburg MS, US; [2]Tech. Fachhochschule, Berlin, DE; [3]Inst. Chem. Technol., Praha, CZ) [736]

11.00 Coffee break

K1.4 11.30 Aerobic biodegradation of 4-nitrotoluene in aqueous solution by a mixed culture. ***J. Páca, J. Bárta, R. Bajpai**[1]**, H.-P. Schmauder**[2] (Inst. Chem. Technol., Praha, CZ; [1]Univ. Missouri, Columbia MO, US; [2]Res. Cent. Med. Tech. Biotech., Bad Langensalza, DE) [10]

K1.5 11.50 An engineering analysis of alkali hydrolysis of 2,4,6-trinitrotoluene. ***R. Bajpai, D. Parekh, S. Herrmann**[1]**, M. Popovic**[1]**, J. Páca**[2] (Univ. Missouri, Columbia MO, US; [1]Tech. Fachhochschule, Berlin, DE; [2]Inst. Chem. Technol., Praha, CZ) [730]

K1.7 12.10 Timber industry waste processing by means of bioconversion. **E. Prutenskaya, *E. Sulman, A. Poyarkova** (Tver Tech. Univ., RU) [299]

K2 Lectures — Monday afternoon
Chemical technology for sustainable future

Bioprocesses

Chairmen: R. Bajpai, J. Páca

K2.1 14.00 Keynote lecture: Waste gas cleaning by biofiltration techniques. ***K.-H. Robra, R. Vogrin, M. Wellacher, B. Altenburger** (Graz Univ. Technol., AT) [202]

K2.2 14.40 New trends in biological waste gas treatment. **C. Kennes** (Univ. La Coruna, ES) [871]

K2.3 15.00 Influence of ammonium delivery on toluene degradation in a fungal biofilter. ***J. R. Woertz, K. A. Kinney** (Univ. Texas, Austin TX, US) [754]

15.20 Coffee break and poster session

K2.4 16.00 Styrene removal from waste gas in biofilter. ***J. Páca, M. Halecký, E. Klapková, A. M. Gerrard[1], C. S. Soccol[2], B. Koutský** (Inst. Chem. Technol., Praha, CZ; [1]Univ. Teeside, Middlesbrough, UK; [2]Univ. Fed. Paraná, Curitiba, BR) [41]

K2.5 16.20 Steady state and transient models for the biofiltration of styrene/air mixtures. ***A. M. Gerrard, D. Hájková[1], M. Halecky, J. Páca[1]** (Univ. Teeside, Middlesbrough, UK; [1]Inst. Chem. Technol., Praha, CZ) [52]

K2.6 16.40 A new technology for an optimised supply of emerged microbial cultures. ***M. Hornung, M. Ludwig, H.-P. Schmauder** (Res. Cent. Med. Tech. Biotech., Bad Langensalza, DE) [385]

K3 Lectures — Tuesday morning
Chemical technology for sustainable future

Bioprocesses

Chairmen: A. M. Gerrard, C. Kennes

K3.1 9.40 Keynote lecture: Integrated development of biomass plantations for energy, and commodity and fine chemicals. **A. Mimura** (Yamanashi Univ., JP) [1045]

K3.2 10.20 Degradation of lignite by molds: Contribution of oxidative and hydrolytic enzymes. ***U. Hölker, M. Janssen[1], J. Lenz[1], M. Höfer** (Univ. Bonn, DE; [1]Höfer Bioreact GmbH, Bonn, DE) [836]

K3.3 10.40 Enzymes of yeast Candida tropicalis responsible for biodegradation of phenol. ***M. Stiborová, J. Páca[1]** (Charles Univ., Praha, CZ; [1]Inst. Chem. Technol., Praha, CZ) [140]

11.00 Coffee break

K3.4 11.30 Extraction and degradation of waste water phenols. ***E. Sulman, N. Komarova** (Tver Tech. Univ., RU) [276]

K3.5 11.50 First modelling experiments for optimizing bacterial cellulose formation with new technologies. **M. A. Gerrard, *M. Hornung[1], M. Ludwig[1], H.-P. Schmauder[1]** (Univ. Teeside, Middlesbrough, UK; [1]Res. Cent. Med. Tech. Biotech., Bad Langensalza, DE) [468]

K3.6 12.10 Microbial sensing and control: from bioremediation to health hazard prevention. ***P. Adriaens, S. J. Skerlos** (Univ. Michigan, Ann Arbor MI, US) [1200]

K4 Lectures — Tuesday afternoon
Chemical technology for sustainable future

Petrochemistry

Chairmen: M. Stepanski, J. Škarka

K4.1 14.00 Keynote lecture: Position of Central European refining and petrochemical sites within Europe. ***M. Kuncíř, J. Škarka[1]** (Unipetrol a. s., Praha, CZ; [1]ČSCHI, Praha, CZ) [1151]

K4.2 14.40 Improved DMT process uses melt crystallization technology. **E. Schaefer, *M. Stepanski, K. Fiedler[1], A. Schoengen[1]** (Sulzer Chemtech. Ltd., Buchs, CH; [1]HG Hegmanns Ingenieur GmbH, Gelsenkirchen, DE) [912]

K4.3 15.00 A quick survey on the adverse consequences of refining visbreaker naphtha in middle distillate hydrocrackers. ***H. Bridjanian, M. Ghaedian, D. Forootan** (Res. Inst. Pet. Ind., Tehran, IR) [261]

K5 Lectures — Wednesday morning
Chemical technology for sustainable future

Petrochemistry, polymers

Chairmen: J. Horák, N. Tanaka

K5.1 9.40 Keynote lecture: Sustainable development for the petrochemical industries - responsible technological programme or a popular slogan?. **J. Horák** (Inst. Chem. Technol., Praha, CZ) [1156]

K5.2 10.20 Porosity control in production of porous nylon-6 materials. **N. Tanaka** (Gunma Univ., Kiryu, JP) [328]

K5.3 10.40 Acceleration of the drying time by insertion of a mechanical dewatering step in the advanced Vienna Process for mass deacidification of old newspapers and books. ***R. Edl, H. Hess, W. Ruhm[1], W. Höflinger** (Tech. Univ., Wien, AT; [1]Österreich. Nationalbibliothek, Wien, AT) [390]

11.00 Coffee break

K5.4 11.30 Decolorization of chromophoric lignin via reduction reaction in stirred tank reactor. ***S. M. Ghoreishi, M. Haghighi** (Isfahan Univ. Technol., IR) [179]

K6 Lectures—Wednesday afternoon
Chemical technology for sustainable future

Organic technology

Chairmen: J. Landgrave, V. Tukač

K6.1 14.00 Keynote lecture: Methodology for performance indicators calculation to evaluate plants of chemical and process industry, in accordance with sustainability outlines and emphasis on institutional, social and exploitation of natural resources. ***J. Landgrave, E. Martinez** (Univ. Nac. Autonom. Mexico, UNAM, MX) [504]

K6.2 14.40 Sustainable technology process for power generation from coal by supercritical water oxidation. ***M. J. Cocero, M. D. Bermejo, F. Fdez-Polanco** (Univ. Valladolid, ES) [333]

K6.3 15.00 Catalytic removal of dissolved oxygen from water and steam cycle of power plants. **A. Moheb** (Isfahan Univ. Technol., IR) [409]

15.20 Coffee break and poster session

K6.4 16.00 Carbon materials as selective adsorbents for evaluation of microamounts of platinum metals from technological solutions. ***L. P. Tikhonova, I. A. Tarkovskaya, S. V. Rosokha, S. B. Lyubchik[1], V. A. Kadochnikov[2], F. Beguin[3]** (Inst. Appl. Probl. Phys. Biophys., Kyiv, UA; [1]Inst. Phys. Org. Coal Chem., Kyiv, UA; [2]Pridneprovskyi Plant, Dneprodzerzhinsk, UA; [3]CNRS, Orleans, FR) [105]

K7 Lectures—Thursday morning
Chemical technology for sustainable future

Inorganic technology

Chairmen: O. Paladino, S. Vacková

K7.1 9.40 Physical properties of modified CdTe surface layers. **J. González-Hernández, V. P. Makhnii[1], P. N. Gorley[1], Yu. V. Vorobiev, V. E. Baranyuk[1], *S. Vacková[2], T. Horaždovský[2], P. P. Horley, N. V. Demych[1], M. M. Sletov[1]** (CINVESTAV-IPN, Mexico City, MX; [1]Chernivtsy Nat. Univ., UA; [2]Czech Tech. Univ., Praha, CZ) [929]

K7.2 10.00 X-ray and optical properties of bulk crystals and thin films of CuInxGa(1-x)Se2. **J. Gonzáles-Henández, P. N. Gorley[1], Yu. V. Vorobiev, V. V. Khomyak[1], *S. Vacková[2], T. Horaždovský[2], P. P. Horley, Z. D. Kovalyuk[3], O. N. Sydor[3]** (CINVESTAV-IPN, Mexico City, MX; [1]Chernivtsy Nat. Univ., UA; [2]Czech Tech. Univ., Praha, CZ; [3]Mat. Sci. Probl. Inst., Chenivtsy, UA) [946]

K7.3 10.20 Role of particle size and porosity of Ni/Al and Ni/Mg/fe oxide powders in the prediction of the properties of cathodes and anodes for MCFC applications. ***O. Paladino, M. De Francesco, C. Resini, P. Capobianco[1]** (CIMA, Savona, IT; [1]Ansaldo Ric., Genova, IT) [784]

K7.4 10.40 Atomic engineering: fine dispersed systems. ***A. M. Spasic, M. D. Babic, M. M. Marinko, N. N. Djokovic, D. N. Krstic[1], M. Mitrovic[1]** (Inst. Technol. Nucl. Min. Raw Mat., Beograd, YU; [1]Fac. Technol. Metal., Beograd, YU) [72]

11.00 Coffee break

K7.5 11.30 Purification of celestite with acid washing and conversion of strontium sulfate to strontium carbonate. ***H. Dogan, S. Kocakusak, M. Koral, J. Koroglu, K. Akcay, H. Yuzer** (TUBITAK, Gebze-Kocaeli, TR) [59]

K7.6 11.50 Comparative study of solar air humidification - dehumidification unit. ***I. M. Ismail, A. M. Hany** (Assiut Univ., EG) [14]

L

L1 Lectures—Monday morning
Food processing and technology

Chairmen: B. McKenna, K. Urbaniec

L1.1 9.40 Keynote lecture: The evolution of evaporator stations in the beet-sugar industry. **K. Urbaniec** (Warsaw Univ. Technol., Plock, PL) [883]

L1.2 10.20 Keynote lecture: Experimental investigation of performance of vacuum cooling for commercial large cooked meat joints. ***Da-Wen Sun, Lijun Wang** (Univ. Coll. Dublin, IE) [1128]

11.00 Coffee break

L1.3 11.30 Plate evaporators in food industry - theory and practice. **P. Hoffman** (Czech Tech. Univ., Praha, CZ) [194]

L1.4 11.50 New trends in industrial crystallization of sugar. ***Z. Bubník, P. Kadlec, V. Pour, H. Šťarhová, A. Hinková** (Inst. Chem. Technol., Praha, CZ) [227]

L1.5 12.10 Water-in-oil microemulsions at freezing temperatures. Application to accelerated microwave thawing of frozen foods. **M. Merabet** (Nestlé Res. Cent., Lausanne, CH) [1031]

L2 Lectures—Monday afternoon
Food processing and technology

Chairmen: P. Lewicki, P. Nesvadba

L2.1 14.00 Keynote lecture: Water as the determinant of food engineering properties. **P. P. Lewicki** (Warsaw Agric. Univ., PL) [303]

L2.2 14.40 Keynote lecture: Database of physical properties of agro-food materials. ***P. Nesvadba, M. Houška[1], W. Wolf[2], V. Gekas[3], D. Jarvis[4], P. A. Sadd[5]** (Robert Gordon Univ., Aberdeen, UK; [1]Inst. Food Res., Praha, CZ; [2]Fed. Res. Cent. Nutr., Karlsruhe, DE; [3]Tech. Univ. Crete, Chania, GR; [4]Unilever Res. Lab., Bedford, UK; [5]Rank Hovis McDougall Ltd., High Wycombe, UK) [980]

15.20 Coffee break and poster session

L2.3 16.00 Water transport properties of edible films intended for food packaging applications. ***G. G. Buonocore, M. A. Del Nobile[1], M. C. Di Martino, A. Aldi[2], L. Nicolais** (Univ. Naples, Napoli, IT; [1]Univ. Foggia, IT; [2]CNR, Napoli, IT) [613]

L2.4 16.20 Exploitation of process modelling by ARIS system in czech dairy company - MADETA a.s. ***P. Burian, T. Formánek, P. Přílepek[1], P. Krejčí[1]** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]Jihočeské mlékárny, České Budějovice, CZ) [320]

L2.5 16.40 Nonlinear mathematical model and advanced control of a distilation process with reduced energy consumption. ***A. Sipos, V. Jascanu** (Univ. Sibiu, RO) [113]

L2.6 17.00 Studies on the acid activation of Bentonite Clays. **H. Jazayeri, *M. Rezaei** (Iran Univ. Sci. Technol., Tehran, IR) [1441]

L3 Lectures—Tuesday morning
Food processing and technology

Chairmen: M. Saska, D. W. Sun

L3.1 9.40 Changes of chemical composition during expansion cooking of rapeseedfaba bean mixtures. ***L. Moscicki, H. Kozlowska[1], J. Pokorný[2], Z. Réblová[2], D. J. Van Zuilichem[3]** (Lublin Agric. Univ., PL; [1]Polish Acad. Sci., Olsztyn, PL; [2]Inst. Chem. Technol., Praha, CZ; [3]Wageningen Agric. Univ., NL) [827]

L3.2 10.00 Effect of soybean flour on the flavour of extruded wheat flour. ***J. Pokorný, A. Farouk[1], F. Pudil, V. Janda** (Inst. Chem. Technol., Praha, CZ; [1]Nat. Res. Cent., Cairo, EG) [990]

L3.3 10.20 Influence of functional components addition on quality of precooked pasta. ***A. Wójtowicz, L. Moscicki** (Lublin Agric. Univ., PL) [484]

L3.4 10.40 Modeling the lactic acid bacteria growth-cycle for a batch cultivation. ***C. Altieri, M. A. Del Nobile, M. G. Sinigaglia, E. La Notte** (Univ. Foggia, IT) [514]

11.00 Coffee break

L3.5 11.30 Modeling the starch retrogradation kinetic of durum wheat bread. ***M. A. Del Nobile, T. Martoriello, G. G. Buonocore, G. Moccia** (Univ. Foggia, IT) [515]

L6 Lectures—Wednesday afternoon
Symposium on environmental engineering and management

MTBE remediation seminar

13:30 Introduction

13:45 Properties of MTBE and other gasoline components

14:15 Site assessment

14:30 Applicable physical, chemical, and biological remedial technologies

15:30 Break

15:45 MTBE remediation case studies

17:15 Conclusions and recommendations

Speakers: **R. Sloan**, Lyondell Chem. Co., Channelview TX; **E. Moyer**, Tighe and Bond, Inc., Westfield, MA; **R. Woodward**, Sierra Environmental Services, Houston, TX

POSTERS

P1 Posters—Monday
Reaction engineering

P1.1 Numerical modelling and experimental study of process of hydrogen production from organic fuel. ***V. Fateev, R. Blach[1], A. Vishnjakov, V. Chaschin, T. Fateeva[2], F. Pekhota** (Kurchatov Inst., Moskva, RU; [1]David Systems Technology, Madrid, ES; [2]Lomonosov State Univ., Moskva, RU) [872]

P1.2 Model fundamentals for the design of three-phase loop reactors. ***S. John, S. Scheid, H. Parchmann, O. Bork, M. Schlüter, N. Räbiger** (Univ. Bremen, DE) [1266]

P1.3 Hydrodynamic characterizaton of a loop reactor and its modelling. ***S. Moussous, A. Bensmaili[1]** (EMP, Bordj El-Bahri, DZ; [1]USTHB, Algiers, DZ) [908]

P1.4 Immobilized systems for hydrolysis. **K. Hausmann, *H.-J. Jördening** (Tech. Univ. Braunschweig, DE) [1236]

P1.5 The study of UV radiation effect on CIELAB coordinates of organic coatings on steel. ***A. Zarubica, M. Purenovic, M. Miljkovic, L. Despotovic-Kostic[1]** (Univ. Nis, YU; [1]Pomoravlje, Nis, YU) [677]

P1.6 The study of steel protection effect by application of molten active microalloyed aluminum and by covering that composition by organic coating. ***A. Zarubica, M. Purenovic, M. Miljkovic** (Univ. Nis, YU) [676]

P1.7 Radiation effects in high density polyethylene (HDPE), polyamide 6 (PA6) and polyethylene/polyamide 6 (80/20) blends: ESR investigations. ***C. Albano, P. Silva, R. Perera[1]** (Inst. Venez. Invest. Cienc., Caracas, VE; [1]Univ. Símón Bolívar, Caracas, VE) [932]

P1.8 Change in surface area and dissolution during the acid digestion of phosphate particle at 25 oC. ***M. Arbi, M. El Maaoui** (Lab. Chim. Min. Ind. FST, TN) [735]

P1.9 Chemical catalytic reaction and biological oxidation for treatment of non-biodegradable textile effluent. ***S. M. Ghoreishi, M. Haghighi** (Isfahan Univ. Technol., IR) [178]

P1.10 2,4,6-Triphenylpyrylium cation as heterogeneous solar photocatalyst: adsorption onto different supporting materials and applications. **A. M. Amat, *A. Arques, A. Manresa, M. A. Miranda, L. Santos-Juanes, R. F. Vercher** (Tech. Univ. Valencia, ES) [340]

P1.11 Non-ideal behaviour of the desulphurisation reaction with Ca(OH)2 sorbents improved by hydration. **T. L. Hechavarría, *A. Garea[1], J. A. Irabien[1]** (Univ. Oriente, Santiago de Cuba, CU; [1]Univ. Cantabria, Santander, ES) [769]

P1.12 Dry reforming of methane in tubular membrane reactors. ***L. Paturzo, A. Basile, G. Calabro, G. Vitulli[1]** (Univ. Calabria, Rende, IT; [1]Univ. Pisa, IT) [687]

P1.13 Simplified prediction of the bagfilter desulphurisation from laboratory fixed bed data. ***A. Garea, J. A. Marqués, A. Irabien, H.-K. Reissner[1], G. Krammer[2], A. Friedl[3]** (Univ. Cantabria, Santander, ES; [1]AE Energietechnik, Graz, AT; [2]Tech. Univ. Graz, AT; [3]Tech. Univ. Wien, AT) [785]

P1.14 Synthesis gas from natural gas by noncatalytic partial oxidation. ***M. H. Eikani, S. Rowshanzamir[1]** (IROST, Tehran, IR; [1]Iran Univ. Sci. Technol., Tehran, IR) [584]

P1.15 Modelling of coupled enzyme membrane oscillators - effects of an electric field. ***M. Kohout, I. Schreiber, P. Hasal, M. Marek** (Inst. Chem. Technol., Praha, CZ) [1182]

P1.16 Design of a pilot plant scale coal gasifier. ***M. R. Ehsani, A. Alemrajabi, R. Fatemi** (Isfahan Sci. Technol. Town, IR) [134]

P1.17 Catalytic oxidation of chlorinated hydrocarbons. Technology of treatment of wastes. **L. N. Zanaveskin, *O. A. Konorev** (Sci. Res. Inst. Syntez, Moskva, RU) [1009]

P1.18 Product distribution in the catalytic transformation of oxygenates on a HZSM-5 zeolite. ***A. Atutxa, A. G. Gayubo, A. T. Aguayo, R. Vivanco, J. Bilbao** (Univ. País Vasco, Bilbao, ES) [877]

P1.19 Effect of hydrotreatment of FCC feedstocks. **L. J. Cano, *C. R. López, G. H. Moreno** (Mex. Pet. Inst., Mexico, MX) [444]

P1.20 Effect of FCC feedstock quality on product distribution. ***M. E. Mariaca-Dominguez, S. Rodriguez-Salomon, R. Maya-Yescas, G. E. Martinez-Tapia, A. Gonzalez-Ortiz** (Inst. Mex. Petrol., Mexico City, MX) [744]

P1.21 Coke aging and its incidence on catalyst regeneration. ***A. T. Aguayo, A. G. Gayubo, A. Atutxa, R. Vivanco, J. M. Arandes** (Univ. País Vasco, Bilbao, ES) [737]

P1.22 Aggregation and sintering of supported metal catalyst particles. **L. Gmachowski** (Inst. Phys. Chem., Warszawa, PL) [264]

P1.23 Role of water in the reaction medium on the acidity deterioration of the HZSM-5 zeolite. ***R. Vivanco, A. G. Gayubo, A. T. Aguayo, A. Atutxa, J. Bilbao** (Univ. País Vasco, Bilbao, ES) [880]

P1.24 Ag/SiO2 and Cu/SiO2 cogelled xerogel catalysts for benzene combustion and 2-butanol deshydrogenation. ***S. Lambert, N. Tcherkassova, C. Cellier[1], F. Ferauche, B. Heinrichs, P. Grange[1], J.-P. Pirard** (Univ. Liege, BE; [1]Cathol Univ., Louvain-La-Neuve, BE) [91]

P1.25 Kinetics and modeling of asymmetric hydrogenation over modified heterogeneous catalysts: Coverage dependent adsorption modes of substrate and catalyst modifier. ***E. Toukonitty, B. Ševčíková, P. Mäki-Arvela, J. Wärna, T. Salmi, D. Yu. Murzin** (Abo Akademi Univ., FI) [758]

P1.26 Mathematical modeling of a Pd-membrane methanol reactor. ***M. R. Rahimpour, S. Gader** (Shiraz Univ., IR) [498]

P1.27 Chemical reaction in porous media: simulation on a pore network. **P. E. Laranjeira, A. A. Martins, J. C. B. Lopes, *M. M. Dias** (Univ. Porto, PT) [958]

P1.28 Continuous monitoring of chemical reactors by flow injection analysis. Dispersion model and transfer function. **A. Abad, S. C. Cardona, J. I. Torregrosa, *J. Navarro-Laboulais** (Tech. Univ. Valencia, ES) [211]

P1.30 A gray - box approach for biofilm growth modeling. ***H. Velasco-Bedrán, U. Aréchiga Viramontes[1], T. Esparza-Isunza[1], H. F. López-Isunza[1]** (Nat. Sch. Biol. Sci., Casco de Santo Tomás, MX; [1]Univ. Autonom. Metrop., Iztapalapa, MX) [342]

P1.31 Experimental determination of inhibition of nitrification by micropollutants. **J. Rachmania, C. Creemers, *J. Baeyens** (Cathol. Univ. Leuven, Heverlee, BE) [216]

P1.32 Hydrodesulfurization of the light gas oil - kinetic determination in batch autoclave. ***D. Skala, A. Orlovic, B. Markovic[1], A. Tarlecki-Baricevic[1], D. Jovanovic[1]** (Fac. Technol. Metall., Beograd, YU; [1]ICTM, Beograd, YU) [854]

P1.33 Hydrodesulfurization of the light gas oil - catalyst activity study in fixed-bed reactor. ***D. Skala, A. Orlovic, B. Markovic[1], A. Tarlecki-Baricevic[1], D. Jovanovic[1]** (Fac. Technol. Metall., Beograd, YU; [1]ICTM, Beograd, YU) [856]

P1.35 Survey of the catalytic activity, cracking of the n-hexadecane in the presence of metallic silicates catalysts (Al, Ni, Mo). Application of the "sol-gel" method. ***A. Boucenna, S. Dekkar, A. Gherbi** (Univ. M. Bougarra, Boumerdes, DZ) [1138]

P1.36 Influence of thermal treatment on capacitive characteristics of LiLaAl electrodes. **N. A. Sobgaida, A. A. Olshanskaya, *S. S. Popova** (Saratov State Tech. Univ., RU) [1108]

P1.37 On the way to catalytic polymerization of olefins in the gas-phase minireactor. ***A. Novák, G. Salejová, J. Kosek, M. Marek** (Inst. Chem. Technol., Praha, CZ) [1099]

P1.38 Evaluation of technological factors influence on the efficiency of the reactor's operation of N,N-methyl phenylamine synthesis. ***O. A. Tishin, V. N. Kharitonov, E. K. Beloussov[1], Yu. D. Batrin[1], T. V. Rudakova[1], M. K. Starovoitov[1]** (Volgograd State Tech. Univ., Volzhsky, RU; [1]JSC Volzhsky Orgsynthese, RU) [1064]

P1.39 Preliminary mixing conditions determination in stirred tank reactors. ***O. A. Tishin, I. N. Dorokhov[1], A. F. Katcheguine[2]** (Volgograd State Tech. Univ., Volzhsky, RU; [1]Mendeleev Univ. Chem. Technol. Russia, Moskva, RU; [2]JSC Volzhsky Orgsynthese, RU) [1065]

P1.40 Kinetic model development of morpholine synthesis. ***V. M. Shapovalov, O. A. Tishin, V. N. Harritonov, M. K. Starovoitov[1], A. F. Katcheguine[1], T. V. Rudakova[1], E. K. Beloussov[1], Yu. D. Batrin[1]** (Volgograd State Tech. Univ., Volzhsky, RU; [1]JSC Volzhsky Orgsynthese, RU) [1062]

P1.41 Three way catalytic activity of a high surface low loading Pt/Ce0.68Zr0.32O2 washcoated monolith. **J. R. González-Velasco, M. P. González-Marcos, *A. Betolaza, J. L. Marc, M. A. Gutiérrez-Ortiz** (Univ. País Vasco, Bilbao, ES) [975]

P1.42 Surface properties of acid activated and Fe-, Al- pillared clays. ***S. Balci, A. Dageri, S. Poyraz** (Gazi Univ., Ankara-Maltepe, TR) [972]

P1.43 Catalytic activity of ceria-silver-cobalt composite oxide catalyst for the selective carbon monoxide oxidation. **F. Balikci, *C. Güldür** (Gazi Univ., Ankara-Maltepe, TR) [956]

P1.44 Nitric oxide reduction with carbon monoxide over cobalt-palladium catalysts. ***E. David, V. Stanciu, A. Armeanu, C. Sandru** (Nat. Res. Inst. Cryog. Isotop. Technol., RO) [923]

P1.45 Energetic chemical process of synthesis-gas production from natural gas. ***V. N. Pisarenko, D. B. Belyi** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [904]

P1.46 Determinations of the activation energy of oxidative and non-oxidative thermal degradations of the total lipids extracted from fatty and intramuscular tissue fallow deer (Cervus Dama dama L). ***L. Milovanovic, I. Popovic[1], D. Skala[1], D. Antonovic[1], S. Saičic[2], M. Ranic[3]** (Inst. Nucl. Sci. Vinča, Beograd, YU; [1]Fac. Technol. Metall., Beograd, YU; [2]Inst. Meat Hyg. Technol., Beograd, YU; [3]Inst. Med. Res., Beograd, YU) [902]

P1.47 Effect of high temperature treatment of support on the cobalt catalyst activity in 2,3-dihydrofuran synthesis. **V. Stonkus, K. Edolfa, L. Leite, *A. Ruplis[1], L. Plyasova[2], A. Khassin[2]** (Latv. Inst. Org. Synt., Riga, LV; [1]Riga Tech. Univ., LV; [2]Boreskov Inst. Catal., Novosibirsk, RU) [844]

P1.48 Comparison of hydrodynamic characteristis between bath and continuous torus reactor. **F. Atmani, *A. Bensmaili** (USTHB, Algiers, DZ) [832]

P1.49 Analysis of the emergency cooling regime reliability for batch reactors with exothermic reaction. ***S. Špatenka, J. Horák** (Inst. Chem. Technol., Praha, CZ) [820]

P1.50 Method of using by-products of processes of disproportionation of trichlorosilane and trietoxysilane as a source for aerogel preparation. **L. Gordeev, M. Glebov, *I. Bogomolov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [811]

P1.51 An algorithm to estimate the effectiveness factor in catalytic pellets. **S. D. Keegan, S. P. Bressa, N. J. Mariani[1], *G. D. Mazza** (Univ. Nac. La Plata, AR; [1]Univ. Buenos Aires, AR) [801]

P1.52 Solar energy conversion on CdSe electrode with nanostructured surface. ***G. Ya. Kolbasov, T. S. Lukiyanuk** (Inst. Gen. Inorg. Chem., Kyiv, UA) [714]

P1.53 Products of non-total thermocatalytic and high-temperature oxidation of chloroorganic derivatives of propane. ***Z. Gorzka, A. Zarczynski, M. Kazmierczak, M. Misiak** (Tech. Univ. Lodz, PL) [709]

P1.54 Oxidation of tetrachloromethane with application of a platinum catalyst. ***A. Zarczynski, T. Paryjczak, Z. Gorzka, M. Kazmierczak, E. Szulc** (Tech. Univ. Lodz, PL) [704]

P1.55 Kinetic parameters of the alcoholic fermentation carried out by the use of a mixture of Saccharomyces cerevisiae and Kluyveromyces fragilis. **G. Inei-Shizukawa, *H. Velasco-Bedrán, O. Sánchez-Collazo, M. Díaz-Olvera** (Esc. Nac. Cienc. Biol., Carpio, MX) [700]

P1.56 Influence of thiazole on concentrations of dioxins in oxidation of 1,2-dichloropropane on copper-zinc catalyst. ***M. Kazmierczak, T. Paryjczak, M. Misiak, E. Lezak** (Tech. Univ. Lodz, PL) [697]

P1.57 Upgrading of middle distillate of Maya heavy crude oil with different Ni-Mo hydrotreating catalysts. ***A. Pérez, G. Marroquin, G. Betancourt, E. Mariaca-Dominguez, W. Smith** (Inst. Mex. Pet., Mexico, MX) [608]

P1.58 Fine-dispersed aluminium oxide production process development and simulation. **E. E. Grenberg, Yu. I. Levin, I. E. Strelnikova, V. V. Saradgev, D. A. Bobrov[1], O. P. Shumakova[1], *O. V. Istomina[1]** (FSUE IREA, Moskva, RU; [1]Mendeleev Univ. Chem. Technol. Russia, Moscow, RU) [217]

P1.59 Hot wall tubular CVD reactor: design and kinetics of film growth. **K. T. Raic** (Fac. Technol. Metall., Beograd, YU) [219]

P1.60 An investigation on the effect of kinetics in modeling of dual fuel (natural gas/diesel) catalytic converter. ***N. Sallamie, M. Estiri** (Iran Univ. Sci. Technol., Tehran, IR) [125]

P1.61 Kinetics of cinnamaldehyde liquid-phase hydrogenation over supported bimetallic Ru-Sn sol-gel catalysts. ***J. Hájek, D. Yu. Murzin, N. Kumar, T. Salmi** (Abo Akademi Univ., FI) [120]

P1.62 Kinetic study of carbonyl sulphide with aqueous solutions of diethanolamine and methydiethanolamine. Experiments and modeling. **F. Amararene, *C. Bouallou** (Ec. Nat. Sup. Mines, Paris, FR) [27]

P1.63 Shape-selectivity in naphthalene isopropylation. ***R. Brzozowski, W. Skupiński** (Inst. Ind. Chem., Warszawa, PL) [372]

P1.64 Proposition of technology for reduction of sulfur and nitrogen oxides emissions from thermal power plants. ***N. D. Crnomarkovic, B. S. Repic, R. V. Mladenovic, M. P. Jovanovic, O. M. Neskovic, M. V. Veljkovic, V. M. Manovic[1]** (Inst. Nucl. Sci. Vinča, Beograd, YU; [1]Fac. Min. Geol., Beograd, YU) [369]

P1.65 Tubular reactor simulations of supercritical water oxidation: effect of adding lateral air feed streams both on conversion and temperature profiles. ***M. J. Cocero, J. Arévalo** (Univ. Valladolid, ES) [339]

P1.66 Effect of surface chemical properties of activated carbon on the ozone decomposition reaction in aqueous phase. ***H. Valdés Morales, C. A. Zaror** (Univ. Concepción, CL) [317]

P1.67 Modelling of mass transfer with complex reaction in gas-liquid systems. **D.-J. Vinel, *C. Bouallou** (Ec. Nat. Sup. Mines, Paris, FR) [225]

P1.68 Study of carbon catalysts in liquid - phase oxidation of water contaminants by oxygen. ***M. V. Batygina, N. M. Dobrynkin, A. S. Noskov** (Boreskov Inst. Catal., Novosibirsk, RU) [238]

P1.69 Factors affecting production of some sulfa drugs. **I. I. Imam Ismail** (Nat. Res. Cent., Cairo, EG) [53]

P1.71 Plasma conversion of silicium tetrafluoride. ***A. Ivanov, V. Seredenko, V. Shatalov, A. Volosnev** (Russ. Res. Inst. Chem. Technol., Moskva, RU) [84]

P1.72 Influence of polyelectrolytes on crystallization of zeolite Y. ***H. J. Koroglu, H. Yuzer, A. N. Bulutcu[1]** (TUBITAK, Gebze-Kocaeli, TR; [1]Istanbul Tech. Univ., TR) [86]

P1.73 Application of tracers for optimisation of petrochemical waste water treatment processes and apparatus. ***A. Owczarczyk, J. Palige, A. G. Chmielewski** (Inst. Nucl. Chem. Technol., Warszawa, PL) [89]

P1.74 The influence of catalyst composition on polyalphaolefins hydrogenation efficiency. ***O. N. Tsvetkov, V. M. Shkolnikov** (All-Russ. Res. Inst. Oil Ref., Moskva, RU) [96]

P1.75 Kinetic modelling of the hydrothermal reaction of fly ash with calcium hydroxide and CaSO4 in the preparation of desulfurant sorbents. ***M. J. Renedo, J. Fernández** (Univ. Cantabria, Santander, ES) [98]

P1.76 Effect of temperature on ultrasonic decomposition of organic compound. ***F. Yamashita, Y. Kiba, N. Aihara** (Kanagawa Inst. Technol., JP) [139]

P1.77 New catalytic systems: catalytic decomposition of peroxocomplexes in akaline solutions. ***E. G. Ippolitov, M. A. Shlyakhova[1], U. M. Boldurev[1], T. A. Tripol'skaya** (Inst. Gen. Inorg. Chem., Moskva, RU; [1]State Pedag. Univ., Moskva, RU) [150]

P1.78 Treatment of the waste polyolefines. **P. Grzybowski** (Warsaw Univ. Technol., PL) [166]

P1.79 Complex PVP-Me(n+) - active catalyst of vinyl monomers polymerization. **V. Skorokhoda, *O. Suberlyak, O. Grytsenko** (Nat. Univ. Lviv Polytechnic, UA) [169]

P1.80 Characterization of catalysts for the conversion of CO, CO2 and H2 to dimethyl ether by FTIR spectroscopy, X-ray diffraction and X-ray fluorescence. ***J. Ereña, J. M. Arandes, R. Garoña, A. T. Aguayo, J. Bilbao** (Univ. País Vasco, Bilbao, ES) [177]

P1.81 Physical properties of bifunctional catalysts for synthesis of dimethyl ether from syngas and CO2. ***J. Ereña, J. M. Arandes, R. Garoña, A. G. Gayubo, J. Bilbao** (Univ. País Vasco, Bilbao, ES) [193]

P1.82 Control of enzymatic protein hydrolysis by measurements of the freezing point depression. **A. Guadix, *E. M. Guadix, M. P. Páez, F. Camacho** (Univ. Granada, ES) [252]

P1.83 Catalytical removal of nitrates from waste water. **M. Bereza, *E. Sulman, V. Matveeva** (Tver Tech. Univ., RU) [268]

P1.84 Liquid-phase catalytic reduction of 2,4-dimethylacetophenone. ***I. P. Shkilyova, Yu. N. Venkova, L. P. Misko** (Tver Tech. Univ., RU) [281]

P1.85 Economical efficiency analysis of combined technology in dimethyl ether manufacture from methanol. **V. N. Pisarenko, *M. B. Glebov, E. A. Moshnyakov, L. S. Glebov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [315]

P1.86 Effect of additives on the curing of an unsaturated polyester resin. ***S. Tomanová, R. Pavlica, A. Blaha** (Tomas Bata Univ., Zlín, CZ) [316]

P1.87 Low-temperature dehydrogenation of isobutane with membrane reactor. **M. Ohta, Y. Ikeda, *A. Igarashi** (Kogakuin Univ., Tokyo, JP) [323]

P1.88 The combustion process of coal chars and its influence on development of porous structure. **B. Remiarová, *J. Markoš, R. Žajdlík, L. Jelemenský, K. Bumbalová** (Slovak Univ. Technol., Bratislava, SK) [377]

P1.89 Thermal deactivation of a beta-galactosidase from K. fragilis. **M. Ladero, R. Ferrero, A. Santos, *F. García-Ochoa** (Univ. Complutense, Madrid, ES) [379]

P1.90 Assessment of Pt, Co-Mo and Ni-Mo catalysts supported over alumina for aromatic hydrogenation. ***J. Trujillo de Herrera, M. Gil, A. González, S. Marzuka** (Univ. Cent. Venezuela, Caracas, VE) [404]

P1.91 Catalytic activity of Pt catalysts supported on activated carbon felts. ***J. Vilella, S. R. De Miguel, C. Salinas-Martinez de Lecea[1], A. Linares-Solano[1], O. A. Scelza** (Univ. Nat. Litoral, Santiago del Estero, AR; [1]Univ. Alicante, ES) [408]

P1.92 Heterophase polymerization processes in presence of polyvinyl pyrrolidone. **V. Levytskyi, *O. Suberlyak, T. Humenetskyi** (Lviv Polytech., UA) [478]

P1.93 Mathematical simulation and optimization of a wide class of bacteria growth in biochemical reactors. ***A. S. Skichko, E. V. Shmakova, S. E. Muhtarova, N. S. Panikov, E. M. Koltsova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [501]

P1.94 Optimal temperature policy for batch reactor in the presence of catalyst deactivation. ***I. Grubecki, M. Wojcik** (Univ. Technol. Agric., Bydgoszcz, PL) [541]

P1.95 Steady state optimization of the cyclohexanol production through phenol hydrogenation. ***M. M. Santos, R. Maciel Filho** (UNICAMP, Campinas, BR) [576]

P1.96 Kinetic studying in a torus reactor: application to the saponification. ***R. Rihani, A. Bensmaili[1]** (EMP, Algiers, DZ; [1]USTHB, Algiers, DZ) [640]

P1.97 Modeling of plug-flow reactor with exothermic reaction. **E. Gordeeva** (State Univ. Eng. Ecol., Moskva, RU) [645]

P1.98 Inertia effect of mixing feed stream with recycle stream in the tubular reactor with mass-feedback. **M. Berezowski, M. Kowalczyk, A. Wegrzynska[1], *M. Kurpas[1]** (Univ. Technol., Krakow, PL; [1]Silesian Univ. Technol., Gliwice, PL) [696]

P1.99 Influence of ceria on Pt catalysts for hydrocarbons oxidation. **H. Pérez-Pastenes, *T. Viveros-García** (Univ. Autonom. Metrop., Iztapalapa, MX) [755]

P1.100 Partial oxidation of light alkanes over silica supported monometallic and bimetallic oxide systems. **M. C. Herrera Delgado, *M. A. Larrubia, L. J. Alemany, M. Panizza[1], C. Resini[1], G. Busca[1]** (Univ. Málaga, ES; [1]Univ. Genova, IT) [773]

P1.101 Partial propane photoinduced oxidation with bimetallic TiO2 supported catalysts. ***M. C. Herrera Delgado, A. García-Crespillo, M. A. Larrubia, J. M. Blasco, L. J. Alemany** (Univ. Málaga, ES) [774]

P1.102 Stress in membrane bioreactor: theoretical investigations and experimental results. **N. Menshutina, *E. Guseva, R. Kuzmichev, T. Nizhegorodova, M. Fick[1], J. Boudrant[1]** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU; [1]INPL-ENSAIA, Vandoeuvre-les-Nancy, FR) [788]

P1.103 An analytic solution to the transient diffusion-reaction problem with particle diameter distribution in a slurry reactor. **E. Morales-Zárate, *R. Lobo-Oehmichen, J. A. Ochoa-Tapia** (Univ. Autonom. Metrop., Iztapalapa, MX) [802]

P1.104 Approximate isothermal global effectiveness factor. **J. O. M. De la Rosa, T. V. Viveros García[1], *J. A. Ochoa-Tapia[1]** (Inst. Mex. Petrol., Mexico City, MX; [1]Univ. Autonom. Metrop., Iztapalapa, MX) [803]

P1.105 The insertion of EtNCO into W-Cl bond - the direct method of its condensation. ***N. A. Ovchinnikova, A. E. Sinyakov, Yu. N. Mikhailov, Yu. E. Gorbunova, A. S. Kanishcheva, S. G. Sakharov** (Inst. Gen. Inorg. Chem., Moskva, RU) [884]

P1.106 Limitation of catalyst deactivation during selective oxidation of hydrocarbons by use of structured catalyst carrier. ***W. Krajewski, A. Dubis, A. Kolodziej, Z. Najzarek[1]** (Inst. Chem. Eng., Gliwice, PL; [1]Tech. Univ. Opole, PL) [917]

P1.108 Synthesis, characterization and activity of Pd mixed oxides Al-Mg catalysts. **C. Calderón, M. Rebollar, M. A. Valenzuela, *J. Salmones[1]** (Nat. Polytech. Inst., México DF, MX; [1]Inst. Mex. Petrol., México DF, MX) [973]

P1.109 Investigation of redox system Eu3+/Eu2+ electroreduction on carbon glass electrode. **A. G. Baynoserova, G. S. Minazheva, S. T. Shalgymbaev, *M. K. Nauryzbaev** (Al-Farabi Kaz. Nat. Univ., KZ) [960]

P1.110 Electrochemical and optical studies of anodized Nb surfaces as high performance material. ***I. Arsova, A. Buzarovska, A. Prusi, L. Arsov** (Univ. Kiril Metodij, Skopje, MK) [991]

P1.111 The application of shrinking core model in describing of magnesite reaction with sulfuric acid. ***P. Jirků, J. Vídenský, V. Glaser** (Inst. Chem. Technol., Praha, CZ) [996]

P1.112 The effects acting by zinc oxide reaction with sulfane. ***M. Moravec, J. Vídenský, V. Glaser, P. Čermák** (Inst. Chem. Technol., Praha, CZ) [998]

P1.113 Applicability of the photo-fenton system using solar energy. **I. B. S. Will, *J. E. F. De Moraes, R. Guardani, C. A. O. Nascimento** (Univ. Sao Paulo, BR) [1003]

P1.114 Catalytic oxidation of 1,1,2,2-tetrachloroethane. **O. A. Konorev, *K. L. Zanaveskin** (Sci. Res. Inst. Syntez, Moskva, RU) [1008]

P1.115 Increasing the acetification rates in a pilot-plant acetifier by cellular adaptation effect. ***I. De Ory, L. E. Romero, D. Cantero** (Univ. Cádiz, ES) [1019]

P1.116 Synthesis and optimization of ethylene amines process. ***F. Golmohammad, D. Sadeghi Fateh, S. Shokrollahzadeh** (IROST, Tehran, IR) [1036]

P1.117 Remediation of aminosilicone-containing wastewaters by advanced oxidation processes: comparison of artificial and solar irradiation in the photo-fenton reaction. **A. C. S. C Teixeira, R. Guardani, *C. A. O. Nascimento** (Univ. Sao Paulo, BR) [1044]

P1.118 Extended mechanism of the bromate-sulfite-ferrocyanide reaction and comparison with experiments. **J. Zagora, M. Voslař, L. Schreiberová, *I. Schreiber** (Inst. Chem. Technol., Praha, CZ) [1092]

P1.119 Propylene aromatisation on zeolites based catalysts. ***B. Hamada, K. Adjamov[1]** (Univ. Boumerdes, DZ; [1]Acad. Pet. Chem., Baku, AZ) [1112]

P1.120 Electrooxidation of crude oil emulsion on smooth platinic electrode. ***A. Gawdzik, S. Gajda, P. Wlodarczyk, A. Sofronkow** (Univ. Opole, PL) [1145]

P1.121 An equilibrium analysis of behavior of trace elements during fluidized bed combustion of lignite. **J. Smolík, J. Schwarz, *L. Džumbová, J. Kugler, V. Veselý, I. Sýkorova[1], J. Kučera[2], V. Havránek[2], J. Leitner[3]** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]Inst. Rock Struct. Mech., Praha, CZ; [2]Nucl. Phys. Inst., Řež u Prahy, CZ; [3]Inst. Chem. Technol., Praha, CZ) [1155]

P1.122 The study of the apatite porosity changes during nitric acid dissolution. ***I. Sedlářová, J. Vídenský, P. Plát** (Inst. Chem. Technol., Praha, CZ) [1167]

P1.123 E2-integral for the determination of kinetic parameters from thermogravimetry. **Hsi-Jen Chen** (Tamkang Univ., Tamsui, TW) [1150]

P1.124 Periodic feed modulation of wet oxidation in trickle-bed reactor. ***V. Ch. Chyba, V. Tukač, J. Hanika** (Inst. Chem. Technol., Praha, CZ) [1191]

P1.125 Application of slurry impregnation for preparation of MoO3/Al2O3 catalysts with sharp eggshell Mo distribution. **L. Kaluža, *M. Zdražil** (Inst. Chem. Proc. Fundam., Praha, CZ) [1192]

P1.126 Hydrocarbon feedstock tests by laboratory pyrolysis. ***Z. Bělohlav, D. Pavlík, T. Herink[1], P. Svoboda[1]** (Inst. Chem. Technol., Praha, CZ; [1]Chemopetrol a. s., Litvínov, CZ) [1214]

P1.127 Using the gas chromatograph pyrolyser as a micro-pulse reactor for study of kinetics and selectivity of heterogeneously catalysed reactions. ***P. Zámostný, Z. Bělohlav** (Inst. Chem. Technol., Praha, CZ) [1215]

P1.128 Determination of kinetic parameters of dicyclopentadiene hydrogenation. ***D. Skála, J. Hanika** (Inst. Chem. Technol., Praha, CZ) [966]

P1.129 1H NMR imaging as a method to investigate of the catalytic reactions. ***A. A. Lysova, I. V. Koptyug[1], A. V. Kulikov[2], V. A. Kirillov[2], R. Z. Sagdeev[1], V. N. Parmon[2]** (Novosibirsk State Univ., RU; [1]Int. Tomogr. Cent., Novosibirsk, RU; [2]Boreskov Inst. Catal., Novosibirsk, RU) [1282]

P1.130 Gas desulfurization and sulfur recovery using redoxy-regenerative catalysts. ***D. C. Popescu, E. Angelescu[1], I. Viorel** (PETROM, Ploiesti, RO; [1]Univ. Politehnica, Bucuresti, RO) [1277]

P1.131 Experimental investigations of esterification with and without homogeneous catalytic support. ***C. Rohde, R. Marr, M. Siebenhofer** (Tech. Univ. Graz, AT) [1297]

P1.132 Effect of heavy metals on phenol biodegradation and nitrification. **B. Fernández, L. Amor, C. Kennes, *M. C. Veiga** (Univ. Coruña, ES) [1424]

P1.133 Desorption of Ag (I) on chitosan beads. **R. Zarzycki, *M. Dorabialska, W. Sujka, Z. Modrzejewska** (Tech. Univ. Lodz, PL) [1333]

P1.134 Effect of Ir loading and sulfur compounds on hydrodenitrogenation activity of the Ir-Mo/alumina sulfide catalyst. ***J. Cinibulk, Z. Vít** (Inst. Chem. Proc. Fundam., Praha, CZ) [1323]

P1.135 Mixing process of catalysts into nitrogen gas jet. ***R. Ogiso, A. Mizusaki[1], H. Monji[1], G. Matsui[1]** (Chioda Corp., Yokohama, JP; [1]Univ. Tsukuba, JP) [1329]

P1.136 Forced composition cycling of a catalytic fixed bed reactor for steam methane reforming: modeling and experimental aspects. ***R. M. M. Jorge, L. M. M. Jorge[1], R. Giudici[2]** (UFP, Curitiba, BR; [1]Univ. Est. Marinagá, BR; [2]EPUSP, Sao Paulo, BR) [1331]

P1.137 Mathematical modeling of the catalytic decoking process by periodic air pulses. ***R. M. M. Jorge, L. M. M. Jorge[1], R. Giudici[2]** (UFP, Curitiba, BR; [1]Univ. Est. Marinagá, BR; [2]EPUSP, Sao Paulo, BR) [1332]

P1.139 Application of radioisotopic-35S active site monitoring for preselection of sulfide CoMo catalysts for HDS of crudes of various types. **V. M. Kogan** (Zelinsky Inst. Org. Chem., Moskva, RU) [1358]

P1.140 Biodegradation process in an inverse fluidized bed flow reactor. ***B. Kawalec-Pietrenko, J. Szczepaniak** (Tech. Univ. Gdansk, PL) [1362]

P1.141 Experimental study of penicillin G hydrolysis in an enzymatic electromembrane mini-reactor with immobilised penicillin G acylase. **A. Zadražil, R. Chmelíková, *P. Hasal** (Inst. Chem. Technol., Praha, CZ) [1368]

P1.142 Transport parameters of ion-exchange and hydrogel membranes. **A. Andrová, R. Kukula, *P. Hasal** (Inst. Chem. Technol., Praha, CZ) [1377]

P1.143 Vapor-phase nitration of aromatic hydrocarbons over heterogeneous catalysts. ***S. S. Demygin, A. A. Greish, L. M. Kustov** (Inst. Org. Chem., Moskva, RU) [1378]

P1.144 Performance of anaerobic baffled reactor (ABR) treating synthetic wastewater influenced by decreasing COD/SO4 ratios. ***M. Vossoughi, M. Shakeri, I. Alemzedeh** (Sharif Univ. Technol., Tehran, IR) [1380]

P1.145 Efficient oxidation of phenolic compounds by iron and manganese porphyrine/MCM41 catalysts. ***K. Nazari, R. Khodafarin, S. Shokrolahzadeh[1], A. Mahmoudi[1]** (Islamic Azad Univ., Shahr Rey Branch, Tehran, IR; [1]Islamic Azad Univ., Tehran, IR) [1383]

P1.146 A novel reactor concept for steam reforming with integrated feed evaporation and water-gas-shift reaction. ***A. Morillo, G. Eigenberger, I. Hermann[1], D. Lemken[1]** (Univ. Stuttgart, DE; [1]Adam Opel AG, Mainz-Kastel, DE) [1392]

P1.147 Effect of liquid phase viscosity and type of gas distributor on gas phase mixing in bubble column reactor. **M. Fialová** (Inst. Chem. Proc. Fundam., Praha, CZ) [1397]

P1.148 Reaction kinetic investigation using reaction calorimetry combined with gas evolution measurement. ***M. Godala, L. Nowicki** (Tech. Univ. Lodz, PL) [1402]

P1.149 Optimization of reaction conditions on catalytic removal of ortho-methoxy phenol from aqueous solutions using horsersdish peroxidase(HRP C). ***R. Khodafarin, K. Nazari, A. Mahmoudi** (Islamic Azad Univ., Tehran, IR) [1411]

P1.150 Plasmachemical synthesis of tungsten carbide for catalysis. ***V. Brožek, V. Dufek, M. Eliáš[1], J. Žila[1], J. Janča[1]** (Inst. Chem. Technol., Praha, CZ; [1]Masaryk Univ., Brno, CZ) [1426]

P1.151 Polynomial interpolation of the solutions of diffusion-kinetic equations. **I. A. Denisov, A. D. Polyanin, P. V. Sysoev, *A. V. Vyazmin** (Inst. Probl. Mech., Moskva, RU) [1434]

P1.152 Methanol steam reforming for pure hydrogen production using a membrane reactor. ***A. Basile, F. Gallucci, L. Paturzo** (Res. Inst. Membrane Technol., Rende, IT) [1436]

P1.153 Acetylcholine esterase - dynamic behavior with flow calorimetry. ***F. Malík, V. Štefuca** (Slovak Univ. Technol., Bratislava, SK) [1437]

P1.154 Study of the effect of sucrose concentration and cultivation time on the fructosyltransferase production by Aureobasidium pullulans. ***M. Antošová, M. Polakovič, M. Slovinská, A. Madlová, V. Illeová, V. Báleš** (Slovak Univ. Technol., Bratislava, SK) [1438]

P1.155 The comparison study of metal-oxide and carbon catalysts in the catalytic wet peroxide oxidation of phenol. ***O. P. Pestunova, O. L. Ogorodnikova, V. N. Parmon** (Boreskov Inst. Catal., Novosibirsk, RU) [1439]

P1.156 Growth and non-growth production of gluconic acid from glucose by Aspergillus niger. ***H. Znad, V. Báleš** (Slovak Univ. Technol., Bratislava, SK) [1440]

P1.157 Sulfur poisoning of palladium catalysts used for methane oxidation: effect of support. **L. S. Escandón, *S. Ordonez, F. V. Díez** (Univ. Oviedo, ES) [1446]

P1.158 Importance of the wall effects in reverse flow reactors for catalytic combustion of methane lean mixtures. **M. A. G. Hevia, *S. Ordonez, F. V. Díez, D. Fissore[1], A. A. Baresi[1]** (Univ. Oviedo, ES; [1]Politecnico, Torino, IT) [1447]

P1.159 Gas-liquid mass transfer enhancement in multi-phase reactors using microphases. ***H. J. Heeres, M. V. Dagaonkar, A. A. C. M. Beenackers** (Rijks Univ. Groningen, NL) [1448]

P1.160 Kinetics of thermal inactivation of a low-purity urease. **V. Illeová, *M. Polakovič, V. Štefuca, P. Ačai, J. Muhammad** (Slovak Univ. Technol., Bratislava, SK) [1456]

P1.161 Kinetics of esterification of phthalic anhydride with selected aliphatic alcohols. ***M. Grzesik, J. Skrzypek, M. Lachowska** (Inst. Chem. Eng., Gliwice, PL) [1459]

P1.162 Multiply solutions in autocatalysis with external energy transfer. ***M. Grzesik, P. Ptaszek[1], J. Skrzypek** (Inst. Chem. Eng., Gliwice, PL; [1]Acad. Agric., Kraków, PL) [1462]

P1.163 Optimum temperature profile for a complex reaction system accompanied by external diffusion. ***M. Grzesik, J. Skrzypek, A. Ptaszek[1]** (Inst. Chem. Eng., Gliwice, PL; [1]Acad. Agric., Kraków, PL) [1464]

P1.164 Optimum temperature profile for a complex reaction system accompanied by internal diffusion. ***M. Grzesik, J. Skrzypek, A. Ptaszek[1]** (Inst. Chem. Eng., Gliwice, PL; [1]Acad. Agric., Kraków, PL) [1465]

P1.165 Synthesis of 2,4,6-trisubstituted s-triasine containing fragments of sterically hindered and their potential application as additives anti-oxidisers of lubricants. ***F. Yahia Laaouad, S. Mokrani** (Univ. Boumerdes, DZ) [1468]

P1.166 Kinetics of methane catalytic combustion on Mn substituted barium hexa-aluminates catalysts. ***V. Pitchon, D. Yu. Murzin[1]** (LERCSI, Strasbourg, FR; [1]Abo Akad. Univ., Turku, FI) [1489]

P1.167 Kinetics and equilibrium of copper sorption from sludges on chelating ampholyte. **V. N. Rychkov, *M. L. Cherny, E. V. Kirillov, S. V. Kirillov** (Urals State Tech. Univ., Ekaterinburg, RU) [1488]

P1.168 Method of using by-products of processes of disproportionation of trietoxysilane as a source for aerogel preparation. **L. S. Gordeev, M. B. Glebov, *I. B. Bogomolov** (Mendeleev Univ. Chem. Technol. Russ., Moskva, RU) [1490]

P1.169 Effect of gas distributor and column geometry on bubbling regimes and gas holdup in bubble column reactors. ***M. Fialová, J. Zahradník, M. Ruzicka, J. Drahoš, J. Řezníčková[1]** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]Inst. Chem. Technol., Praha, CZ) [1503]

P1.170 A computer control pilot plant system for suding of pyrolysis reactions and coke deposition in thermal cracking process - experimental results. ***A. Niaei, M. E. Masoumi, J. Towfighi, M. Sadrameli, M. Shahrokhi** (Tarbiat Modarres Univ., IR) [1510]

P1.171 Influence of acid-base properties of modified alumina on VOC combustion activity of Pt/Al2O3 catalyst. ***K. Jirátová, T. Ioannides[1], P. Čuba, G. Avgouropoulos[1], J. Kociánová** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]Inst. Chem. Eng., Patras, GR) [1519]

P1.172 Modeling and simulation of the pyrolysis reactions and coke deposition in industrial ethane crackers. **J. Towfighi, *A. Niaei, R. Karimzadeh, G. Saedi, S. Hosseini** (Tarbiat Modarres Univ., Tehran, IR) [1524]

P1.173 Possible applications for vacuum pyrolysis in the processing of waste materials. **W. A. De Jongh, *J. H. Knoetze** (Univ. Stellenbosch, Matieland, ZA) [1525]

P1.174 The non-oxidative methane aromatization on Mo-modified zeolite catalysts. ***Š. Špatenka, J. Kačur, V. Fíla, J. Fulem, B. Bernauer** (Inst. Chem. Technol., Praha, CZ) [1526]

P1.175 Oxygen uptake rate (OUR) in animal cell culture. ***S. Vanlaethem, V. Halloin, E. DeBuyle[1]** (Univ. Libre, Bruxelles, BE; [1]GlaxoSmithKline, Rixensart, BE) [873]

P1.176 The behavior of the millisecond downflow fluidized bed reactor compared to the conventional fluidized catalytic cracker. ***Y. Jin, Y. Zheng, F. Wei** (Tsinghua Univ., Beijing, CN) [1348]

P1.177 Application of reactive distillation in the oil refining and petrochemical industry. ***M. M. Elgarni, J. Rashed** (Pet. Res. Inst., Tripoli, LY) [1512]

P1.178 Forecasting of changing the physical characteristics of polymeric materials under different ways of their modification. ***Yu. A. Komissarov, Yu. V. Zelenev, V. I. Khromov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [21]

P1.179 New design of a reverse-flow reactor. **J. Thullie, *M. Bodzek** (Silesian Univ. Technol., Gliwice, PL) [529]

P1.180 Kinetic and reaction mechanism of the ferrihydrite to goethite transformation in alkaline medium. ***A. Hamzaoui, A. Arbi, M. El Maaoui** (Fac. Sci., Tunis, TN) [1501]

P1.181 Catalytic decomposition of nitrous oxide over calcined hydrotalcite-like compounds. ***L. Obalová, F. Kovanda[1], K. Jirátová[2], M. Chmielová, K. Wichterle, V. Dorničák[1]** (Tech. Univ. Ostrava, CZ; [1]Inst. Chem. Technol., Praha, CZ; [2]Inst. Chem. Proc. Fundam., Praha, CZ) [1528]

P1.182 Kinetics of dissolution of calcined Tunisian phosphate ore particles using phosphoric acid and acetic acid. **F. Ben Brahim** (Fac. Sci., Gafsa, TN) [1530]

P1.183 Niobium pentoxide reduction-carburization with hydrogen-methane at low temperature in a rotary cylinder reactor: synthesis, caracterization and kinetics. **F. A. Oliveira Fontes, J. F. De Souza, *C. P. Souza, M. Benachour[1], K. K. P. Gomes** (UFRN, Lagoa Nova, BR; [1]UFPE, Recife, BR) [768]

P3 Posters — Tuesday
Separation processes

Absorption and distillation

P3.1 Sensitivity study and energy consumption optimization of isopropylbenzene distillation. ***V. Malinovskiy, T. N. Gartman** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [566]

P3.2 Experimental and simulated separation curves for recovering carotenoids from vegetal oil through molecular distillation process. ***C. B. Batistella, M. R. Wolf Maciel, R. Maciel Filho** (UNICAMP, Campinas, BR) [847]

P3.3 Simulation and optimization of a CO2 absorption plant with amines. ***H. Elman, L. Hernandez, S. Sandoval, W. López** (Univ. Cent. Venezuela, Caracas, VE) [570]

P3.5 Effect of draft tube with a perforated plate on gas holdup and mass transfer in a bubble column. ***F. Yamashita, Y. Kiba, Y. Kitahara** (Kanagawa Inst. Technol., JP) [137]

P3.6 Measurement of gas holdup by ultrasonic displacement sensor. ***F. Yamashita, Y. Kiba, M. Kimura** (Kanagawa Inst. Technol., JP) [147]

P3.7 Profiles of gas holdup and passage frequency of bubbles in bubble columns. ***F. Yamashita, Y. Kiba, T. Usui, K. Tanabe, Y. Ono** (Kanagawa Inst. Technol., JP) [153]

P3.8 Performance characteristics of a multivessel batch distillation column. ***G. Fieg, T. Kapala** (Cognis Deutschland, Düsseldorf, DE) [97]

P3.9 Comparative minimum energy consumptions analysis of reactive distillation processes with and without recycle. **S. L. Nazansky, A. V. Solokhin, *V. S. Timofeev** (Lomonosov State Univ., Moskva, RU) [417]

P3.10 Experimental study of solid - liquid mass transfer in column with structured packing. ***G. Soare, G. Bozga, R. Dima, V. Plesu** (Univ. Politech., Bucuresti, RO) [458]

P3.11 Hybrid of melt crystallization with distillation and membrane separation. ***S. K. Myasnikov, A: D. Uteshinsky, B. A. Kasymbekov[1], N. N. Kulov** (Inst. Gen. Inorg. Chem., Moskva, RU; [1]South Kaz. State Univ., Shimkent, KZ) [481]

P3.12 Chemisorption treatment of flue gases produced by municipal solid waste incineration. ***Ya. Gumnitsky, Kh. Dereyko[1], Yu. Yatchyshyn[1]** (Tech. Univ. Czestochowa, PL; [1]Lviv Politechnic, UA) [829]

P3.13 On the estimation of efficiency of mass concentration fluctuations to mass transport enhancement in multicomponent turbulent media. ***L. Broniarz-Press, V. Press, J. Szymanowski** (Poznan Univ. Technol., PL) [192]

P3.14 Steady-state behavior of an industrial azeotropic distillation column. **R. R. Rocha, J. H. P. Brooman[1], L. G. S. Vasconcelos,**

***R. P. Brito** (UFP, Campina Grande, BR; [1]OOP Petroquím., Alagos, BR) [577]

P3.15 Continuous distillation in columns with two flows of feed. **S. A. Reshetov** (Karpov Inst. Phys. Chem., Moskva, RU) [899]

P3.16 Ozone - water mass transfer coefficients. Analytical methodologies for its determination. ***A. Abad, S. C. Cardona, J. I. Torregrosa, J. Navarro-Laboulais** (Tech. Univ. Valencia, ES) [231]

P3.17 Mathematical modelling of a rectification process from positions of the system approach. ***G. N. Semenov, Yu. A. Komissarov, E. A. Semenova** (Mendeleev Chem. Technol. Inst. Russ., Moskva, RU) [29]

P3.18 The distillation column design from HETP using absorption data. ***E. Prokopová, V. Linek, T. Moucha, J. F. Rejl** (Inst. Chem. Technol., Praha, CZ) [605]

P3.20 Enzymatic reactions within a solvent resistant membrane. ***M. Becker, I. Lehmann, G. Malsch, T. Weigel, H.-G. Hicke** (GKSS-Forschungszentrum, Geesthacht, DE) [449]

P3.21 Pilot plant studies on biofiltration of waste gases from lacquer covered wire plant. **A. Wieczorek** (Tech. Univ. Szczecin, PL) [1030]

P3.22 Effects of gas flow rate and inlet concentration on styrene biofiltration performance. ***A. Wieczorek, B. Ambrozek** (Tech. Univ. Szczecin, PL) [1028]

P3.24 Application of knowledge discovery to the selection of the bioseparations. **S. Belaev, *A. Kraslawski, L. Nyström** (Lappeenranta Univ. Technol., FI) [821]

P3.25 A method of calculation of concentrations of microimpurities along the height of distillation column. ***N. A. Vyazmina, G. I. Litvinenko[1]** (Topaz Distillery, Pushkino, RU; [1]Karpov Inst. Phys. Chem., Moskva, RU) [1393]

P3.26 A case study in multicomponent distillation column targeting for energy savings. ***M. Mascia, G. Tola** (Univ. Cagliari, IT) [1420]

P3.27 Some aspects on the dynamic and control of semicontinuous, middle-vessel distillation columns. ***R. Monroy-Loperena, P. Flores** (Inst. Mex. Petrol., Mexico, MX) [1423]

P3.28 Dynamics of absorption in co-current packed column under periodically variable conditions. **H. Vychodilová, *V. Staněk, T. Akramov, V. Jiřičný** (Inst. Chem. Proc. Fundam., Praha, CZ) [1458]

P3.29 Up-to-date methods of designing packing elements for mass-exchange units. ***G. Diakonov, M. Farakhov, R. Takhavoutdinov, Kh. Yasaveev, M. Yasaveev** (Kazan State Technol. Univ., RU) [1498]

P3.30 Comparative study of adsorptive bubble separation processes: foam separation and solvent sublation. ***A. M. Toikka, O Lobacheva** (St. Petersburg State Univ., RU) [1481]

P3.31 Modified Handlos Baron dropside mass transfer model. ***D. Bastani, M. Abbaszadeh** (Sharif Univ. Technol., Tehran, IR) [1285]

P3 Posters — Tuesday
Separation processes

Extraction

P3.32 Fluid dynamics study in a column packed with SMVP with mass transfer. **A. Pérez, *H. Elman, H. Ávila, A. Viveros García** (Univ. Cent. Venezuela, Caracas, VE) [469]

P3.33 Simulation of mass transfer in fractal media on a sample of extraction (accounting interphase films formation) and membrane separation. **V. A. Vasilenko, *E. V. Shmakova, E. M. Koltsova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [572]

P3.34 Transient measurement for interfacial tension of n-alkanes-water-surfactant systems by the emergent drop technique. **S. Zeppieri, *A. López de Ramos** (Univ. Símón Bolívar, Caracas, VE) [887]

P3.35 Comparison of experimental rising single drop mass transfer coefficient with mathematical models in liquid-liquid extraction systems. ***S. Shokrollahzadeh, H. Bahmanyar[1]** (IROST, Tehran, IR; [1]Tehran Univ., IR) [1032]

P3.36 Determination of concentration-dependent diffusivities during solvent extraction of rosemary oil by finite differences method. ***S. Krim, C. Boutekedjiret[1], F. Bentahar** (USTHB, Algiers, DZ; [1]Ec. Nat. Polytech., El-Harrach, DZ) [1208]

P3.37 Solvent effects in extraction of alkohols and phenols. ***M. Jagiello, V. Prezhdo** (J. Kochanowski Univ., Kielce, PL) [196]

P3.38 Extraction of medical herbs. **R. S. Beric, *J. Savkovic-Stevanovic[1], B. M. Damnjanovic, P. R. Damnjanovic** (Zorka Res. Cent., Sabac, YU; [1]Fac. Technol. Metall., Beograd, YU) [1107]

P3.39 Recycling of used mineral insulating oil by extraction with N-methyl-2-pyrrolidone. ***J. Lukic, A. Orlovic, J. Jovanovic** (Tesla Elect. Eng. Inst., Beograd, YU) [558]

P3.40 Solvent extraction study of active compounds from thyme (Thymus vulgaris). ***M. Hadolin, Š. Stangler Herodež[1], M. Škerget[1], Ž. Knez[1], D. Bauman** (PINUS TKI, Rače, SI; [1]Univ. Maribor, SI) [882]

P3.41 Natural wax refining by liquid/liquid extraction. **A. García, *A. Heyberger[1], J. Procházka[1], R. Canete, M. Vinals** (ICIDCA, La Habana, CU; [1]Inst. Chem. Proc. Fundam., Praha, CZ) [226]

P3.42 Aroma compounds recovery from aqueous solutions using liquid-liquid extraction. ***M. H. Eikani, F. Golmohammad, A. Hojjati** (IROST, Tehran, IR) [964]

P3.43 Extraction of uranium from non-complexing medium in chloroform using polymethylene bis-(acylpyrazolols) as extractants. **M. Boufatit, *H. Hamid** (USTHB, Alger, DZ) [115]

P3.44 Extraction of indium from sulfuric acid solutions by mixtures of di-(2-ethylhexyl) phosphoric and caprylic acids. **Yu. Fleitlikh, G. L. Pashkov, E. S. Stoyanov[1], I. V. Makarov[2], A. I. Kholkin[3], *N. A. Grigoreva, L. K. Nikiforova, N. I. Pavlenko, G. V. Kolesnichenko** (Inst. Chem. Chem. Technol., Krasnoyarsk, RU; [1]Boreskov Inst. Catal., Novosibirsk, RU; [2]Inst. Gidrotsvetmet, Novosibirsk, RU; [3]Inst. Gen. Inorg. Chem., Moskva, RU) [117]

P3.45 Distribution of Fe (III), Cu (II), Ni (II) and Co (II) from chloride and sulphate solutions with binary extractants. **A. A. Voshkin, *V. V. Belova, A. I. Kholkin** (Inst. Gen. Inorg. Chem., Moskva, RU) [313]

P3.46 Red mud processing with scandium extraction. ***O. A. Komarov, G. A. Kolobov[1], K. E. Movsesov** (State Sci. Res. Des. Inst. Titan, Zaporozhnye, UA; [1]State Eng. Acad., Zaporozhnye, UA) [656]

P3.47 Effect of ultrasound on the extraction of principal substances from Centella asiatica (Linn.) Urban. ***H. Duriyabunleng, C. Chaichantipyuth, S. Wongkumchai** (Chulanlongkorn Univ., Bangkok, TH) [1291]

P3.48 Numeric flow simulation of a RDC extraction column. ***T. Haderer, C. Huber, R. Marr** (Tech. Univ. Graz, AT) [1295]

P3 Posters — Tuesday
Separation processes

Membrane processes

P3.49 Dialysis membranes on base modified to polyamide-6. ***O. Suberlyak, J. Koszkul, J. Melnyk** (Tech. Univ., Czestochowa, PL) [16]

P3.50 A novel solvent resistant membrane. ***H.-G. Hicke, I. Lehmann, G. Malsch, M. Ulbricht[1], M. Becker** (GKSS-Forschungszentrum, Geesthacht, DE; [1]ELIPSA GmbH, Berlin, DE) [386]

P3.51 Comparison of the performance of cellulose and polyamide NF membranes used in water softening. **M. Bodzek, *K. Wesolowska** (Silesian Univ. Technol., Gliwice, PL) [129]

P3.52 Synthesis and characterization of microporous membrane. ***N. Agoudjil, Z. Malek, A. Larbot[1]** (USTHB, Alger, DZ; [1]Ec. Sup. Chim., Montpellier, FR) [58]

P3.53 Separation properties of a polyethylene membrane and model calculations. **P. Izák, L. Bartovská, M. Šípek, P. Uchytil[1], *K. Friess, J. Machková, K. Habrdová** (Inst. Chem. Technol., Praha, CZ; [1]Inst. Chem. Proc. Fundam., Praha, CZ) [568]

P3.54 Sorption of organic vapors in polymer membranes. ***K. Friess, M. Šípek, V. Hynek, K. Bohatá, P. Izák[1], P. Sysel** (Inst. Chem. Technol., Praha, CZ; [1]Inst. Chem. Proc. Fundam., Praha, CZ) [1467]

P3.55 Interactions between a particle with an ion-penetrable charged membrane and a charged surface. **S. J. Tseng** (Tamkang Univ. Taipei, TW) [7]

P3.56 Charge effects in the cross-flow microfiltration of dispersed systems. ***D. Šmídová, P. Mikulášek, P. Velikovská** (Univ. Pardubice, CZ) [413]

P3.57 A common sense analysis of biofouling as vector optimisation tasks using equationless knowledge. ***M. Dohnal, H. Chmiel** (Tech. Univ. Brno, CZ) [1427]

P3.58 Fuzzy optimisation of membrane biofouling. ***M. Dohnal, H. Chmiel** (Tech. Univ. Brno, CZ) [1428]

P3.59 Effect of ionic sizes on critical coagulation concentration: particles covered by a charge-regulated membrane. ***J. P. Hsu, S. W. Huang** (Nat. Taiwan Univ., Taipei, TW) [2]

P3.60 Electrical interaction between two rod-like particles covered by an ion-penetrable membranes in a water-oil interface. ***J. M. Jiang, J. P. Hsu** (Nat. Taiwan Univ., Taipei, TW) [68]

P3.62 Study of limiting current densities in the electrodialysis process. ***V. Fára, A. Černín[1], V. Mejta, I. Jandová** (Inst. Chem. Technol., Praha, CZ; [1]MEGA as., Stráž pod Ralskem, CZ) [580]

P3.63 The preparation of high purity water using the electrodeionization process. ***D. Tvrzník, V. Mejta, I. Jandová, V. Fára** (Inst. Chem. Technol., Praha, CZ) [598]

P3.64 A study on the production of concentrated nitric acid by electroosmofiltration. ***U. Christian, M. B. Glebov, L. S. Gordeev** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [343]

P3.65 Ion-exchange membranes based on sulfonated poly(2,6-dimethyl-1,4-phenylene oxide) and on sulfonated poly(1,4-phenylene sulfide). **J. Schauer** (Inst. Macromol. Chem., Praha, CZ) [1263]

P3.66 Removal of DOC from surface water by means of microfiltration-activated carbon. **K. Konieczny, *G. Klomfas** (Silesian Univ. Technol., Gliwice, PL) [155]

P3.67 Organic solvents recovery in edible oil processing using nanofiltration. **A. García, *S. Álvarez, F. A. Riera, R. Álvarez, J. Coca** (Univ. Oviedo, ES) [542]

P3.68 Zinc recovery from chloride media by using semi-batch rotating film pertraction. **K. Dimitrov, *A. Saboni[1], S. Alexandrova[1], L. Boyadzhiev** (Inst. Chem. Eng., Sofia, BG; [1]Univ. Caen, FR) [798]

P3.69 Modeling of zinc recovery in RF pertraction. ***S. Alexandrova, K. Dimitrov[1], A. Saboni, E. Debray, L. Boyadzhiev[1]** (Univ. Caen, FR; [1]Inst. Chem. Eng., Sofia, BG) [701]

P3.70 Recovery of iron (III) from acidic chloride solutions by RF pertraction. **K. Dimitrov, S. Alexandrova, *A. Saboni[1], E. Debray[1], L. Boyadzhiev** (Inst. Chem. Eng., Sofia, BG; [1]Univ. Caen, FR) [780]

P3.71 The use of MF and UF membranes for the treatment of distiller's stillage. ***J. Uher, P. Chotěborská, K. Melzoch, M. Rychtera** (Inst. Chem. Technol., Praha, CZ) [1319]

P3.72 Recovery of proteins from stickwaters by ultrafiltration. **M. D. Suárez, *S. Álvarez, F. A. Riera, R. Álvarez** (Univ. Oviedo, ES) [557]

P3.73 Effect of transmembrane pressure on ultrafiltration behaviour of emulsified oily wastewater. ***X.-G. Hu, J. Mora[1], A. Koris[1], E. Bekassy-Molnar[1], G. Vatai[1]** (Hefei Univ. Technol., CN; [1]Szent Istvan Univ., Budapest, HU) [1345]

P3.74 Effects of excess sludge thickening with ultrafiltration process on anaerobic digestion. **E. Neczaj, *A. Tomska, M. Madela, C. Kozlowski** (Tech. Univ. Czestochowa, PL) [977]

P3.75 Enhanced cross-flow microfiltration of skim milk using a static mixer as turbulence promoter. ***D. M. Krstic, M. D. Caric, S. D. Milanovic, M. N. Tekic** (Univ. Novi Sad, YU) [82]

P3.76 Application of ultrafiltration and reverse osmosis to the treatment of the wastewater produced by the meat industry. **J. Bohdziewicz, *E. Sroka, E. Lobos** (Silesian Univ. Technol., Gliwice, PL) [1344]

P3.77 Membrane filtration for vegetable oil degumming. ***A. Koris, G. Vatai** (St. István Univ., Budapest, HU) [1189]

P3.78 Hybrid membrane process for removal of bacterial lipopolysaccharide from human serum proteins with chelating polymer supports coordinated with Ca2+, Mg2+ and Fe3+ ions. ***G. Tishchenko, K. Luetzow[1], M. Bleha, W. Albrecht[1]** (Inst. Macromol. Chem., Praha, CZ; [1]GKSS Forschungszentrum, Geesthacht, DE) [1265]

P3.79 Permeability of polymer membranes for organic vapors. ***K. Friess, M. Šípek, V. Hynek, K. Bohatá, P. Izák[1], P. Sysel** (Inst. Chem. Technol., Praha, CZ; [1]Inst. Chem. Proc. Fundam., Praha, CZ) [1466]

P3.80 Design and testing of the new flow permeameter. **L. Hendrich, V. Hynek, M. Šípek, *J. Přidal[1], A. Urban[1]** (Inst. Chem. Technol., Praha, CZ; [1]Mikropur sro., Hradec Králové, CZ) [1081]

P3.81 Cross-flow microfiltration with additives in the feed stream. ***J. Cakl, H. Jirankova, V. Machačka, I. Bauer** (Univ. Pardubice, CZ) [425]

P3.82 Apple juice ultrafiltration (UF) flux modeling using mass transfer model and optimization of diafiltration. ***M. Yazdanshenas, A. Tabatabaee-Nezhad, R. Roostaazad[1], A. Khoshfetrat** (Sahand Univ. Technol., IR; [1]Sharif Univ. Technol., Tehran, IR) [1457]

P3 Posters—Tuesday
Symposium on supercritical fluids

P3.83 Mathematical modeling of gel drying by extraction with supercritical carbon dioxide. ***A. Orlovic, S. Petrovic, D. Skala** (Fac. Technol. Metall., Beograd, YU) [500]

P3.84 Supercritical CO2 regeneration of activated carbon fiber adsorbed by heavy oil. **K. Chihara, *T. Yoshida, M. Takubo, T. Kawai** (Meiji Univ., Kawasaki, JP) [294]

P3.86 Development of a supercritical extraction process for vitamins recovering. ***E. B. Moraes, C. J. G. Vasconcelos, M. R. Wolf Maciel** (UNICAMP, Campinas, BR) [433]

P3.87 Integrated biocatalytic production processes using supercritical carbon dioxide as process medium. ***C. Bauer, T. Gamse, R. Marr** (Tech. Univ. Graz, AT) [1294]

P3.88 Modelling of the supercritical fluid extraction of anthocyanins with CO2 + cosolvents. ***C. Mantell, M. Rodríguez, E. Martínez de la Ossa** (Univ. Cádiz, ES) [1417]

P3.89 Supercritical fluid extraction and characterization of Urtica Dioica L. leaves pigments. ***M. Sajfrtová, H. Sovová, M. Bártlová, L. Opletal[1]** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]Charles Univ., Hradec Králové, CZ) [1340]

P3 Posters—Tuesday
Phase equilibria and fluid properties

P3.90 Revision of UNIFAC group interaction parameters to improve solubility prediction results for solvent-polymer systems. ***G. Wibawa, S. Takishima, Y. Sato, H. Masuoka** (Hiroshima Univ., Higashi-Hiroshima, JP) [1135]

P3.91 The second virial coefficient for Kihara model with embedded electrostatic interactions. ***J. Janeček, T. Boublík** (Charles Univ., Praha, CZ) [1471]

P3.92 Thermodynamic theory of three-critical points. **B. I. Gorovitz** (St. Petersburg State Univ., RU) [1473]

P3.93 The analytic determination of thermodynamic state parametres of the hydro ammonia solution at the saturation point. **I. L. Candin, *M. A. Candin** (Univ. Sibiu, RO) [1260]

P3.94 Evaluation of high-pressure vapour-liquid equilibrium data by means of gnostic theory. **Z. Wagner** (Inst. Chem. Proc. Fundam., Praha, CZ) [1196]

P3.95 Thermodynamics of ketone + chloroalkane binary mixtures in terms of DISQUAC model. ***D. Dragoescu, M. Teodorescu, A. Barhala** (Inst. Phys. Chem., Bucuresti, RO) [1415]

P3.96 New interaction parameters related to the group -OCOO- and alkane, cycloalkane and alcohols. Application to the ASOG and UNIFAC method for several ELV at 101.3 kPa. ***A. Rodríguez, J. Canosa, A. Domínguez, J. Tojo** (Univ. Vigo, ES) [1303]

P3.97 Simulation of the phase behaviour of the acetic acid-water-carbon dioxide system at elevated pressures. ***C. Pereyra, E. Martínez de la Ossa** (Univ. Cádiz, ES) [1422]

P3.98 A new model for predicting activity coefficients in aqueous solutions of amino acids and peptides. **S. Mortazavi-Manesh, C. Ghotbi, *V. Taghikhani** (Sharif Univ. Technol., Tehran, IR) [94]

P3.99 Selection of real components and their usage in the characterisation procedures of petroleum mixtures. ***E. Eckert, T. Vaněk** (Inst. Chem. Technol., Praha, CZ) [660]

P3.100 Liquid and vapor phase equilibrium of multi-component higher fatty acid mixtures. ***V. A. Plesovskikh, A. A. Bezdenezhnykh** (ZAO Nevskaya Cosmetica, St. Petersburg, RU) [28]

P3.101 Vapor-liquid equilibrium of ethanol + 2-methyl-1-butanol system. ***I. Santiago, C. Pereyra, E. Martínez de la Ossa** (Univ. Cádiz, ES) [1416]

P3.103 Quality validation study of the flash curves of coal tars. **G. Filipczak** (Tech. Univ. Opole, PL) [778]

P3.104 A new apparatus for high-pressure fluid phase equilibrium measurements at elevated temperatures. **K. Aim, *A. Babič** (Inst. Chem. Proc. Fundam., Praha, CZ) [1273]

P3.105 Limiting activity coefficients in binary mixtures of 1-alkanols and toluene. ***P. Vrbka, D. Rozbroj, V. Dohnal** (Inst. Chem. Technol., Praha, CZ) [1412]

P3.106 A new generator column apparatus to determine the temperature dependence of aqueous solubility of polynuclear aromatic hydrocarbons. **P. Dohányosová, *V. Dohnal, D. Fenclová** (Inst. Chem. Technol., Praha, CZ) [1511]

P3.107 Temperature dependence of limiting activity coefficient of 2-methyl-2-propanol in water. **D. Fenclová, V. Laštovka, V. Dohnal, *P. Vrbka** (Inst. Chem. Technol., Praha, CZ) [1469]

P3.108 Simple equations of state - simultaneous description of vapor pressure data and second virial coefficient data. ***V. Meistr, P. Voňka, J. Lovland[1]** (Inst. Chem. Technol., Praha, CZ; [1]Norwegian Univ. Sci. Technol., Trondheim, NO) [1309]

P3.109 Thermochemical modelling and oxygen solubility measurements in acidic zinc leaching solution. ***T. Kaskiala, J. Salminen** (Helsinki Univ. Technol., FI) [1479]

P3.110 Solubilities data of the Co+2, Ni+2, Cl-/H2O ; Co+2, Ni+2, SO42-/H2O systems using the quasi-isotermic thermometric technique. **Y. C. Nascimento, *C. P. Souza, K. K. P. Gomes** (UFRN, Lagoa Nova, BR) [787]

P3.111 Liquid - liquid equilibrium for four-component systems. **E. Graczová** (Slovak Univ. Technol., Bratislava, SK) [1435]

P3.112 Phase equilibrium in binary systems of polyethylene glycol and fatty acids. **V. N. Danilin, S. G. Shabalina, *L. V. Borovskaya, F. R. Shperber** (Kuban State Technol. Univ., Krasnodar, RU) [1414]

P3.113 Phase equilibrium "liquid-solid" and "solid-solid" in system palmitic acid-stearic acid-geneicosan. **V. N. Danilin, *A. V. Martsinkovskii, M. U. Gneushev, A. I. Degtyarov** (Kuban State Technol. Univ., Krasnodar, RU) [1413]

P3.114 Estimation of solid triacilglycerol quantities in hydrogenated fats by the method of dynamic calorimetry. **V. N. Danilin, S. P. Dotsenko, L. V. Borovskaya, *S. G. Shabalina** (Kuban State Technol. Univ., Krasnodar, RU) [1406]

P3.115 A thermodynamic model for reliable predicting of conditions on gas hydrate formation. ***R. Khodafarin, H. R. Khakdaman, H. R. Bakhtiari, K. Nazari** (Res. Inst. Pet. Ind., Tehran, IR) [1430]

P3.116 Phase equilibra in mixing fluorinated and hydrogenated nonionics surfactants. **A. Gherbi** (Univ. Boumerdes, DZ) [927]

P3.117 Delta Go of solid heterodimers. **I. Malijevská, *Z. Sedláková** (Inst. Chem. Technol., Praha, CZ) [1336]

P3.118 The evolution of liquid-liquid equilibrium diagram structure: theory and computation. ***M. A. Solokhin, A. V. Solokhin, V. S. Timofeev** (Lomonosov Moscow State Acad. Fine Chem. Technol., RU) [593]

P3.119 Experimental study on Lysozyme partitioning in aqueous two phase systems of polymer-salt system and effect of cosalt on partitioning. **A. Haghtalab, *B. Mokhtarani, G. Maurer[1]** (Tarbiat Modares Univ., Tehran, IR; [1]Univ. Kaiserslautern, DE) [461]

P3.120 Temperature dependence of excess molar volumes of the octane + 1-chloroalkane system. ***J. Linek, L. Morávková** (Inst. Chem. Proc. Fundam., Praha, CZ) [789]

P3.121 Excess molar volumes of binary and ternary liquid mixtures containing 2,2,2-trifluroethanol, water, acetone and n-alkanol at 298.15 and 101 kPa. **M. Sassi, *Z. Atik** (USTHB, Algiers, DZ) [1318]

P3.122 Density behaviour of carbon dioxide + water mixture at high pressures. ***M. Kato, D. Kodama** (Nihon Univ., Fukushima, JP) [837]

P3.123 Isobaric heating of annealed a-PMMA, simultaneous enthalpy and volume response. ***J. Hadač, P. Slobodian, P. Sáha** (Fac. Technol., Zlín, CZ) [490]

P3.124 Temperature and pressure initiation of volume relaxation in a-PMMA and a-PMMA/PEO amorphous blends. ***P. Slobodian, J. Hadač, P. Sáha** (Fac. Technol., Zlín, CZ) [172]

P3.125 Excess molar enthalpies of non-electrolyte binary solutions, experimental and thermodynamic models at 298.15 K. ***J. B. Parsa, H. Iloukhani** (Bu-Ali-Sina Univ., Hamadan, IR) [953]

P3.126 Methods for calculating some thermophysical parameters of the liquid saturated hydro ammonia solution. ***I. L. Candin, M. A. Candin** (Univ. Sibiu, RO) [815]

P3.127 Studies on the rheological properties of the solutions of anionic surfactant's mixtures. ***L. Broniarz-Press, I. Poltorak** (Poznan Univ. Technol., PL) [197]

P3.128 Interfacial tension experimental values for alkanes+water-NaCl solutions. **S. Zeppieri, *A. L. López de Ramos** (Univ. Símón Bolívar, Caracas, VE) [860]

P3.129 Relaxation process at conductive poly(thiophene) and its poly(alkyl) derivatives: kinetics of electrochemical doping. ***A. Buzarovska, L. Arsov** (Univ. Kiril Metodij, Skopje, MK) [984]

P3.130 Separation of low molecular weight fractions of polythiophene and its derivatives by HPLC method. ***A. Buzarovska, I. Arsova, L. Arsova** (Univ. Kiril Metodij, Skopje, MK) [985]

P3.131 A supramolecular model of eutectics. mechanisms of formation of nanostructures in alloys. ***V. S. Pervov, E. V. Makhonina, Zh. V. Dobrokhotova, I. D. Mikheikin[1], Yu. A. Zavrazhnov[2]** (Inst. Gen. Inorg. Chem., Moskva, RU; [1]State Univ. Env. Eng., Moskva, RU; [2]Voronezh State Univ., RU) [262]

P3.132 Evaluation of some methods for calculation of the enthalpies of formation of silicates of calcium and barium. ***V. Taranenkova, G. Shabanova, A. Kozhanova** (Kharkiv Polytech. Inst., UA) [952]

P3.133 The analytic determination of thermocaloric parametres - enthalpy and entropy - of the hydro ammonia solution. **I. L. Candin, I. Vonica, *M. A. Candin** (Univ Sibiu, RO) [1470]

P3.134 Solubility measurement of acid gases in ethanolamine solutions. **J. Alaei, *M. Tajerian, M. Mehrabi** (NIOC, Tehran, IR) [1518]

P3 Posters—Tuesday
Symposium on micro- and mesoporous materials

P3.135 Application of association theory to prediction of water vapor adsorption isotherm on activated carbon. ***J. Nastaj, K. Giza** (Tech. Univ. Szczecin, PL) [1084]

P3.136 Research and mathematical modeling of titania nanoparticles production via sol-gel technology. ***A. Yu. Racina, I. Bobrikov, S. E. Muhtarova, E. M. Koltsova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [561]

P3.137 Textural properties of porous solids from liquid expulsion permporometry. ***O. Šolcová, P. Uchytil, P. Schneider** (Inst. Chem. Proc. Fundam., Praha, CZ) [589]

P3.138 Synthesis and characterisation of SAPO-11 by varying silica sources and investigation of catalytic property in isomerization of 1-butene to iso-butene. ***N. Kumar, V. Nieminen, J. I. Villegas, T. Salmi, D. Yu. Murzin, E. Laine[1]** (Abo Akad. Univ., FI; [1]Turku Univ., Abo, FI) [583]

P3.139 Synthesis and application of smart mesoporous silica fibers. ***G. Telbiz, O. Shvets, V. Kovalenko, E. Bliznjuk, V. Il'in** (Inst. Phys. Chem., Kyiv, UA) [582]

P3.140 Pore size distribution in nanoporous silica for low k dielectrics. ***S.-H. Hung, J.-P. Hsu, W.-C. Chen** (Nat. Taiwan Univ., Taipei, TW) [69]

P3.141 Mathematical simulation of the process of carbon nanotubes obtaining. **I. S. Nenaglyadkin, S. Yu Tsareva, E. G. Rakov, E. V. Zharikov, *E. M. Koltsova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [502]

P3.142 Protective diffusion coatings on basis of silicon and niobium alloyed by chromium. **V. F. Loskutov, I. S. Pogrebova, *C. V. Iantsevitch, T. V. Loskutova, M. N. Bobina** (Nat. Tech. Univ., Kyiv, UA) [710]

P3.143 Advantages and limitations of the positron method of pore characterization. ***T. Goworek, B. Jasinska, J. Wawryszczuk, R. Zaleski** (M. Curie-Sklodowska Univ., Lublin, PL) [121]

P3.144 Hydrogen peroxide in the inorganic supramolecular ensembles. ***T. A. Tripol'skaya, G. P. Pilipenko, I. V. Pokhabova, E. G. Ippolitov** (Inst. Gen. Inorg. Chem., Moskva, RU) [143]

P3.145 Adsorption of organics from aqueous solutions on microporous carbons. ***A. Deryło-Marczewska, A. W. Marczewski, J. Goworek** (M. Curie-Sklodowska Univ., Lublin, PL) [392]

P3.146 Numerical modeling of binary adsorption equilibria of organic compounds and water on activated carbon. ***J. Nastaj, M. Wasik** (Tech. Univ. Szczecin, PL) [1090]

P3.147 Impregnated carbons prepared with olive stones to reduce atmospheric emissions associated to soil remediation. **M. C. M. Alvim Ferraz, *C. M. Todo-Bom Gaspar** (Univ. Porto, PT) [1341]

P3.148 Influence of hypercrosslinking on absorption and absorption in/on S-DVB polymers. **P. Veverka, *K. Jeřábek** (Inst. Chem. Proc. Fundam., Praha, CZ) [1520]

P3.149 Third-order nonlinear properties of Au nanoparticles embedded in ZrO2 mesoporous thin films. **W. Huang, *H. Arizpe-Chavez[1], G. Ma[2], J. Menxi[2], S. Quian[2], J. Shi** (Shaghai Inst. Ceram., CN; [1]Univ. Sonora, Hermosillo, MX; [2]Fundan Univ., Shaghai, CN) [1288]

P3 Posters — Tuesday
Separation processes

Adsorption and ion exchange

P3.150 Ion exchange processes for ultrapurification. Microcolumn method for the study of kinetics of film-diffusion-limited ion exchange. ***I. Monzie, L. Muhr, G. Grévillot** (ENSIC, Nancy, FR) [1093]

P3.151 Ordered mesoporous silica materials - porosity investigations and adsorption properties. ***J. Goworek, A. Deryło-Marczewska, A. Borówka** (M. Curie-Sklodowska Univ., Lublin, PL) [230]

P3.152 Adsorption equilibria of acetone, methanol, benzene, and their binary and ternary mixtures on activated carbon. ***B. Ambrozek, M. Jablonski** (Tech. Univ. Szczecin, PL) [1026]

P3.153 Modelling of volatile organic compounds (VOCs) concentration in gaseous streams by thermal swing adsorption (TSA) process. ***B. Ambrozek, J. Lachowska** (Tech. Univ. Szczecin, PL) [1029]

P3.154 Desorption of CH4 from coals in correlation to the selective sorption of CO2 and CH4. **G. Ceglarska-Stefanska, *K. Zarebska** (Univ. Min. Metall., Kraków, PL) [965]

P3.155 Drying of air by adsorption using confined fluidization technique. ***P. Zabierowski, B. Buczek** (Univ. Min. Metall., Kraków, PL) [903]

P3.156 Investigations of activated carbon heating by electromagnetic induction. ***F. Moskal, J. Nastaj** (Tech. Univ. Szczecin, PL) [699]

P3.158 Prediction of binary adsorption equilibrium of organic compound and water vapour on activated carbon. **M. Jablonski, *B. Ambrozek** (Tech. Univ. Szczecin, PL) [1534]

P3.159 Improvement efficiency of electrothermal activated carbon heating. Application to desorption process. **D. Downarowicz, *J. Nastaj** (Tech. Univ. Szczecin, PL) [1086]

P3.161 Application of carbon molecular sieves for separation of methane-nitrogen mixture by adsorption technique. **M. Balys, B. Buczek, *P. Zabierowski** (Univ. Min. Metall., Krakow, PL) [1396]

P3.162 Adsorptive drying of n-butanol. **E. Gabrus, *B. Ambrozek** (Tech. Univ. Szczecin, PL) [1395]

P3.163 Adsorption of Cr (VI) on chelated chitosan beads. **R. Zarzycki, *W. Sujka, M. Dorabialska, Z. Modrzejewska** (Tech. Univ. Lodz, PL) [1394]

P3.164 Separation of gases by selective adsorption on carbon molecular sieves. ***V. Stanciu, E. David, A. Nicolae, C. Sisu** (Nat. Res. Dev. Inst. Cryog. Isotop. Technol., Valcea, RO) [1357]

P3.165 Sorption extraction of platinum metals by carbonaceous materials of various pore structure and surface chemistry from technological solutions. ***S. S. Stavitskaya, T. P. Petrenko, V. M. Vikarchuk, T. I. Mironyuk** (Inst. Sorp. Probl. Endoecol., Kyiv, UA) [1]

P3.166 Research of the mechanism, interaction of heavy metals with mica-similar a sorbent. **E. V. Samarkina** (Irkutsk State Tech. Univ., RU) [712]

P3.167 Phase distribution in a co-current gas-liquid downward flow through a packed bed. ***A. Koudil, C. Boyer, G. Ferschneider** (Inst. Fr. Pet. Vernaison, FR) [1283]

P3 Posters — Tuesday
Separation processes

Crystallisation

P3.168 Application of neural network models and laser diffraction in the monitoring of crystallization processes. ***R. Guardani, R. S. Onimaru, C. A. O. Nascimento** (Univ. Sao Paulo, BR) [1004]

P3.169 Transformation of the aggregate and agglomerate units into amorphous SiO2 precipitate during the crystallization process. ***S. Bogoevski, D. Burevski** (Fac. Technol. Metall., Skopje, MK) [259]

P3.170 Effect of mixing and flocculation time onto flocculation kinetics and flocculent dosage. ***R. Šulc, P. Ditl** (Czech Tech. Univ., Praha, CZ) [445]

P3.171 Effect of mixing on the agglomeration of barium oxalate in an MSMPR crystallizer. **Pao-Chi Chen** (Lunghwa Univ. Sci. Technol., Taoyuan, TW) [1174]

P3.172 Crystallisation degree change for mouldings and its influence on quality at extreme parameters of injection. ***J. Koszkul, P. Postawa, O. Suberlyak** (Tech. Univ. Czestochowa, PL) [1292]

P3.173 Synthesis and crystallization of Li2O-Al2O3-TiO2-SiO2 glasses. **D. Gavrilovski** (Sartid Inst. Metall., Smederevo, YU) [1376]

P5 Posters — Wednesday
Chemical engineering education

P5.1 Real-time applications in Windows NT. ***V. Vašek, M. Bližňák, D. Janáčová** (Tomas Bata Univ., Zlín, CZ) [1313]

P5 Posters — Wednesday
Computer aided process engineering

P5.2 Application of neural network modelling for product quality management. ***M. Carsky, O. Mikus[1], A. Singh[2]** (Univ. Durban-Westville, ZA; [1]Private Consultant, Modderfontein, ZA; [2]Univ. Natal, Durban, ZA) [979]

P5.3 Identification of an evaporator unity by neural networks. ***A. J. De Assis, R. Maciel Filho[1]** (UNIOESTE, Toledo, BR; [1]UNICAMP, Campinas, BR) [24]

P5.4 Predictive control of an evaporator unity by neural networks. ***A. J. De Assis, R. Maciel Filho[1]** (UNIOESTE, Toledo, BR; [1]UNICAMP, Campinas, BR) [74]

P5.5 Dynamic mathematical model for freeze drying process. ***E. A. Boss, N. A. Costa, R. Maciel Filho, E. C. V. Toledo** (UNICAMP, Campinas, BR) [95]

P5.6 Integrated process modeling and optimization system for production of metal cutting fluids. **A. I. Chulok, *S. I. Mitritchev** (not given, RU) [145]

P5.7 Object-oriented artificial intelligence system for drying process flowsheet design. **N. V. Menshutina, M. N. Poutchkov, *S. V. Goncharova, A. V. Vetrov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [191]

P5.8 The effect of parameter settings on the performance of simulated annealing/simplex optimization method. ***J. M. Jezowski, G. Poplewski, A. Jezowska, R. Sloma** (Rzeszów Univ. Technol., PL) [215]

P5.9 Automating monitoring of research by means of Database Management System (DBMS). ***A. V. Vetrov, E. O. Lebedev, N. V. Menshutina, V. A. Kolesnikov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [251]

P5.10 A nonlinear predictive control strategy using multiple models. **H. Zhuang, *M.-S. Chiu** (Nat. Univ. Singapore, SG) [260]

P5.11 Modern databases as information source for pharmaceutical companies. **V. T. Meshcheryakova, *V. J. Mishina, V. N. Menshutina, V. O. Makarova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [283]

P5.12 Activated sludge modelling software. **D. Salazar, J. Henríquez J. [1], B. Ortega[1], *R. Sciamanna** (Univ. Cent. Venezuela, Caracas, VE; [1]HO Ingeniería, Valencia, VE) [391]

P5.13 Chaos in chemical systems and chaos control. ***E. Yu. Kortchagin, E. V. Zharikov, E. M. Koltsova, L. S. Gordeev** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [350]

P5.14 System identification of a distillation column. **A. M. Mehrabani Zeinabad** (Isfahan Univ. Technol., IR) [375]

P5.15 A detailed deterministic model for three-phase slurry reactors: evaporation of the reagents and refrigerant fluid. ***E. C. Vasco de Toledo, R. Maciel Filho** (UNICAMP, Campinas, BR) [381]

P5.16 A reverse-flow reactor with an injection of a cold gas. **J. Thullie, *M. Kurpas** (Silesian Univ. Technol., Gliwice, PL) [388]

P5.17 Development of intellectual information system for evaluation of the economic efficiency of chemical technology equipment in the terms of tenders. **I. N. Dorokhov, V. V. Menshikov, E. A. Nikulina, *E. A. Surzhikov, E. A. Spitsina** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [435]

P5.18 Development of knowledge base for intellectual information system for evaluation of the economic efficiency of chemical technology equipment in the terms of tenders. **I. N. Dorokhov, V. V. Menshikov, E. A. Nikulina, E. A. Surzhikov, *E. A. Spitsina** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [436]

P5.19 Fuzzy-neuro-genetic modeling and control of flue gas emissions in FBC process. ***Ž. Cojbašić, M. Stojiljković, L. Cojbašić, D. Ristić** (Fac. Mech. Eng., Nis, YU) [471]

P5.20 Genetic algorithms as a tool for optimization of an industrial reactor of cyclehexanol production. ***I. R. S. Victorino, R. Maciel Filho** (UNICAMP, Campinas, BR) [474]

P5.21 Investigation of solid wood impregnation with acetic anhydride by mathematical modelling. ***A. Aboltins, A. Morozovs** (Latv. Univ. Agric., Jelgava, LV) [489]

P5.22 Modeling and simulation of sodium beta-alaninate synthesis using dedicated software packages. ***C. Calin, S. Agachi[1]** (Terapia SA, Cluj-Napoca, RO; [1]Babes-Bolyai Univ., Cluj-Napoca, RO) [511]

P5.23 Modulated temperature oscillations in reverse-flow reactors. **J. Thullie, *A. Kocur, A. Gierczycki** (Silesian Univ. Technol., Gliwice, PL) [523]

P5.24 Neural networks in odour measurements. **J. Kosmider, *M. Zamelczyk-Pajewska** (Tech. Univ. Szczecin, PL) [527]

P5.25 Object-oriented modeling environment for chemical processes. **N. V. Menshutina, *M. N. Poutchkov, A. V. Vetrov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [539]

P5.26 Program to design wastewater treatment plants. **A. Castro, J. Henríquez J. [1], B. Ortega[1], *R. Sciamanna** (Univ. Cent. Venezuela, Caracas, VE; [1]HO Ingeniería, Valencia, VE) [555]

P5.27 The automated integrated system of processing, representing and retaining of the information for quality management in chemical technology. **A. F. Egorov, I. B. Shergold, *Yu. V. Gololobov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [590]

P5.28 The informational technology of the quality control and the security of products. ***J. Gordeeva, Yu. Ivashkin** (State Univ. Appl. Biotechnol., Moskva, RU) [673]

P5.29 Expert system for multiproduct paint-materials manufacturing. **V. V. Menshikov, L. S. Gordeev, *A. E. Bykov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [693]

P5.30 A decomposition of MISO type objects using an inference break-up method. **E. Rój** (Inst. Naw. Sztucz., Pulawy, PL) [728]

P5.31 Pilot 3-D simulation of the temperature field of the ceramic material EUCOR. **J. Heger, *F. Kavička, B. Sekanina, J. Štětina, P. Ramík** (Tech. Univ., Brno, CZ) [875]

P5.32 The program following control of a dynamic system using neural networks. **E. Rój** (Inst. Naw. Sztucz., Pulawy, PL) [793]

P5.33 Graphical diagrams system for making decisions under investigation of chemical objects by experimental-statistical modelling method. ***G. A. Statyukha, A. G. Petran** (Nat. Tech. Univ., Kyiv, UA) [907]

P5.34 The computer analysis of scientific organizations innovational potential in chemical industry on an example of CALS-technologies introduction. ***A. M. Bessarabov, T. A. Safonova, V. P. Efimova, A. V. Avseev** (IREA, Moskva, RU) [997]

P5.35 Simulation and optimization of the T-100 X tower in the PVAY-2 vacuum distillation plant in the Amuay refinery. ***H. Elman, G. Guevara** (Univ. Cent. Venezuela, Caracas, VE) [1083]

P5.36 SHAHAB-PC based simulator for prediction of furnace run length for the pyrolysis of hydrocarbons (ethane to naphtha). **J. Towfighi, M. Sadrameli, R. Karimzadeh, *A. Niaei, M. Mofrahi, B. Mokhtarani, G. Saedi, S. Hosseini, M. Karimaei** (Tarbiat Modares Univ., Tehran, IR) [1136]

P5.37 Mathematical modelling of pullulan biosynthesis. ***S. B. Stojanovic, V. Veljkovic, I. Mladenovic** (Fac. Technol., Leskovac, YU) [1302]

P5.38 Optimization-based tuning of PID controllers. Cascade systems. **C. F. Alfano Neto, *M. Embirucu[1]** (PROPET S. A., Camacari, BR; [1]UFBA, Salvador, BR) [1304]

P5.39 Optimization-based tuning of PID controllers. Multi-loop systems. **C. F. Alfano Neto, *M. Embirucu[1]** (PROPET S. A., Camacari, BR; [1]UFBA, Salvador, BR) [1305]

P5.40 Phenomenological and empirical modeling and simulation of an industrial C3 splitter using real plant data. **N. Jesus, R. Maciel Filho, *M. Embirucu** (UFBA, Salvador, BR) [1306]

P5.41 Real implementation and economic benefits through control of an industrial propylene/propane distillation column. **N. Jesus, R. Maciel Filho, *M. Embirucu** (UFBA, Salvador, BR) [1307]

P5.44 Computer aided integration of the reforming section of an ammonia plant. ***P. Flores, R. Monroy-Loperena** (Inst. Mex. Petrol., Mexico, MX) [1421]

P5.45 Adaptive control of centrifugal compressors. ***F. Laaouad, H. Fekhar, R. Zaamoum** (Univ. Boumerdes, DZ) [1444]

P5.46 Finding the best operating conditions of carbon dioxide production from acidic natural gas. ***F. Simon, Z. Csermely, A. Vago[1]** (Res. Inst. Chem. Proc. Eng., Veszprém, HU; [1]Hung. Oil Gas Comp., Kiskunhalas, HU) [1346]

P5.47 Further results on natural iterative learning control of a process plant with unknown pure time-delays. **P. M. Lazarevic** (Fac. Mech. Eng., Beograd, YU) [1453]

P5.48 Interaction and disturbance propagation between process control loops. ***A. Benhalla, A. Khelassi** (Univ. Boumerdes, DZ) [1477]

P5.49 Adaptive control for nonlinear objects using a neural network approach. **E. Rój** (Inst. Naw. Sztucz., Pulawy, PL) [1474]

P5.50 Artificial neural networks applied to the detection of olive oil adulteration with hazelnut oil. ***P. L. Benítez, L. Cabrera, J. Jiménez, E. Guadix[1], J. M. Benítez[1]** (Puleva Biotech S. A., ES; [1]Univ. Granada, ES) [1475]

P5.51 3D imaging of the texture evolution during convective drying of soft shrinkable materials. **A. Léonard, S. Blacher, P. Marchot, J.-P. Pirard, *M. Crine** (Univ. Liege, BE) [1482]

P5.52 Optimized operation conditions of perchlorine reactors of Shiraz petrochemical complex. **E. Ardeshiri, *J. Fathikalajahi, D. Mowla** (Shiraz Univ., IR) [1515]

P5 Posters — Wednesday PRES 2002

P5.54 GPEX: a generalized program for extinguishing systems. ***S. Pierucci, A. Sogaro, P. Delfante[1], M. Pinciroli[1], Y. Comi[1]** (Politecnico, Milano, IT; [1]Industrial Trading, Milano, IT) [218]

P5.55 A conceptual scheme for integrating natural gas steam-reforming into power and heat-producing plants. ***M. S. Safonov, B. N. Okunev, P. A. Zhatikov** (Lomonosov State Univ., Moskva, RU) [341]

P5.56 Analysis of sugar production flowsheets. Part I: Mathematical modelling. ***M. Ribas García, R. Hurtado Vargas, R. Diaz, C. De Armas Casanova, L. Rostgaard Beltran[1]** (ICIDCA, La Habana, CU; [1]Camilo Cienfuegos Sugar Fact., La Habana, CU) [398]

P5.57 HEN optimisation for crude oil distillation unit. **A. S. Azmi, *J. Klemeš, S. Ngatirin[1]** (UMIST, Manchester, UK; [1]PERTAMINA, Jakarta, ID) [477]

P5.58 Modelling and simulation of drying of in-bulk Amaranthus grains. **A. Tironi, D. E. Crozza, *A. M. Pagano** (Univ. Nac. Cent. Prov. B. A., Olavarría, AR) [517]

P5.59 Problems and perspectives of development of competitiveness of processing industry in exciting business conditions. ***V. P. Meshalkin, M. V. Goncharov, M. I. Dli, L. V. Fomchenkova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [1005]

P5.60 Energy conservation in a rectified spirit plant. **S. Biswas, *S. C. Roy, G. K. Biswas** (Jadavpur Univ., Calcutta, IN) [1049]

P5.61 Open and closed-loop optimization of a reactive distillation column. ***K. Dadhe, R. Gesthuisen, M. Völker, S. Engell** (Univ. Dortmund, DE) [1075]

P5.62 Applying constraints in mass exchange network. ***M. Amidpour, M. Gougol, D. Rashtchian[1]** (Iranian RD Cent. Chem. Ind., IR; [1]Sharif Univ. Technol., Tehran, IR) [127]

P5.63 Analysis of sugar production flowsheets. Part II: Software tool and case study. ***R. Hurtado Vargas, M. Ribas García, R. Diaz, C. De Armas Casanova, L. Rostgaard Beltrán[1]** (ICIDCA, La Habana, CU; [1]Camilo Cienfuegos Sugar Fact., La Habana, CU) [399]

P5.64 CFD modelling and design optimisation of an exhaust duct. ***J. Hajek, V. Kermes, L. Bébar, P. Stehlík** (Tech. Univ., Brno, CZ) [411]

P5.65 Compact unit for thermal treatment of off-gases in natural gas production - industrial application. **J. Oral, P. Cupr, *R. Štulíř[1], Z. Hajný, R. Puchýř, P. Stehlík[1]** (EVECO, Brno, CZ; [1]Tech. Univ., Brno, CZ) [416]

P5.66 Modeling of system for thermal processing of wastes including heat recovery. ***L. Havlen, M. Sponar, R. Puchýř[1], L. Bébar, J. Oral[1], P. Stehlík** (Tech. Univ., Brno, CZ; [1]EVECO, Brno, CZ) [521]

P5.67 Modelling of unit for thermal treatment of organic pollutants. ***V. Fabikovic, R. Štulíř, J. Oral[1], P. Stehlík** (Tech. Univ., Brno, CZ; [1]EVECO, Brno, CZ) [522]

P5.68 Removal of fluorides from watery solutions by means of chemical precipitation. **C. María de Jesus, *R. Sciamanna, F. Camacho, N. Ceci** (Univ. Cent. Venezuela, Caracas, VE) [560]

P5.69 Heat integration improvement for Eastern European countries sugar-plant. **L. L. Tovazhnyansky, P. O. Kapustenko, *L. M. Ulyev, S. A. Boldyryev[1]** (Kharkiv Polytech. Inst., UA; [1]SODRUGESTVO, Kharkiv, UA) [695]

P5.70 Optimisation of water consumption in an oil refinery. ***P. Iancu, V. Plesu, G. Constantinescu[1]** (Univ. Politehnica, Bucuresti, RO; [1]PETROM, Brazi, RO) [1250]

P5.71 Emission reduction through effective burner design. ***V. Kermes, J. Hájek, L. Bébar, J. Čaněk[1], J. Oral[2], P. Stehlík** (Tech. Univ., Brno, CZ; [1]Res. Inst. Chem. Equip., Brno, CZ; [2]EVECO, Brno, CZ) [632]

P5.72 Thermal processing of wastes using gasification. **L. Bébar, J. Granados, P. Dvořák, L. Ochrana, Z. Skala, P. Stehlík, *P. Martinák** (Tech. Univ., Brno, CZ) [678]

P5.73 Optimisation of vacuum system at vacuum distillation unit. ***J. Salek, J. Kohoutek, P. Stehlík** (Tech. Univ., Brno, CZ) [771]

P5.74 The improving of efficiency of industrial water use networks by example of soda refinery. ***G. Statyukha, A. Kvitka, J. Jezowski[1], A. Shakhnovsky** (Nat. Tech. Univ., Kyiv, UA; [1]Tech. Univ. Rzesow, PL) [954]

P5.75 Pressure as a further parameter of composite curves in energy process integration. ***V. Václavek, A. Novotná, J. Dedková** (Inst. Chem. Technol., Praha, CZ) [1043]

P5.76 Using waste reduction algorithm to assess pollution reduction for improvement of an oil refinery process. **V. Plesu, *P. Iancu, A. E. Plesu, G. Duca[1], A. Mitu[1]** (Univ. Politehnica, Bucuresti, RO; [1]Astra Romana, Ploiesti, RO) [1251]

P5.78 Using information technology methodologies for training in process engineering. **V. Plesu, *R. Onofrei, A. Bita, G. Duca[1], M. Matei[2]** (Univ. Politehnica, Bucuresti, RO; [1]Astra Romana, Ploiesti, RO; [2]Rafo S. A., Onesti, RO) [1239]

P5.79 Improving CO2 removal and energy saving for hydrogen plant. **G. Bumbac, *V. Plesu, G. Duca[1]** (Univ. Politehnica, Bucuresti, RO; [1]Astra Romana, Ploiesti, RO) [1245]

P5.80 Pollution from electrical power generation by gas turbines. ***M. B. Aboukheshem, A. A. S. Kadhum[1], M. Hasan[1]** (7th April Univ., Tripoli, LY; [1]Azzawiya Oil Ref. Co., LY) [995]

P5.81 Modelling and case study for a water and wastewater minimisation problem. **V. Plesu, *P. Iancu, N. Nutu, A. Mitu[1]** (Univ. Politehnica, Bucuresti, RO; [1]Astra Romana, Ploiesti, RO) [1238]

P5.82 Catalytic distillation modelling and simulation using HYSYS.Process(TM) environment. **G. Bumbac, *V. Plesu, V. Bologa, I. Muja[1], D. C. Popescu** (Univ. Politehnica, Bucuresti, RO; [1]PETROM, Ploiesti, RO) [1240]

P5.83 Cost evaluation for design of complex processes. **V. Plesu, *M. T. Bercaru, A. E. Woinaroschy, G. Bercaru, R. Zamfirache[1]** (Univ. Politehnica, Bucuresti, RO; [1]PETROM, Ploiesti, RO) [1241]

P5.84 Economic evaluation of a catalytic distillation process. **G. Bozga, *G. Bumbac, M. T. Bercaru, C. Marcov-Tacu, R. Zamfirache[1], D. C. Popescu** (Univ. Politehnica, Bucuresti, RO; [1]PETROM, Ploiesti, RO) [1243]

P5 Posters — Wednesday Separation processes

Filtration

P5.85 Fundamental study of sludge filtration and expression. ***D. Mihoubi, J. Vaxelaire[1], F. Zagrouba, A. Bellagi[2]** (Inst. Nat. Res. Sci. Tech., Hammam-Lif, TN; [1]ENSIG, Pau, FR; [2]Ec. Nat. Ing. Monastir, TN) [122]

P5.86 Thermodynamic analyses of sorption isotherms of viscoelastic cake. ***D. Mihoubi, F. Zagrouba, J. Vaxelaire[1], A. Bellagi[2]** (Inst. Nat. Res. Sci. Tech., Hammam-Lif, TN; [1]ENSIG, Pau, FR; [2]Ec. Nat. Ing. Monastir, TN) [123]

P5.87 Analysis of pressure drop in multi-compartment bag filter. ***H. Ikeno, Y. Tada[1], S. Hiraoka[1], Y. Shuto[1]** (Sinto Kogio, Kota, JP; [1]Nagoya Inst. Technol., JP) [305]

P5.89 Advanced means and development of filtering granular layers regeneration. ***S. V. Entin, N. M. Anzheurov, S. Yu. Panov[1], Yu. V. Krasovitskij[1], M. Al-Qudah[2]** (Semiluki Refract. Factory, RU; [1]Voronezh State Acad., RU; [2]Ministry Educ., JO) [1264]

P5 Posters—Wednesday
Fluid flow and multiphase systems

Fluid flow

P5.92 Development of device based on adsorption-semiconductor sensor purposed for determination of gas leaks from pipelines without unearthing. ***N. Maksymovych, V. Ruchko, O. Maksymovych, O. Kaskevych, N. Nikitina, O. Ripko, V. Yatsimirski** (Shevchenko Kyiv Univ., UA) [3]

P5.93 Drag coefficient of a porous particle: core-and-shell model. ***Y. H. Hsieh, J. P. Hsu** (Nat. Taiwan Univ., Taipei, TW) [71]

P5.94 Electrokinetic flow through an elliptical microchannel: effects of aspect ratio and electrical boundary conditions. ***C. Y. Kao, J. P. Hsu** (Nat. Taiwan Univ., Taipei, TW) [75]

P5.95 Heat transfer and hydrodynamics on a circular horizontal cylinder exposed to impinging two dimensional jet flow. **Yu. P. Semyonov, V. A. Belyakov, A. V. Khromenko, K. E. Paryghin, *V. O. Klimov** (Moscow State Univ. Forest, RU) [142]

P5.96 Degradation of the drag reducing polymer solutions during the flow through pumps. **L. Broniarz-Press, *J. Rozanski, A. Jur, S. Dryjer** (Poznan Univ. Technol., PL) [180]

P5.97 Flow of rheostable fluids through porous and fluidised bed. ***L. Broniarz-Press, P. Agacinski** (Poznan Univ. Technol., PL) [182]

P5.98 Flow of the surfactant's solutions in the both straigth and curved pipes. **L. Broniarz-Press, *J. Rozanski, S. Dryjer, S. Woziwodzki** (Poznan Univ. Technol., PL) [183]

P5.99 Maximal drag reduction regions for the flow of both polymer's and surfactant's solutions in straight pipes. ***L. Broniarz-Press, J. Rozanski** (Poznan Univ. Technol., PL) [187]

P5.100 Batcher-detector characteristic and residence time determination. **M. Dolata, *J. A. Michalski, D. Ziółkowski** (Inst. Phys. Chem., Warszawa, PL) [267]

P5.101 Flow analysis of immiscible fluids in packed beds. ***S. Chikh, H. Bouhadef, K. Bouhadef** (USTHB, Alger, DZ) [277]

P5.102 Solution of slow steady state flow problem in a constant width channel with taking into account curvature distinction of its boundaries. **L. M. Ulyev** (Nat. Tech. Univ., Kharkiv, UA) [332]

P5.103 Numerical simulation for two-phase flow velocity fluctuation. ***A. Matsuura, H. Nakamura, S. Hiraoka[1], Y. Tada[1], Y. Kato[1], M. Kojima[1]** (Daido Inst. Technol., Nagoya, JP; [1]Nagoya Inst. Technol., JP) [326]

P5.104 The characteristics of the emulsion produced using different methods. **J. Hapanowicz** (Tech. Univ. Opole, PL) [376]

P5.105 Effect of CO2 diffusion on wettability for hydrocarbon-water-CO2 systems in capillaries. **M. E. Aguilera, S. Zeppieri, *A. López de Ramos** (Univ. Simon Bolívar, Caracas, VE) [441]

P5.106 Estimation of liquid holdup in horizontal pipes for stratified gas-liquid flow. ***R. Anselmi, A. L. López de Ramos, D. González-Mendizabal** (Univ. Simon Bolívar, Caracas, VE) [451]

P5.107 Numerical modeling of turbulence in flow in impinging jet. ***J. Bartoszewicz, L. Boguslawski** (Poznan Univ. Technol., PL) [538]

P5.108 Gas holdup and oxygen transfer in viscous non-newtonian liquids having yield stress in bubble column. ***K. Terasaka, H. Shibata** (Keio Univ., Yokohama, JP) [544]

P5.109 Penetration of nanometer-sized particles through a laminar flow tube under low-pressure conditions. ***Y. Kuga, T. Fujimoto, A. Funabiki, D. Takeda** (Muroran Inst. Technol., JP) [546]

P5.110 Process of the extrusion in the unit of the special design. ***R. Fekete, I. Jaššo** (Slovak Univ. Technol., Bratislava, SK) [554]

P5.112 The effect of the dispersed to continuous phase viscosity ratio on flow past a fluid sphere. ***A. Saboni, S. Alexandrova, C. Gourdon[1]** (Univ. Caen, Saint Lo, FR; [1]ENSIACET, Toulouse, FR) [672]

P5.113 CFD simulation of processes in pulverised coal-fired boiler furnace. ***R. V. Filkoski, I. J. Petrovski, A. T. Nospal** (Univ. Sv. Kiril i Metodij, Skopje, MK) [684]

P5.114 Terminal velocity of non-spherical particles falling through a Carreau model liquid. ***I. Machač, R. Teichman, H. Bendová, B. Šiška** (Univ. Pardubice, CZ) [717]

P5.115 Annular two-phase downflow of gas-very viscous liquid. ***S. Witczak, L. Troniewski, G. Filipczak** (Tech. Univ. Opole, PL) [731]

P5.116 Flow pattern to three-phase air-water-oil flow in horizontal pipes. ***S. Witczak, B. Pendyk** (Tech. Univ. Opole, PL) [748]

P5.118 Transient rise velocity of air bubbles in water. ***S. C: P. Orvalho, J. M. T. Vasconcelos, S. S. Alves** (Inst. Sup. Téc., Lisboa, PT) [794]

P5.119 Fluid flow analysis with finite volume numerical model using power law and Sisko rheological models. ***M. Delic, J. Marn** (Fac. Mech. Eng., Maribor, SI) [849]

P5.120 Hydrodynamics of pulsing flow in three-phase reactors operated at elevated pressure. ***A. Szlemp, G. Bartelmus, D. Janecki[1]** (Inst. Chem. Eng., Gliwice, PL; [1]Univ. Opole, PL) [910]

P5.121 Hydrodynamics of three-phase solid bed reactor for foaming system. ***D. Janecki, G. Bartelmus, A. Szlemp[1]** (Univ. Opole, PL; [1]Inst. Chem. Eng., Gliwice, PL) [911]

P5.122 Experimental study of soil erosion by splash. **M. Bouhadef, *L. Mouzai** (USTHB, Algiers, DZ) [992]

P5.123 Verification of CFD model by stimulus response method. ***J. Thýn, M. Nový, P. Houdek, G. Borroto Portela[1], R. Žitný** (Czech Tech. Univ., Praha, CZ; [1]ISCTN, La Habana, CU) [999]

P5.124 Experimental study of surface gravity waves induced by an obstacle moving in a hydraulic channel. **T. Guendouzen, *M. Bouhadef, T. Zitoun** (USTHB, Algiers, DZ) [1000]

P5.125 Gravity capillary waves in a hydraulic channel. ***A. Younsi, M. Bouhadef, T. Guendouzen** (USTHB, Algiers, DZ) [1001]

P5.126 The influence of small tube diameter and inclination angle on flooding phenomena. ***A. A. Mouza, S. V. Paras, A. J. Karabelas** (Aristotle Univ., Thessaloniki, GR) [1022]

P5.127 A novel viscometric sensor for measuring the apparent wall slip effect. ***O. Wein, M. Večeř** (Inst. Chem. Proc. Fundam., Praha, CZ) [1057]

P5.128 Acoustics of bubble formation: a preliminary study. ***P. Dostal, M. Ruzicka[1], J. Drahoš[1], K. Wichterle** (Tech. Univ. Ostrava, CZ; [1]Inst. Chem. Proc. Fundam., Praha, CZ) [1068]

P5.129 Effect of surface active agents on flow regime transition in bubble columns. **P. Mena, *M. Ruzicka[1], J. Drahoš[1], J. Teixeira[2], F. Rocha** (Univ. Porto, PT; [1]Inst. Chem. Proc. Fundam., Praha, CZ; [2]Univ. Minho, Braga, PT) [1070]

P5.130 Effect of viscosity on flow regime transition in bubble columns. **P. Mena, *M. Ruzicka[1], J. Drahoš[1], J. Teixeira[2], F. Rocha** (Univ. Porto, PT; [1]Inst. Chem. Proc. Fundam., Praha, CZ; [2]Univ. Minho, Braga, PT) [1071]

P5.131 Staged bubble columns with hydrophones and high-speed video. **V. Hoeller, *M. Ruzicka[1], A. Renken, J. Drahoš[1]** (Swiss Fed. Inst. Technol., Zürich, CH; [1]Inst. Chem. Proc. Fundam., Praha, CZ) [1077]

P5.132 High-speed video images of hydrodynamic interactions in bubbly flow. ***D. Bröder, M. Ruzicka[1], J. Drahoš[1], M. Sommerfeld** (Martin-Luther-Univ., Halle-Wittenberg, DE; [1]Inst. Chem. Proc. Fundam., Praha, CZ) [1080]

P5.133 A new model viscoelastic liquid based on water-soluble polymers. ***J. Tihon, V. Tovčigrečko** (Inst. Chem. Proc. Fundam., Praha, CZ) [1148]

P5.134 A comparison of two numerical modelling approaches for the simulation of particle dispersion in turbulent mixing layer. ***L. Li, X. Yang, J. Wood[1]** (Univ. Paisley, UK; [1]Univ. Strathclyde, Glasgow, UK) [1216]

P5.135 Modelling of phenomena occurred during moulding process by means of Polyflow program. ***J. Koszkul, K. Szczepanski, O. Suberlyak** (Tech. Univ. Czestochowa, PL) [1293]

P5.136 Light particle - liquid interaction in an inverse fluidized bed. **B. Kawalec-Pietrenko, *J. Szczepaniak** (Tech. Univ. Gdansk, PL) [1363]

P5.137 The interest of Hydrocyclone equipped with underflow Grit pot to concentrate suspended matter in run-off water treatment. ***C. Puprasert, G. Hebrard, Y. Aurelle** (INSA, Toulouse, FR) [1365]

P5.138 Rheological properties of the blood of newborns. ***S. G. Etemad, T. Mousavand, S. A. Foroutan[1]** (Isfahan Univ. Technol., IR; [1]Univ. Shahid Behesti, Tehran, IR) [1375]

P5.139 Numerical simulation of coastal structures impact in nearshore zone. ***M. C. Khellaf, M. Bouhadef** (USTHB, Algiers, DZ) [1379]

P5.140 Inter-phase momentum transfer in gas-solid flows. ***D. Kandhai, J. J. Derksen, H. E. A. Van den Akker** (Delft Univ. Technol., NL) [1404]

P5.141 Heterogeneous mass transfer models for gas absorption in two-phase systems. ***D. Wlodarczyk, H. Kierzkowska-Pawlak, R. Zarzycki** (Tech. Univ. Lodz, PL) [1405]

P5.142 Analysis of compression stations gas turbine functioning under the Saharian South Algerian conditions. **A. Slimane** (Univ. Boumerdes, DZ) [1419]

P5.143 Modelling of non-ideal injection in liquid chromatography. ***G. Grznarova, M. Polakovič, P. Ačai, T. Görner[1]** (Slovak Univ. Technol., Bratislava, SK; [1]CNRS/INPL, Vandoeuvre, FR) [1461]

P5.144 Study of thixotropic behaviour of potato starch with selected hydrocolloids. ***M. Grzesik, P. Ptaszek** (Acad. Agric., Kraków, PL) [1478]

P5 Posters—Wednesday
Fluid flow and multiphase systems

Mixing

P5.145 Mixing studies - the effect of non-Newtonian fluid behaviour. ***L. Slemenik Perše, M. Žumer** (Fac. Chem. Chem. Technol., Ljubljana, SI) [149]

P5.146 Characteristics and efficiency of screw agitators in a tube. **F. Rieger** (Czech Tech. Univ., Praha, CZ) [623]

P5.147 Local swell of surface by liquid macro-vortex in stirred vessel. ***M. Jahoda, K. Parůžek, V. Machoň** (Inst. Chem. Technol., Praha, CZ) [993]

P5.148 Energy dissipation in flocculation tank stirred by A310 impeller - study. ***R. Šulc, P. Ditl** (Czech Tech. Univ., Praha, CZ) [446]

P5.149 Momentum transfer in an agitated vessel equipped with an eccentrically located impeller. ***J. Karcz, M. Cudak** (Tech. Univ. Szczecin, PL) [1020]

P5.150 An efficiency of the heat transfer process in an agitated vessel equipped with a vertical tubular coil. ***J. Karcz, F. Strek, M. Major, M. Michalska** (Tech. Univ. Szczecin, PL) [1016]

P5.151 Investigation of heat transfer coefficient distribution on the tank wall for a flat-blade impeller. ***A. Niedzielska, C. Kuncewicz** (Tech. Univ. Lodz, PL) [519]

P5.152 Energy dissipation rate in the tank with self-aspirating impellers. ***A. Kania, C. Kuncewicz** (Tech. Univ. Lodz, PL) [319]

P5.153 Non-conventional construction of the impellers against the background of standard classification. **P. Wesolowski** (Poznan Univ. Technol., PL) [534]

P5.154 The stirring oscillation method for study of the bioprocess. ***A. Berzins, M. Rikmanis, U. Viesturs, M. Toma, B. Viskere** (Inst. Microbiol. Biotechnol., Riga, LV) [943]

P5.155 Homogenization in two- and three-phase multi-impeller stirred reactor. ***H. Majířová, M. Jahoda, V. Machoň** (Inst. Chem. Technol., Praha, CZ) [480]

P5.156 Research of mixing with the odered loading of components. ***V. Pershin, Yu Selivanov, O. Demin, V. Orlov** (Tambov State Tech. Univ., RU) [562]

P5.157 Hydrodynamics and morphology of filamentous bacteria in a stirred tank fermenter. **S. Groslambert, S. Blacher, *M. Crine** (Univ. Liege, BE) [1486]

P5.158 Oxygen transfer in mechanically agitated systems: with two liquid systems. ***D. Wlodarczyk, H. Kierzkowska-Pawlak, R. Zarzycki** (Tech. Univ. Lodz, PL) [1337]

P5 Posters—Wednesday Mixing of suspensions

P5.159 Suspension efficiency of axial impellers. ***T. Jirout, B. Kysela, F. Rieger, P. Ditl, R. Sperling[1], S. Jembere[1]** (Czech Tech. Univ., Praha, CZ; [1]Anhalt Univ. Appl. Sci., Köthen, DE) [669]

P5.160 Mixing of suspensions in the slender tanks. ***F. Rieger, E. Rzyski[1]** (Czech Tech. Univ., Praha, CZ; [1]Tech. Univ. Lodz, PL) [641]

P5.161 Experimental studies of the solid - liquid system in an agitated vessel with the no-standard baffles. ***J. Karcz, D. Wiech** (Tech. Univ. Szczecin, PL) [1017]

P5.162 Aggregation and breakage of solid particles in suspensions agitated in a vibrating mixer. **A. T. Gierczycki** (Silesian Univ. Technol., Gliwice, PL) [106]

P5.163 Effect of particle concentration on solid-liquid mass transfer coefficients in stirred vessels. ***F. Grisafi, F. Simone, A. Brucato, L. Rizzuti** (Univ. Palermo, IT) [1279]

P5.164 Synthesis and characterisation of CdS clusters and superclusters in A type zeolite. ***R. Ramírez-Bon, M. Flores-Acosta, R. Ochoa-Landín, H. Arizpe-Chavez[1], M. Soltelo-Lerma[1], F. F. Castillón-Barraza[1]** (Univ. Querétaro, MX; [1]Univ. Sonora, Hermosillo, MX) [1271]

P5.165 Ceramic fiber suspensions - continuum theory and practical issues. **W. Pabst** (Inst. Chem. Technol., Praha, CZ) [1369]

P5 Posters—Wednesday Fluid flow and multiphase systems

Fluidization

P5.167 Hydrodynamic behaviour of a gas-solid air-loop stripper. ***Liu Mengxi, Lu Chunxi** (Univ. Petrol., Beijing, CN) [184]

P5.168 Study of powder coating in fluidized bed. Consequences of the air-liquid injection on the hydrodynamic and thermal behaviour of a fluidised bed. ***R. Cherif, M. Hemati[1], C. Laguerie[1]** (EMP, Boumerdes, DZ; [1]ENSIGC, Toulouse, FR) [257]

P5.169 Residence time of gas in an organized fluidized bed. **M. Dolata, *J. A. Michalski, D. Ziółkowski** (Inst. Phys. Chem., Warszawa, PL) [290]

P5.170 Analysis of Pressure Fluctuations Feedback in Fluidised Beds. ***J. M. Aragón, D. Jiménez, M. C. Palancar** (Univ. Complutense, Madrid, ES) [306]

P5.171 Temperature distribution within the coal particle during drying in fluidized bed. ***M. S. Komatina, M. S. Ilic[1], D. K. Voronjec** (Fac. Mech. Eng., Beograd, YU; [1]Inst. Nucl. Sci. Vinča, Beograd, YU) [1256]

P5.172 Hydrodynamics of a conical spouted bed at high temperatures. ***M. J. San José, S. Alvarez, M. A. Izquierdo, R. Aguado, M. Olazar** (Univ. País Vasco, Bilbao, ES) [909]

P5.173 Particle trajectories and cycle times in spouted beds. ***M. J. San José, S. Alvarez, M. A. Izquierdo, R. Aguado, M. Olazar** (Univ. País Vasco, Bilbao, ES) [926]

P5.174 Conical spouted bed technology with internal devices for combustion of wood wastes. ***M. J. San José, S. Alvarez, M. A. Izquierdo, R. Aguado, M. Olazar** (Univ. País Vasco, Bilbao, ES) [898]

P5.175 Entrainment of fine particles from an agitated fluidized bed. ***A. Reyes, G. Molina** (Univ. Santiago de Chile, CL) [1445]

P5.176 The fountain in spouted beds. ***M. J. San José, S. Alvarez, M. A. Izquierdo, R. Aguado, J. Bilbao** (Univ. País Vasco, Bilbao, ES) [942]

P5.177 Magnetically stabilized circulating fluidized bed. **S. N. Chichbankar, A. Bhanarkar, S. K. Dahikar, D. B- Nagrale, *R. L. Sonolikar** (Laxminarayan Inst. Technol., Nagpur, IN) [762]

P5 Posters—Wednesday Heat transfer processes

P5.178 Turbulent double diffusion modelling in salt solar accumulations. **R. Musemic** (Univ. Sarajevo, BA) [1226]

P5.179 Numerical model of vacuum freeze drying of random solids at two-region contact-radiative heating. ***J. Nastaj, K. Witkiewicz** (Tech. Univ. Szczecin, PL) [1089]

P5.180 Mathematical modeling of biomaterials vacuum freeze drying at contact -microwave heating. **J. Nastaj, *K. Witkiewicz** (Tech. Univ. Szczecin, PL) [1087]

P5.181 Natural convection in a partially porous channel with localized heat sources. ***K. Bouhadef, S. Chikh** (USTHB, Algiers, DZ) [994]

P5.182 Parallel flow asymmetries in heat exchangers. ***R. Žitný, J. Thýn, P. Houdek** (Czech Tech. Univ., Praha, CZ) [983]

P5.184 Experimental study on convective coefficients in a slurry bubble column. **I. Quiroz, I. Herrera Delgado, *D. González-Mendizabal** (Univ. Simón Bolívar, Caracas, VE) [460]

P5.185 Design of experiments in the inverse drying problems. ***L. P. Kanevce, G. H. Kanevce, V. B. Mitrevski, Z. Z. Angelevski** (Kliment Ohridsky Univ., Bitola, MK) [838]

P5.186 An improved way of coupling between a mechanical heat pump and a thermo-chemical heat pump, in order to obtain a system with an increased efficiency of energy management. **R. Onofrei, *A. Bita** (Univ. Politehnica, Bucuresti, RO) [681]

P5.187 Temperature control in the induction furnace. **G. A. Dmitryev, *D. V. Prutensky, E. A. Prutenskaya** (Tver Tech. Univ., RU) [588]

P5.188 A simulation model for analysing the thermal behaviour of a solar convective dryer. ***S. Chemkhi, F. Zagrouba, C. Kerkeni, D. Mihoubi, A. Ballagi**[1] (Inst. Nat. Rech. Sci. Tech., Hammam Lif, TN; [1]Ec. Nat. Ing. Monastir, TN) [168]

P5.189 A numerical model that accounts for the coupling of the heat and mass transfer and the rheological behavior of a viscoelastic material. ***S. Chemkhi, D. Mihoubi, F. Zagrouba, A. Ballagi**[1] (Inst. Nat. Rech. Sci. Tech., Hammam Lif, TN; [1]Ec. Nat. Ing. Monastir, TN) [167]

P5.190 Install compact heat exchanger to replace shell and tube heat exchangers in platforming unit. ***M. A. Masri, N. Maachi** (Algerian Pet. Inst., Boumerdes, DZ) [26]

P5.191 Experimental study on Marangoni effect induced by heat and mass transfer. **G. Savoca, C. Caballero, E. Villafana, *M. E. Aguilera** (Univ. Símón Bolívar, Caracas, VE) [462]

P5.192 Estimation of influence of turbulent flow structure on heat transfer coefficient distribution on surface impinged by free jet. **L. Boguslawski** (Poznan Univ. Technol., PL) [450]

P5.193 A molecular quantum mechanism of natural convection heat transfer to a fluid with polar molecules. **G. Soare** (Univ. Politech., Bucuresti, RO) [384]

P5.194 Measurement of temperature fields using thermochromic liquid crystals. ***J. Vejražka, P. Marty**[1], **V. Sobolík** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]CEA, Grenoble, FR) [282]

P5.195 Contribution to the rational exploitation of the band brake of the drillig winch. **A. Benbrik** (Univ. Boumerdes, DZ) [272]

P5.196 Mass transfer at solid melting in solution. ***S. Petrescu, A. Bacaoanu** (Tech. Univ., Iasi, RO) [223]

P5.197 Local heat transfer coefficient at spherical particle melting. ***S. Petrescu, L. D. Horoba, C. Lisa** (Tech. Univ., Iasi, RO) [221]

P5.198 Numerical simulation of mixed convection flow and heat transfer in horizontal ducts. **K. Loubar, *Y. K. Benkahla** (USTHB, Algiers, DZ) [1253]

P5.199 Free convective mass transfer at inclined isosceles triangles. ***M Keppert, J. Krýsa, A. A. Wragg**[1] (Inst. Chem. Technol., Praha, CZ; [1]Univ. Exeter, UK) [1162]

P5.200 A study of transport phenomena in a dryer with immersed channels. ***K. Daoud, M. Daoud, H. Abchiche, Z. Djellab** (USTHB, Algiers, DZ) [1206]

P5.201 Mathematical model for swirl laminar flow with heat transfer. **V. Iacob, *D. C. Popescu** (PETROM, Ploiesti, RO) [1284]

P5.202 A heat transfer study on fins of various shapes. ***L. Oufer, F. Louni, A. Mouheb** (USTHB, Algiers, DZ) [1272]

P5.203 Analysis of thermal processes of steam boilers for fast steam production. ***M. Masic, M. Komatina**[1], **M. Ristivojevic**[1] (Milit. Tech. Inst., Beograd, YU; [1]Fac. Mech. Eng., Beograd, YU) [1269]

P5.204 Heat transfer coefficient in two-phase annular viscous liquid-inert gas flow. ***G. Filipczak, L. Troniewski, S. Witczak** (Tech. Univ. Opole, PL) [752]

P5.206 Vacum dryer for drying products of special purpose. **A. Petrovic, *A. Dedic**[1], **M. Spasojevic**[2] (Fac. Mech. Eng., Beograd, YU; [1]Fac. Forestry, Beograd, YU; [2]Thermo-energetic Plant N. Tesla, Obrenovac, YU) [1330]

P5.207 Analytical solution of forced convection of nonlinear viscoelastic fluids between parallel plates with moving boundary. **S. H. Hashemabadi, *S. G. Etemad**[1], **M. R. Golkar Naranji, J. Thibault**[2] (Amirkabir Univ. Technol., Tehran, IR; [1]Isfahan Univ. Technol., IR; [2]Univ. Ottawa, CA) [1374]

P5.208 The influence of a solute concentration level and electric field on mass transfer during droplet formation and motion in a liquid-liquid contactor. **T. Elperin, *A. Fominykh** (Ben-Gurion Univ. Negev, Beer-Sheva, IL) [1382]

P5.209 The application of quasichemical method of Stogrin-Hirschfelder for data correlation of thermal conductivity of inert gases at low temperatures. ***A. G. Shashkov, O. A. Kolenchits, N. A. Nesterov** (Inst. Heat Mass Transfer, Minsk, BY) [1433]

P5 Posters — Wednesday
Particulate solids

P5.210 A fundamental study of dry and wet grinding from the viewpoint of bending test with impact. ***Y. Kanda, N. Kotake, S. Sano** (Yamagata Univ., JP) [1056]

P5.211 Structural evolution and thermal stability of ball milled Ti-Al powders for different concentrations and milling time. ***F. J. Espinoza-Beltrán, J. Velázquez-Salazar, J. Morales-Hernández**[1] (IPN, Querétaro, MX; [1]Univ. Auton., Querétaro, MX) [1361]

P5.212 A qualitative dynamic model of an autogenous mill. **M. Dohnal, *A. Krejčí** (Tech. Univ. Brno, CZ) [1451]

P5.213 Influence of kernel size on wheat milling properties. ***D. Dziki, J. Laskowski** (Agric. Acad., Lublin, PL) [756]

P5.214 The problems of energy consumption in hammer mill for corn grain. **J. Kalwaj, *A. Mrozinski** (Univ. Technol. Agric., Bydgoszcz, PL) [961]

P5.215 The effect of the wetting parameters on the power demand during the drum granulation. ***A. Heim, T. Gluba, A. Obraniak** (Tech. Univ. Lodz, PL) [591]

P5.216 The effect of bed wetting conditions on the quality of a product obtained during drum granulation. **T. Gluba** (Tech. Univ. Lodz, PL) [337]

P5.217 The effect of process and equipment parameters on bulk density of the bed during drum granulation. **A. Heim, T. Gluba, *A. Obraniak** (Tech. Univ. Lodz, PL) [338]

P5.218 Plasma spraying enables spheroidisation of tungsten particles. ***V. Brožek, V. Dufek, K. Neufuss** (Inst. Plasma Phys., Praha, CZ) [1494]

P5.219 Manufacturing of a multicomponent mixture with usage of two-stage technology of feeding. ***V. Pershin, S. Barishnikova, A. Osipov, D. Filimonov** (Tambov State Tech. Univ., RU) [495]

P5.220 The contribution to solution of energetical aspect of particulate material mixing. ***Š. Gužela, M. Peciar, M. Juriga** (Slovak Univ. Technol., Bratislava, SK) [941]

P5.221 Attrition action of long granular materials in a ribbon blender. ***S. Masiuk, M. Kordas** (Tech. Univ. Szczecin, PL) [896]

P5.222 Separation of granular materials with use of centrifugal forces. ***P. G. Zouev, N. A. Yakovlev, S. S. Kalinichenko** (Kuban State Technol. Univ., Krasnodar, RU) [881]

P5.223 Research of batching of fibrous materials. ***P. G. Zouev, A. A. Gergel, A. V. Orlov** (Kuban State Technol. Univ., Krasnodar, RU) [878]

P5.224 Pressing of by-products at the grain processing enterprises. ***P. G. Zouev, A. V. Orlov, A. A. Gergel** (Kuban State Technol. Univ., Krasnodar, RU) [876]

P5.225 Determining solids flow rate for blow tank pneumatic conveying systems: an approximate method. **D. McGlinchey** (Caledonian Univ., Glasgow, UK) [15]

P5.226 Microscopic particle evaluation using an image analyser. ***E. Jirák, P. Povolný** (Inst. Chem. Technol., Praha, CZ) [1491]

P5 Posters — Wednesday Last minute submissions

P5.227 INTINT - Intelligent Column Internals for Reactive Separations. A novel design methodology for tailor-made column internals (EU GROWTH Project). ***A. Górak, E Kenig, P. Moritz[1], J. Klemes[2]** (Tech. Univ. Dortmund, DE; [1]Sulzer Chemtech AG, Winterthur, CH; [2]UMIST, Manchester, UK) [1529]

P5.228 Application of adaptive temperature control to an ethylene cracking pilot plant furnace. ***M. E. Masoumi, M. Sadrameli[1], A. Niaei[1]** (Islamic Azad Univ., Tehran, IR; [1]Tarbiat Modarres Univ., Tehran, IR) [1527]

P5.229 Heat and power production in acrylic acid process design. ***A. Goršek, P. Glavič** (Fac. Chem. Chem. Eng., Maribor, SI) [56]

P5.230 CFD analysis of the sailrail air bearing material handling system. ***J. Chung, M. S. Perera** (Ryerson Univ., Toronto Ont., CA) [12]

P7 Posters — Thursday Symposium on environmental engineering and management

P7.1 Removal of fluoride from industrial wastewater. **R. Aldaco, *J. A. Irabien** (Univ. Cantabria, Santander, ES) [781]

P7.3 Textile wastewater treatment by a photochemical process. ***I. Siminiceanu, M. Neamtu[1], A. Yediler[1], A. Kettrup[1]** (Tech. Univ. Iasi, RO; [1]Inst. Ecol. Chem., München, DE) [940]

P7.4 Cadmium removal from aqueous solutions by sunflower stalks: first results of kinetic and equilibrium studies. ***H. Benaissa, M. A. Elouchdi** (Univ. Tlemcen, DZ) [1105]

P7.5 Purification of laundry water with H2O2/UV. ***M. Simonič, S. Sostar Turk[1]** (Fac. Chem. Chem. Eng., Maribor, SI; [1]Fac. Mech. Eng., Maribor, SI) [1152]

P7.6 Rheological characteristics of sewage sludge conditioned with ultrasonic field. **J. B. Bien, *B. Matysiak, J. D. Bien** (Tech. Univ. Czestochowa, PL) [1025]

P7.7 Analysis of influence of the inflows in the active volume of reservoirs for the pollutant dispersion. **M. C. Palancar, *J. M. Aragón, F. Sánchez, R. Gil[1]** (Univ. Complutense, Madrid, ES; [1]Nucl. Sec. Counc., Madrid, ES) [619]

P7.8 Cleaner technologies for plating shops. **A. Nakonieczny, *M. Kieszkowski** (Inst. Prec. Mech., Warszawa, PL) [210]

P7.9 Solvent recovery from solvent containing wastewaters in the pharmaceutical industry. ***A. Kovacs, J. Dencs, G. Marton** (Univ. Veszprém, HU) [1171]

P7.10 Starch based environment-friendly flocculants. ***Z. Pikovszki, G. Nös, J. Dencs, G. Marton** (Univ. Veszprém, HU) [1172]

P7.11 A study about the quality of the atmospheric air of the Uberlandia city in Brazil. **E. A. Barbosa, R. M. Rodrigues, E. A. P. Lima, J. J. R. Damasceno, *M. A. S. Barrozo** (Fed. Univ. Uberlandia, BR) [799]

P7.12 Determination of diffusion coefficient of some organic high toxic substances by using diffusion tube. ***J. I. Bastic, S. Ivanovic, D. U. Skala[1]** (Inst. Yugosl. Milit., Beograd, YU; [1]Fac. Technol. Metall., Beograd, YU) [840]

P7.13 Methods and algorithmus of air-polluting source identification. **A. F. Egorov, T. V. Savitskaya, S. P. Dudarov, *A. S. Makarova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [922]

P7.14 Examples of aggressive components appearance in industrial areas. ***B. Varlakova, S. Varlakova** (Inst. Mat. Invest., Skopje, MK) [636]

P7.15 Kinetic study of cadmium biosorption from aqueous solutions by activated sludge: first experimental results and modelling. ***H. Benaissa, M. A. Elouchdi** (Univ. Tlemcen, DZ) [1109]

P7.16 Results from water treatment research by a new type of UV irradiation equipment. **K. Schöps, H. Bergmann, *K. Bouzek[1]** (Anhalt Univ. Appl. Sci., Köthen, DE; [1]Inst. Chem. Technol., Praha, CZ) [1255]

P7.17 The raw material influence on odour nuisance of phosphoric acid production. **J. Kosmider, *M. Zamelczyk-Pajewska** (Tech. Univ. Szczecin, PL) [599]

P7.18 Toxic emissions from waste oils burned in 102 kW boiler with atomizing burner. **V. Tydlitát, J. Janota[1], V. Pekárek, *M. Puncochar** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]Municpal Authority, Praha, CZ) [1157]

P7.19 Release and partition of selected alkali metals and heavy metals in pressurised substoichiometric combustion of coals. ***J. Čermák, K. Svoboda, M. Pohořelý** (Inst. Chem. Proc. Fundam., Praha, CZ) [1095]

P7.20 The improvement of activated sludge by static magnetic field. ***A. Tomska, M. Janosz-Rajczyk, E. Neczaj, M. Madela, L. Gadek** (Tech. Univ. Czestochowa, PL) [978]

P7.21 Recycling of mixed alkaline high-grade waste paper by enzymatic treatment. ***U. Viesturs, M. Eisimonte, T. Eremeeva, E. Eisimonte** (Latv. State Inst. Wood Chem., Riga, LV) [933]

P7.22 The possibilities of volatile fatty acids generation during co-fermentation of high starch organic wastes and sewage sludge - mesophilic versus thermophilic conditions. ***E. Wisniowska, M. Janosz-Rajczyk, I. Nowak, J. Wasinska** (Tech. Univ. Czestochowa, PL) [886]

P7.23 Genotoxic effects of selected methylammonium chlorides on Bacillus subtilis. **E. Grabinska-Sota, *E. Wisniowska[1]** (Silesian Univ. Technol., Gliwice, PL; [1]Tech. Univ. Czestochowa, PL) [850]

P7.24 Elimination of ammonium nitrogen from coke plant wastewater. **E. Sperczynska, *E. Wisniowska** (Tech. Univ. Czestochowa, PL) [845]

P7.25 Sorption of the ions heavy metal ions from wastewater. ***I. Dedenko, I. Samodumova, G. Telbiz[1], O. Shvets[1], P. Jaremov[1], V. I'Ilin[1]** (Sorption, Kyiv, UA; [1]Inst. Phys. Chem., Kyiv, UA) [574]

P7.26 Salt river monitoring through an empiric model. **C. R. M. Silva, R. S. Melo[1], *R. R. Souza** (UFS, Sao Cristovao, BR; [1]CDS, Brazília, BR) [565]

P7.27 Progresses in reactor development and application of a cascade moving particle bed reactor for the electrochemical treatment of process waters. **H. Bergmann, A. Rittel, *K. Bouzek[1], M. Paidar[1], A. S. Koparal[2]** (Anhalt Univ. Appl. Sci., Köthen, DE; [1]Inst. Chem. Technol., Praha, CZ; [2]Anadolu Univ., TR) [556]

P7.28 p-Toluenesulfonic acid abatement with ozone. **M. A. Miranda, A. M. Amat, A. Arques, S. Seguí, *F. Lopez** (Tech. Univ. Valencia, ES) [545]

P7.29 Reprocessing of depleted uranium hexafluoride. **K. Andreev, V. Galkin, A. Ivanov, O. Knyazev, *V. Seredenko, V. Shatalov, E. Shpectorov** (Russ. Res. Inst. Chem. Technol., Moskva, RU) [85]

P7.30 Effect of different metals commonly used as homogeneous catalysts on the oxygen consumption of active sludges: a respirometric study. **A. M. Amat, *A. Arques, A. Domenech, C. Gisbert, R. Vicente** (Tech. Univ. Valencia, ES) [443]

P7.31 An influence of selected technological processes on the content of heavy metals in textile products. ***M. I. Szynkowska, E. Leśniewska, T. Paryjczak, F. Rybicki** (Tech. Univ. Lodz, PL) [397]

P7.32 Air quality models for odour impact assessment. **P. Céntola, R. Del Rosso, M. Il Grande, A. N. Rossi, *S. Sironi** (Politecnico, Milano, IT) [393]

P7.33 Stoichiometry and kinetics of VFAs anaerobic degradation. ***K. Boltes, P. Letón, E. García Calvo** (Alcalá Univ., Alcalá de Henares, ES) [374]

P7.34 Ozonisation coupled with biological degradation for wastewater treatment: a mechanistically-based study. ***A. M. Amat, A. Arques, J. Bravo, H. Beneyto, A. Domenech, M. A. Miranda** (Tech. Univ. Valencia, ES) [365]

P7.35 Modelling of norm scale deposition in oil industry. **M. S. Hamlat, *H. Kadi[1], H. Fellag[1]** (Cent. Rech Nucl., Alger, DZ; [1]Univ. Mouloud Mammeri, Tizi-Ouzou, DZ) [362]

P7.36 Kinetics of FVA degradation in a fluidized bed reactor. ***A. Caro, L. Ocana, P. Letón** (Alcalá Univ., Alcalá de Henares, ES) [358]

P7.37 Biodegradable PHB composite material for food packaging. ***S. Muizniece-Brasava, L. Savenkova[1], A. B. Dzene[2], L. Dukalska** (Latv. Univ. Agric., Jelgava, LV; [1]Latv. Univ., Riga, LV; [2]Riga Tech. Univ., LV) [348]

P7.38 Ultrasonic influence on the phenol sorption process. **N. Komarova, *M. Sulman, E. Sulman** (Tver Tech. Univ., RU) [301]

P7.39 An electrochemical technology for antimony removal from waste acid systems. **H. Bergmann, A. S. Koparal[1], *K. Bouzek[2]** (Anhalt Univ. Appl. Sci., Köthen, DE; [1]Anadolu Univ., Eskisehir, TR; [2]Inst. Chem. Technol., Praha, CZ) [266]

P7.40 The research over butanol biodegradation in the bed of preselected pine tree bark in the range of unsteady-state working conditions. **M. Palica, *K. Chmiel** (Silesian Univ. Technol., Gliwice, PL) [245]

P7.41 Physiochemical treatment of final tannery wastewater effluent - A case study. Part I. ***A. I. Hafez, M. S. El-Manharawy, M. A. Khedr** (Nat. Res. Cent., Cairo, EG) [63]

P7.42 High purity silicon carbonthermal production: ecological advantages. ***N. V. Nemtchinova, B. A. Krasin[1], V: E. Kloytz** (Irkutsk State Tech. Univ., RU; [1]Inst. Geochem., Irkutsk, RU) [639]

P7.43 Production of carbohydrate-protein fodder from brewing waste. ***I. V. Chakir, A. V. Vasiliev, V. I. Panfilov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [655]

P7.44 A study of MSW incineration fly ash: characterization of physical and chemical properties, and metal leaching by Aspergillus niger. **H. Y. Wu, *Y. P. Ting** (Nat. Univ. Singapore, SG) [1298]

P7.45 The application of activated carbons to sorption and biodegradation of phenol. **M. Madela, *A. Tomska, E. Neczaj, H. Jablonska** (Tech. Univ. Czestochowa, PL) [976]

P7.46 The methodology for environmental risk assessment of industrial accidents with effect on environment. ***V. Ficbauer, D. Doskočilová** (Tech. Univ. Brno, CZ) [1311]

P7.47 Gold biosorption by macrofungus; mathematical models and pH effects. **A. K. Mittal, *Y. P. Ting[1]** (Indian Inst. Technol., Delhi, IN; [1]Nat. Univ. Singapore, SG) [1300]

P7.48 Ultrasonic field energy in some of the environmental applications. **J. Bien, *L. Stepniak, L. Wolny** (Tech. Univ. Czestochowa, PL) [1334]

P7.49 Risk analysis of hi tech membrane companies based on predictions of future prices. ***V. Kučerová, M. Dohnal** (Tech. Univ. Brno, CZ) [1360]

P7.50 Emissions of NOx and N2O in pressurized fluidized bed combustion of subbituminous coals. ***K. Svoboda, M. Hartman, M. Pohořelý** (Inst. Chem. Proc. Fundam., Praha, CZ) [1387]

P7.51 Modeling of oxygen mass transfer within wastewater film in rotating biological contactors. **R. E. Ceclan, T. Dobre, M. Ceclan, *A. Sturzoiu, O. Floarea** (Univ. Politehnica, Bucuresti, RO) [1391]

P7.52 Evaluation of combined system of pressure swing adsorption and super cold separator for CO2 recovery from boiler exhaust gas. ***S. Uchida, S. Tsuneoka[1], N. Tomonaga[1], S. Narita[2], Y. Takamura[2]** (Shizuoka Univ., Hamamatsu, JP; [1]Mistubishi Heavy Ind., Nagasaki, JP; [2]Chubu Elect. Power Co., Nagoya, JP) [1399]

P7.53 Reduction of fugitive emissions by implementation of LDAR program. ***A. Mičíková, J. Milickova, B. Štulrajter** (Slovnaft VÚRUP, Bratislava, SK) [1401]

P7.54 Mutual relations of ethical and financial aspects of hi-tech environmentally oriented companies. **J. Markesová, A. Putnová, V. Korab, *M. Dohnal** (Tech. Univ. Brno, CZ) [1429]

P7.55 Natural zeolite application in the treatment of wastewater obtained by dyeing process of acrylic fibers using BEZACRYL-dyes. ***V. Stankov-Jovanovic, V. Mitic, O. Jovanovic, B. Jovanovic[1]** (Fac. Nat. Sci. Math., Nis, YU; [1]DP Pirotex, Pirot, YU) [1493]

P7.56 Aerobic biodegradation of two different oils by a Bacillus strain. **M. A. Aparicio, M. Eiroa, A. Vázquez, C. Kennes, *M. C. Veiga** (Univ. Coruña, ES) [1485]

P7.57 Adsorptive and colloidal properties of soil fractions. **A. W. Marczewski** (M. Curie-Sklodowska Univ., Lublin, PL) [1484]

P7.58 Effect of temperature and a shutdown period on performance of a gas-phase biofilter. **O. J. Prado, J. A. Mendoza, M. C. Veiga, *C. Kennes** (Univ. Coruña, ES) [1476]

P7.59 Water and wastewater minimization through mathematical optimization method. ***M. Gougol, M. Shahini, H. Pahlevan Zadeh** (Iranian RD Cent. Chem. Ind., IR) [1499]

P7.61 Aerodynamic, economical and social problems of dust-catching in the refractory manufacture. **S. V. Entin, N. M. Anjeourov, L. I. Sheglova, N. N. Lobatchyova, *Yu. V. Krasovitskij, K. A. Krasovitskaya** (Voronezh, RU) [99]

P7.62 Hydrometallurgical separation of zinc from solid bulk feed. ***T. Hilber, R. Marr, M. Siebenhofer[1], V. Simon[1]** (Tech. Univ. Graz, AT; [1]VTU Engineering, Graz, AT) [1296]

P7.63 Influence of temperature on Rhodococcus erythropolis IGTS8 culture as DBT desulfurising biocatalyst. **C. Hernández, A. B. Martín, A. Alcón, *V. E. Santos, F. García-Ochoa** (Univ. Complutense, Madrid, ES) [357]

P7.64 Excess biomass removal strategies in gas-phase biofilters. **J. A. Mendoza, O. J. Prado, M. C. Veiga, *C. Kennes** (Univ. La Coruna, ES) [1509]

P7 Posters — Thursday
Food processing and technology

P7.66 Database of starch, glucose and fructose syrups. ***P. Kadlec, Z. Bubník, P. Bransky** (Inst. Chem. Technol., Praha, CZ) [426]

P7.67 Experimental investigation of drying of carrots in a fluidized bed with inert particles as heat carrier. **M. S. Hatamipour, *D. Mowla** (Shiraz Univ., IR) [1314]

P7.68 Application of continuous chromatographic separation in sugar processing. ***Z. Bubník, V. Pour, A. Gruberová, H. Štarhová, A. Hinková, P. Kadlec** (Inst. Chem. Technol., Praha, CZ) [208]

P7.69 Mineral membrane filtration in refinement of starch hydrolysates. ***A. Hinková, I. Bohačenko, Z. Bubník, M. Hrstková, P. Jankovská** (Inst. Chem. Technol., Praha, CZ) [324]

P7.70 Rheological properties of tomato's fluid products. **L. Broniarz-Press, *S. Dryjer, M. Samulska** (Poznan Univ. Technol., PL) [195]

P7.71 Separation properties of nanofiltration membrane during purification of salts and sugars solutions. ***M. Hrstková, Z. Bubník, A. Hinková, V. Pour** (Inst. Chem. Technol., Praha, CZ) [569]

P7.72 The bakery processing quality of different wheat varieties of HMW-glutenin lines. ***M. Valová, K. Juračková, J. Příhoda** (Inst. Chem. Technol., Praha, CZ) [1232]

P7.73 Recovery of tartrates from Iranian grape pomace. ***A. Shahvelayati, S. Saffarzadeh[1], S. Shokrollahzadeh[1]** (Islamic Azad Univ., Tehran, IR; [1]IROST, Tehran, IR) [1034]

P7.74 Construction of a neural net that describes the dispersion number in an extractor of alternative plates. **J. B. Severo Júnior, F. L. G. Lopes[1], *R. R. de Souza** (UFS, Sao Cristovao, BR; [1]Fac. Admin., Aracaju, BR) [422]

P7.75 Evaluation of chemical changes during germination of lupin seeds. ***M. Skulinová, P. Kadlec, J. Dostálová, M. Zatopková, V. Hosnedl[1], J. Hrachovinová[1]** (Inst. Chem. Technol., Praha, CZ; [1]Czech Agric. Univ., Praha, CZ) [453]

P7.76 Effects of microwave heating on lipolytic enzymes of wheat germ. ***J. Kaasová, P. Kadlec** (Inst. Chem. Technol., Praha, CZ) [351]

P7.77 Oxidative changes of lipids during the microwave heating. **P. Hanzlík, J. Dostálová, Z. Reblová, *J. Kaasová, P. Kadlec** (Inst. Chem. Technol., Praha, CZ) [1117]

P7.78 Drying of the alpha-amylase enzyme bacterial in spray dryer and freeze dryer for its industrial use. ***S. S. Jesus, A. Cappi, G. C. Stein, T. T. Franco, R. Maciel Filho** (UNICAMP, Campinas, BR) [841]

P7.79 Quality of dried potatoes for human consumption at drying in the Proctor Schwartz drier. ***L. Sychra, J. Mareček** (Mendel Univ. Agric. Forestry, Brno, CZ) [777]

P7.80 The optimization of food thermosterilization process for maximizing nutrient retention. **I. Mráz** (LikoSpol a. s., Bratislava, SK) [1197]

P7.81 Mathematical modelling of vacuum cooling of beef. ***M. Houška, A. Landfeld, Da-Wen Sun[1], Zhihang Zhang[1]** (Inst. Food Res., Praha, CZ; [1]Univ. Coll. Dublin, IE) [1111]

P7.82 Extraction and analysis of Pistacia Lentiscus essential oil by gas chromatography. ***A. Hassani, S. Mecherara, F. Mehdid, B. Y. Meklati** (USTHB, Alger, DZ) [170]

P7.83 NIR spectroscopy: a useful tool for rapid monitoring of processed cheeses manufacture. ***L. Čurda, O. Kukačková** (Inst. Chem. Technol., Praha, CZ) [532]

P7.84 Evaluation of Cassava dehydrated leaves in the human feeding. **I. M. N. Barros, J. C. C. Santana[1], G. F. da De Silva, *R. R. de Souza** (UFS, Sao Cristovao, BR; [1]UNICAMP, Campinas, BR) [452]

P7.85 An application of ICP-AES method in determining chosen elements in food products. **E. Leśniewska, *M. I. Szynkowska, J. Albińska, T. Paryjczak** (Tech. Univ. Lodz, PL) [396]

P7.86 Resistance of vegetative cells and ascospores of heat resistant mould Talaromyces avellaneus to the thermal and high pressure treatment in apple juice. ***M. Voldřich, J. Dobiáš, L. Tichá, M. Čeřovský, J. Krátká** (Inst. Chem. Technol., Praha, CZ) [291]

P7.87 Risk assessment of temperature histories in catering. ***M. Voldřich, N. Cahlíková, M. Čeřovský, J. Pivoňka** (Inst. Chem. Technol., Praha, CZ) [329]

P7.88 Changes of polymer packaging materials during high pressure treatment. ***J. Dobiáš, M. Voldřich, M. Marek, K. Chudáčková** (Inst. Chem. Technol., Praha, CZ) [270]

P7.89 Pectinases production from cereal raw material. ***A. Blandino, K. Dravillas[1], T. Iqbalsyah[2], S. S. Pandiella[1], D. Cantero, C. Webb[1]** (Univ. Cádiz, ES; [1]UMIST, Manchester, UK; [2]Syiah Kuala Univ., Darussalam, ID) [1053]

P7.90 Influence of the infrared radiation upon the microorganisms with implications in the food industry. **L. Oprean, *A. Sipos, M. Tanase** (Univ. Sibiu, RO) [112]

P7.91 Influence of the autolysate upon the multiplication of some industrial yeast strains. **L. Oprean, *A. Sipos, V. Nederita** (Univ. Sibiu, RO) [111]

P7.92 Microscopic fungi in Czech bakeries. **P. Vanatová** (Inst. Chem. Technol., Praha, CZ) [867]

P7.93 Mathematical model of moisture division in the first drying period of shredded carrots in fixed bed. ***L. Dukalska, U. Iljins, D. Karklina** (Latv. Univ. Agric., Jelgava, LV) [359]

P7.94 Viscoelasticity of the beef meat. ***J. Buchar, J. Simeonovová** (Mendel Univ. Agric. Forestry, Brno, CZ) [611]

P7.95 Determination of thermal and structural parameters of starch isolated from the steps of the maize tortilla process. ***R. Ramírez-Bon, J. M. Yanez-Limon, R. Flores-Farías, F. J. Espinoza-Beltrán, J. Enríquez-Ramos[1], B. Ramírez-Wong[1], P. I. Torres-Chávez[1], E. C. Rosas-Burgos[1]** (Univ. Querétaro, MX; [1]Univ. Sonora, Hermosillo, MX) [1270]

P7.96 Production of galacturonic acid from the cell wall of sugar beet. ***H.-J. Jördening, I. Baciu, K. Buchholz** (Tech. Univ. Braunschweig, DE) [708]

P7.97 Crystals in hard candies. ***M. Černá, I. Šmídová, J. Čopíková, M. Maryška, A. Synytsya, H. Nováková** (Inst. Chem. Technol., Praha, CZ) [1299]

P7.98 Processing of wheat bran to sugar solution. **P. Chotěborská, *J. Uher, K. Melzoch, M. Rychtera, B. Palmarola Adrados[1], M. Galbe[1], G. Zacchi[1]** (Inst. Chem. Technol., Praha, CZ; [1]Univ. Lund., SE) [1320]

P7.99 The influence of the enzyme preparations on viscosity cereal mashes during bioethanol production. ***J. Uher, P. Chotěborská, K. Melzoch, M. Rychtera** (Inst. Chem. Technol., Praha, CZ) [1321]

P7.100 Vacuum cooling of liquids. **M. Dostal, *K. Petera** (Czech Tech. Univ., Praha, CZ) [1339]

P7.101 Lactic acid recovery by electrodialysis. **V. Hábová, K. Melzoch, M. Rychtera, *J. Uher, B. Sekavová** (Inst. Chem. Technol., Praha, CZ) [1343]

P7.102 Experimental and thermodynamic analyses of sorption isotherms of food products. ***S. Chemkhi, D. Mihoubi, F. Zagrouba, A. Ballagi[1]** (Inst. Nat. Rech. Sci. Tech., Hammam Lif, TN; [1]Ec. Nat. Ing. Monastir, TN) [1354]

P7.103 Investigation of structure gel on the pectin and carrageenan basis by DSC method. ***M. Yu. Tamova, L. V. Borovskaya, E. A. Barashkina, G. I. Kasianov, S. G. Shablina** (Kuban State Technol. Univ., Krasnodar, RU) [1400]

P7.104 Production of LM pectin by de-esterification of HM apple pectin. ***I. Alemzedeh, A. Saifkordi, D. Kahforooshan, M. Vossoughi** (Sharif Univ. Technol., Tehran, IR) [1381]

P7.105 Influence of cheese ripening on rheological properties of processed cheese. **I. Piska, *J. Štětina** (Inst. Chem. Technol., Praha, CZ) [1487]

P7 Posters—Thursday
Chemical technology for sustainable future

Chemical technology

P7.106 The new approach to a stability augmentation of polymer materials. ***A. F. Pouthkov, S. V. Peva[1], S. V. Tourenko** (Volgograd State Tech. Univ., Volzhsky, RU; [1]Gutal Ltd., Volzhsky, RU) [597]

P7.107 Effect of compositions and structural factors of the copolymer used over tensile and impact properties of PP/copolymer polyblend. ***R. Sciamanna, G. Arribas, A. Lozada** (Univ. Cent. Venezuela, Caracas, VE) [442]

P7.108 Efficiency of belt transmission with toothed belt and with a wheel of variable material characteristics and injection-moulding parameters. **A. M. Al-Zubiedy, J. Flizikowski, *A. Mrozinski** (Univ. Technol. Agric., Bydgoszcz, PL) [647]

P7.109 Researches of an abrasive wear of tread rubbers. ***A. F. Pouthkov, S. V. Peva[1], S. V. Tourenko, M. P. Spiridonova** (Volgograd State Tech. Univ., Volzhsky, RU; [1]Gutal Ltd., Volzhsky, RU) [563]

P7.110 Process engineering and properties of sulfur-bituminous composite materials. ***R. T. Porfireva, V. V. Gerasimov, R. I. Zaripov, T. G. Akhmetov, L. T. Akhmetova** (Kazan State Arch. Build. Acad., RU) [553]

P7.111 Effect of w/o microemulsion properties on activity of Pt combustion catalysts. **J. Rymeš, G. Ehret[1], L. Hilaire[1], *K. Jirátová** (Inst. Chem. Proc. Fundam., Praha, CZ; [1]Univ. Strassbourg, FR) [1193]

P7.112 Activity of calcined hydrotalcite-like compounds in catalytic combustion of volatile organic compounds (VOC). ***P. Čuba, F. Kovanda, K. Jirátová** (Inst. Chem. Proc. Fundam., Praha, CZ) [1173]

P7.113 The process of peat low-temperature thermolysis in the presence of VIII group metals. ***A. Usanov, E. Sulman, O. Misnikov, A. Afanasyev** (Tver Tech. Univ., RU) [298]

P7.114 Analysis of power consumption by disc refiner in paper industry. ***A. Mrozinski, Z. Kikiewicz, A. M. Al-Zubiedy** (Univ. Technol. Agric., Bydgoszcz, PL) [682]

P7.115 Modeling and optimization of the nitric acid plant performance. ***E. Rój, M. Wilk** (Inst. Naw. Sztucz., Pulawy, PL) [765]

P7.116 New effective astringent on the sulfuric base. ***R. T. Porfireva, A. J. Fomin, V. G. Hozin, Y. D. Samuilov, M. V. Rylova** (Kazan State Acad. Arch. Build., RU) [530]

P7.117 Surface modification of silica-containing materials. ***R. T. Porfireva, V. V. Gerasimov, A. R. Yusupova, T. G. Akhmetov, F. G. Gabbasov, F. G. Akhmadeev, L. T. Akhmetova** (Kazan State Arch. Build. Acad., RU) [581]

P7.118 Exothermic metal oxidation - a method for the preparation of multicomponent oxide ceramic powders. ***E. Günther, J. Hausselt, D. Linder, J. Palionyte, H.-J. Ritzhaupt-Kleissl** (Forschungszentrum, Karlsruhe, DE) [73]

P7.119 Iron removal from celestite by magnetic separation. ***M. Koral, S. Kocakusak, H. Yuzer, K. Akcay** (TUBITAK, Gebze-Kocaeli, TR) [55]

P7.120 Lithium manganese spinels as promising cathode materials for lithium-ion batteries. ***E. V. Makhonina, V. S. Dubasova[1], V. S. Pervov, A. F. Nikolenko[1], A. S. Fialkov[1]** (Inst. Gen. Inorg. Chem., Moskva, RU; [1]Sci. Res. Inst. Elect. Carb. Prod., Elektrougli, RU) [865]

P7.121 Aluminum anode oxidation and electrochemical dying - influence of electrolyte solution structure on the color S-15 hue. ***A. Zarubica, M. Miljkovic, M. Purenovic** (Univ. Nis, YU) [617]

P7.122 Prediction of minor element distribution between copper matte and reverb furnace slag. ***N. Mitevska, Z. D. Zivkovic** (Copper Inst., Bor, YU) [654]

P7.124 Engineering technologies of the reduction iron ore. **M. R. G. Gad Abu El-Magd** (Nat. Res. Cent., Cairo, EG) [1286]

P7.125 Modelling of chemical mineral composition of slag mould powder to achive its basic functions properties. ***M. Gavrilovski, S. Radosavljevic[1], G. Milojevic[2]** (Sartid Inst. Metall., Smederevo, YU; [1]Inst. Technol. Nucl. Min. Raw Mat., Beograd, YU; [2]Med. Cent, Smederevo, YU) [1460]

P7.126 A formalised common sense analysis of cement kiln models based on shallow knowledge. **M. Dohnal, *A. Krejčí** (Tech. Univ. Brno, CZ) [1449]

P7.127 Coordination compounds of tin(II) as precursors of open-framework materials. Synthesis and structure M[SnF(HPO4)] (M=NH4, Na) and NH4[SnF(C2O4)]*0.5H2O. ***Yu. V. Kokunov, D. G. Detkov, M. M. Ershova, Yu. E. Gorbunova, Yu. N. Mihailov** (Inst. Gen. Inorg. Chem., Moskva, RU) [1316]

P7.128 Test of an aluminium alloy treated superficially using oxidation by electrical micro-arc, to the fissures formation under tension. ***N. Abdelbaki, D. Atmani** (Univ. Boumerdes, DZ) [1506]

P7.129 Modeling, simulation and analysis of an industrial causticizing process. **R. Andreola, O. Vieira, O. A. A. Santos, *L. M. M. Jorge** (Univ. Est. Marinagá, BR) [1326]

P7.130 Rate of cure comparison for rubber compounds taken from different processing phases. **M. Purenovic, O. Jovanovic, *M Ivancev[1], V. Stankov-Jovanovic, G. Petrovic** (Fac. Nat. Sci. Math., Nis, YU; [1]AD Tigar, Pirot, YU) [1495]

P7.131 High temperature oxidation of hard alloys. ***Ya. Gumnitsky, J. Matsushita[1], T. Pelekh[1]** (Lviv Politechnic, UA; [1]Tokai Univ., Kanagawa, JP) [853]

P7.132 Thermofixation - new method of composite production. ***A. Blaha, R. Pavlica, P. Brzobohatý** (Tomas Bata Univ., Zlín, CZ) [944]

P7.133 Effect of silica fillers of particle size on physical and mechanical properties and degradation of the crosslinking blends of acrylonitrile-butadiene rubber and chlorosulphonated polyethylene rubber. ***B. Radovanovic, G. Markovic[1]** (Fac. Sci., Nis, YU; [1]Tigar, Pirot, YU) [274]

P7 Posters—Thursday
Chemical technology for sustainable future

Biochemical technology

P7.134 Physiological changes of Candida tropicalis population degrading phenol in long-term experiments and recovery of the stressed cells. ***E. Komárková, J. Páca, M. Stiborová[1], A. M. Gerrard[2]** (Inst. Chem. Technol., Praha, CZ; [1]Charles Univ., Praha, CZ; [2]Univ. Teeside, Middlesbrough, UK) [37]

P7.135 Induction by phenol of enzymes participating in its own hydroxylation in Candida tropicalis and their cellular location. ***V. Suchá, M. Mikšanová, E. Komárková[1], J. Páca Jr., J. Páca[1], M. Stiborová** (Charles Univ., Praha, CZ; [1]Inst. Chem. Technol., Praha, CZ) [144]

P7.136 Cytochrome P450 participates in biodegradation of phenol by yeast Candida tropicalis. ***M. Mikšanová, V. Suchá, J. Páca Jr., J. Páca[1], M. Stiborová** (Charles Univ., Praha, CZ; [1]Inst. Chem. Technol., Praha, CZ) [132]

P7.137 Biological detoxification of coffee husk by Rhizopus sp. in solid state fermentation usig a column bioreactor. **C. V. Tagliari, R. K. Sanson[1], J. Páca[2], T. T. Franco, *C. R. Soccol[1]** (UNICAMP, Campinas, BR; [1]UFPR, Curitiba, BR; [2]Inst. Chem. Technol., Praha, CZ) [823]

P7.138 Kinetics of gibberellic acid production by solid state fermentation in column bioreactor using a mixed agroindustrial wastes substrate. **C. M. M. Machado, B. O. Oishi, J. Páca[1], *C. R. Soccol** (UFPR, Curitiba, BR; [1]Inst. Chem. Technol., Praha, CZ) [861]

P7.139 Volatile metabolites produced by Ceratocystis fimbriata in solid state fermentation. **A. B. P. Medeiros, R. J. S. De Freitas, J. Páca[1], *C. R. Soccol** (UFPR, Curitiba, BR; [1]Inst. Chem. Technol., Praha, CZ) [889]

P7.140 Designing of some biodegradable materials based on wood and plant biomass. ***U. Viesturs, A. Alksnis** (Latv. State Inst. Wood Chem., Riga, LV) [901]

P7.141 Management of hospital environment. **A. Zilevica, I. Vingre, *U. Viesturs[1]** (Univ. Latvia, Riga, LV; [1]Latv. State Inst. Wood Chem., Riga, LV) [919]

P7.142 The analysis of amino acid kinetic regularities in organic raw material bioconversion. ***V. P. Molchanov, M. G. Sulman, E. A. Taktarov** (Tver Tech. Univ., RU) [297]

P7.143 Enzymatic dechromation of leather scrub in isothermal and non isothermal reactor. ***K. Kolomazník, D. Janáčová, L. Zelinka, V. Vašek** (T. Bata Univ., Zlín, CZ) [1324]

P7.144 Biomodification of polyester fibers surface. ***D. Djordjevic, S. Djordjevic** (Fac. Technol., Leskovac, YU) [1349]

P7.145 Copper bioleaching by moderately thermophilic microorganisms. ***M. Razaghnia, B. Nasernejad, B. Bonakdarpoor, S. Shojaosadati[1]** (Univ. Amirkabir, Tehran, IR; [1]Tarbiat Modarres Univ., Tehran, IR) [1522]

P7 Posters—Thursday
Symposium on process safety

P7.146 Ecological safety of bosom's development. **S. Tchmykhalova** (State Mining Univ., Moskva, RU) [1234]

P7.147 For the question of technogenious hazard estimation of industrial objects from the position of sustainability. ***G. Statyukha, T. Bojko, V. Bendyug** (Nat. Tech. Univ., Kyiv, UA) [749]

P7.148 Development of models and algorithms for assessment risk of occurrence emergency at the enterprises of a chemical industry. **A. F. Egorov, T. V. Savitskaya, *A. S. Makarova, G. V. Filippova** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU) [437]

P7.149 Ranking hazards - a fuzzy set approach for rational use of intuition. **P. K. Bandyopadhyay, *S. C. Roy, S. N. Sen** (Jadavpur Univ., Calcutta, IN) [1133]

P7.150 An analysis on hazardous area of natural gas transmission pipeline. ***Young-Do Jo, K. S. Park, B. J. Ahn[1]** (Inst. Gas Safety Technol., Kyunggi, KR; [1]Korea Polytech. Univ., Kyunggi, KR) [346]

P7.152 Evaluation of the cummulative social risk. ***M. Bejdaková, F. Babinec** (Tech. Univ., Brno, CZ) [967]

P7.153 Experience with application of method for selection of the instalations for the quantitative risk assessment (QRA). ***L. Ivánek, P. Strážnický[1], F. Babinec[1]** (Tech. Univ. Ostrava, CZ; [1]Tech. Univ., Brno, CZ) [968]

P7.154 Development of the model for risk management by handling potentially dangerous substances and preparations. ***A. S. Makarova, A. F. Egorov, D. O. Kuznetsov[1], S. V. Makarov** (Mendeleev Univ. Chem. Technol. Russia, Moskva, RU; [1]Gosstandart, Moskva, RU) [438]

P7.155 Destruction of a double walled storage tank under pressure wave by computer modelling. ***P. Schneider, T. Nicák, P. Kulhanek[1]** (Tech. Univ., Brno, CZ; [1]Vítkovice a. s., Ostrava, CZ) [1048]

P7.156 Virtual reality prototype of explosion vessel for advanced modeling of gaseous combustion and ignition. ***E. A. Rossinsky, I. E. Lukashevich, I. A. Kirillov** (Kurchatov Inst., Moskva, RU) [795]

P7.157 Hazard assessment risk analysis of chemical process facilities. ***T. N. Chvetsova-Chilovskaya, V. G. Gorsky, V. A. Petrunin, G. F. Tereshenko[1]** (State Res. Inst. Org. Chem., Moskva, RU; [1]Ministry of Industry, Moskva, RU) [1315]

P7.158 Safety criteria from kinetic expertise. ***G. M. Come, F. Battin-Leclerc, G. Scacchi, R. Fournet, P. A. Glaude, V. Conraud, H. J. Pasman[1], A. Pekalski[1]** (ENSIC-CNRS, Nancy, FR; [1]Delft Univ. Technol., NL) [1389]

P7.159 Environmental impact assessment of the accidental releases of hazardous materials from storage tanks. ***A. Mičíková, B. Štulrajter, E. Pitrunová** (Slovnaft VÚRUP, Bratislava, SK) [1398]

P7.160 A fuzzy pooling of coal dust knowledge. ***A. Krejčí, R. Koivisto[1], M. Starzak[2], M. Dohnal** (Tech. Univ. Brno, CZ; [1]VTT Manuf. Technol., Tampere, FI; [2]Univ. Natal, Durban, ZA) [1450]

P7.161 Safety assessment of the nitric acid production line. ***D. F. Lipi, F. Babinec** (Tech. Univ. Brno, CZ) [1517]

AUTHOR INDEX

Author delivers the contribution indicated in bold

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

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U

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PRAHA
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ZLATÁ PRAHA 1 km
STUDENT HOUSE
CHISA CONGRESS
ORLÍK
MASARYKOVA
METRO DEJVICKÁ
KRYSTAL 4 KM
AIRPORT 11 KM
DIPLOMAT
PETRSKÁ
PRAGUE CASTLE
RUDOLFINUM
MUNICIPAL H.
MAIN R.St.
STATE OPERA
NATIONAL THEATRE
NATIONAL MUSEUM
KAJETÁNKA
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