

Short course "Workflow for product design and development"

Course Outline

- **Introduction**
 - Product and process design and development: what to make, how to make
 - Classification of products
- **Tasks and phases in product and process development**
 - Unit tasks and unit operations
 - RAT²IO module
 - Tools for project management – Gantt Chart, Objective-Time Chart, Workflow Diagram
- **Product attributes/ ingredients / product microstructure relationships**
 - Various product attributes: functional, mechanical, sensorial, etc.
 - Relationship between product attributes, ingredients, and microstructure
 - Examples: cream droplet size, powder PSD, crystal structure
 - Methods and tools for describing the relationship
 - Causal tables
 - Mechanistic models
 - Empirical correlations
- **Experimental strategies for product design**
 - Property characterization
 - One-factor-a-time
 - Design of experiments
- **Prediction and measurement of properties for product design**
 - Group contribution methods for property estimation
 - Computer-aided molecular design and computer-aided molecular/blend design
- **Economic analysis in product design and development**
 - Best product vs. most profitable product
 - Economic measures and pricing model
- **Examples**
 - Sun lotion cream with antioxidant and zinc oxide nanoparticles (distributed throughout the sections above)
 - Design of pharmaceutical granules
 - Transdermal patch
 - Herbal dietary supplements
 - Bar soaps
 - A nanotechnology-based humidity sensor
 - Design of a pharmaceutical salt form
- **Conceptualization of innovative products**
- **Summary and conclusions**

Date and Venue

Date: Thursday, September 2, 2010 (the day after the closing of Congress)

Venue: House of the Czech Association of Scientific and Technical Societies (CSVTS), Prague 1.

Course Fee

Standard fee	Euro 350
Discounted fee for members of EFCE	Euro 300
Discounted fee for student participants	Euro 100

The course fee includes participation in all lectures and tutorials, lecture notes, tutorial notes, and two coffee breaks.

Instructors

Prof. Ka Ming NG (Chair Professor at the Department of Chemical and Biomolecular Engineering and Chief Executive Officer of Nano and Advanced Materials Institute (NAMI), Hong Kong University of Science and Technology, Hong Kong)

Prof. Rafiqul GANI (Professor at the Department of Chemical and Biochemical Engineering and Director and co-founder of Computer Aided Process-Product Engineering Center (CAPEC), Technical University of Denmark)

Dr. Christianto WIBOWO (Principal Engineer and Training Course Coordinator, ClearWaterBay Technology, Inc., Pomona, California, USA)

Application

For participation in the course, please contact directly the Organizing Committee at the address org@chisa.cz.

Note

Course fee concerns the course solely. This fee does not entitle a participant to take part in the Congress.