



DTU's Michelsen selected for Distinguished Lecture in thermodynamics



Professor Michael L. Michelsen, of the Technical University of Denmark (DTU), has been selected to deliver the latest European Federation of Chemical Engineering (EFCE) Distinguished Lecture.

The Federation's Working Party on Thermodynamic and Transport Properties nominated Professor Michelsen in recognition of his outstanding work in the field of thermodynamics.

In a career spanning 40 years, Michelsen's work has been influential in the energy and chemical industries, especially oil and gas exploration. The award comprises of a certificate and €1,500 cash prize.

Michelsen's innovative development of algorithms for the efficient and fast computation of phase equilibrium for non-ideal mixtures made the vital connection between thermodynamic calculations and numerical analysis. His algorithms have found practical applications throughout industry and academia worldwide, where he has translated numerical models into reliable design tools for companies including Exxon-Mobil and Shell.

The effective modelling of phase equilibrium between two or more phases is fundamental to the design of separation processes. This calculation is essential for the optimal exploitation of oil and gas reservoirs.

The author of over 130 scientific journal papers and co-author of three books, Michelsen has earned the reputation as a pioneer in his field. His research has broad application in other areas of chemical engineering including reaction engineering, transport phenomena, biochemical engineering and material science.

On learning of his forthcoming recognition, Michelsen said: "It is of course a great honour

to receive the nomination for this award. The nomination was quite surprising as my work is not mainstream thermodynamics. I think what may have contributed to my recognition would be the PhD course I developed, along with my colleague professor Jørgen Mollerup at DTU, on models and computational methods. We have been successfully running this course for over 20 years, with substantial international, industrial and academic participation."

PhD-Workshop of the WPPRE

The PhD-workshop of the Working Party on Polymer Reaction Engineering (WPPRE) represents a platform where young academics in the field of Polymer Reaction Engineering can build up valuable networks. It is an opportunity to meet fellow researchers and to make contact with representatives from industry.

In 2012, Professor Markus Busch from the Technical University of Darmstadt took over as Chair of the WPPRE. Since then, two workshops have been organised (2012 in Lyon and 2013 in Hamburg). They have been primarily directed at PhD-students from universities all over Europe, giving them a chance to talk about the latest results of their work by means of short oral and poster presentations. In return, they were able to benefit from helpful feedback and suggestions of the audience.

The upcoming WPPRE workshop is scheduled from 12 to 14 September 2014 and takes place in San Sebastian, Spain.

The registration deadline is 13 July 2014.

For more information and to register, please visit: www.efce.info/Working+Parties/Polymer+Reaction+Engineering/PhD_Workshop+of+WPPRE

Report: 8th European Workshop on Food Engineering and Technology

Quakenbrück, Germany, 1-2 April 2014

Presentations were given by selected PhD students in Food Engineering and Technology at European level. The successful Workshop series is organised every year by the EFCE Section on Food in cooperation with the European Federation of Food Science and Technology (EFFoST) and the host.

Programme: www.efce.info/European+Food+Workshop

Julius Maggi Research Award

The Julius Maggi Research Award, sponsored by Nestlé's Product Technology Centre in Singen, is a prize of 2,500 Euros which is awarded to the best scientific paper presented by a PhD student at the annual European Workshop on Food Engineering and Technology. Selection criteria of the international jury include the practical importance to the food industry, the high quality, and the presentation in a clear and convincing way.

2014 Award winners:

1st prize: David LLOYD, University of Birmingham, UK

2nd prize: Erika GEORGET, Leibniz University Hannover, De

3rd prize: Delphine HUC, National Research Institute of Science and Technology for Environment and Agriculture (IRSTEA), Fr

All 3 top candidates will be invited to the Nestlé Product Technology Centre, Singen, Germany, to present their results and to gain insight into Nestlé R&D activities.

Out of the top contenders of previous PhD workshops, 3 have assumed professorships (Technion,IL; U. Osnabrück, D; U BOKU,Vienna, A)

Events: ESEE - 10th European Symposium of Electrochemical Engineering

Chia, Domus de Maria (CA), Sardinia, Italy, 28 September - 2 October 2014 (EFCE Event No. 723)

The 10th ESEE "*CURRENT electrochemistry: the POTENTIAL for a challenging future*", organised under the auspices of the EFCE Working Party on Electrochemical Engineering, aims to pinpoint the importance of Electrochemistry in offering solutions to current technological and environmental problems, to highlight its interdisciplinary character and to emphasize the links between fundamental and applied aspects. The main goal of the Conference is to provide a multinational platform where the latest CURRENT trends in Electrochemistry can be presented and discussed in a friendly environment with the aim of triggering all the POTENTIAL for new challenging ideas.

Topics: Electrochemical reactors; Industrial electrochemistry; Electrochemical engineering in environmental protection; Electrochemical energy conversion and storage; Corrosion protection engineering; Electrochemistry at nanoscale; General Sections; and Education in electrochemistry.

The Carl Wagner Medal of Excellence in Electrochemical Engineering will be awarded at the conference.

Symposium website: www.10thesee.it

Workshop: Energy Supply for Intensified Processes

Gleisdorf, Austria, 25 June 2014

The EFCE Working Party on Process Intensification and the IEA Task 49/IV (task49.iea-shc.org) cordially invite you to their joint workshop on *Energy Supply for Intensified Processes* to exchange views on the effect of intensified processes on the industrial energy supply.

The workshop will be organised in the framework of "Gleisdorf Solar 2014"; an international conference on solar heating and cooling.

To register for this workshop, please visit: www.aee-intec-events.org/g2014/

The workshop aims to bring together experts working in process intensification

to exchange views and relevant studies on the following questions:

- Will intensified processes change the landscape of industrial energy requirements?
- To which extent can these changes be expected within the near (2020) and longer-term future (2050)?
- Which effect on renewable energy integration can be expected?

The preliminary programme is available on their website (see above).

Events: 13th Mediterranean Congress of Chemical Engineering (13MCCE)

Barcelona, Spain, 30 September – 3 October 2014 (EFCE Event No. 725)

The Congress will cover all aspects and new findings related to Chemical Engineering, to its application in areas such as Sustainable Development and Environmental Engineering, Food and Biochemical Engineering, Process and Product Engineering, and classical areas such as Separation Technologies, Chemical Reactors, and Processes. Additionally, present and future prospects for a career in academia and industry will be considered as a main discussion subject, regarding the new educational and economic paradigms the sector is facing in Europe and globally.

Inaugural Lecture: Achieving more sustainable solutions through process intensification, Rafiqul GANI, Denmark.

Plenary speakers: Gintaras V. (Rex) REKLAITIS, USA; Peter JAFFÉ, USA; Daniel RESASCO, USA; José Antonio GARRIDO, Spain; Adisa AZAPAGIC, United Kingdom.

Round Tables: El papel de la Ingeniería Química en el modelo productivo; Sustainable Chemical Engineering: Resources optimization.

Congress website:
www.ub.edu/congmedit/

Events: 4th International Gas Processing Symposium

Doha, Qatar, 26-27 October 2014 (EFCE Event No. 724)

Main theme: Natural Gas and the World's Energy Mix

The symposium aims to bring together key

academics and industrial experts to address the various challenges related to accessing, utilizing and processing of natural gas. The symposium will include oral and poster presentations, keynote lectures, workshops and an exhibition.

Topics: Energy Mix; Environmental Challenges; Process Operations

Novel contributions are welcome with emphasis on the following areas:

Environmental sustainability including greenhouse gases (GHGs); VOC emissions; Flaring; Clean production and efficient use of natural resources and energy applications; Sustainable technologies for carbon sequestration and utilization; Efficient utilization of natural resources (Feedstock, Energy, H₂O, etc.); Assessment of sustainability and life cycle analysis.

Symposium website:
www.qu.edu.qa/gpc_symposium/

Modern Drying Technology - Volume 5: Process Intensification

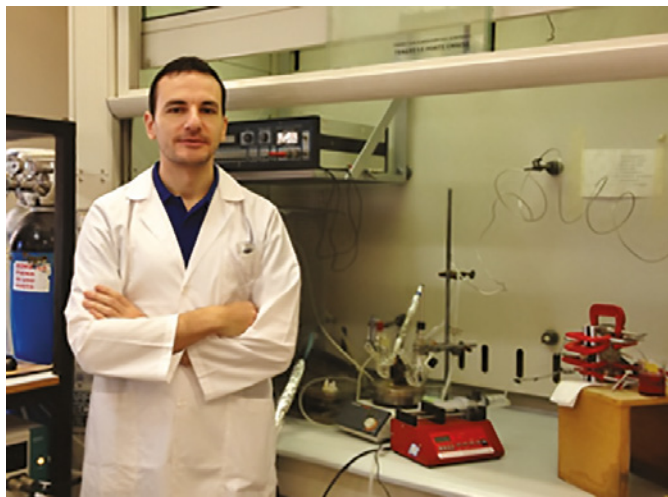
Edited by Evangelos Tsotsas and Arun S. Mujumdar

The five-volume series provides a comprehensive overview of all important aspects of drying technology. These include computational tools at different scales (Volume 1), modern experimental and analytical techniques (Volume 2), product quality and formulation (Volume 3), energy savings (Volume 4) and process intensification (Volume 5). Many chapter authors of the series are members of the EFCE Working Party on Drying.

Volume 5 is dedicated to process intensification by more efficient distribution and flow of the drying medium, foaming, controlled freezing, and the application of superheated steam, infrared radiation, microwaves, power ultrasound and pulsed electric fields. Process efficiency is treated in conjunction with the quality of sensitive products, such as foods, for a variety of hybrid and combined drying processes.

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Novel wastewater treatment technologies recognised



*Carl Wagner Medal of Excellence winner
Dr. Sirés in his research laboratory*

The European Federation of Chemical Engineering (EFCE) has announced Dr. Ignacio Sirés Sadornil as the latest winner of the Carl Wagner Medal of Excellence in Electrochemical Engineering for his exceptional research career in electrochemical wastewater treatment.

Organic pollutants in wastewater streams can cause major problems for industry, such as pollution from dye residues presents a challenge for the textile industry. If left untreated, the wastewater can cause groundwater pollution and ruin farmland.

Dr. Sirés, a senior researcher and lecturer at the University of Barcelona, won the award in recognition of his work on the development of effective and economical treatment technologies for wastewater contaminated with dye, pesticide and pharmaceutical residues.

Since starting his research career in the early 2000s, Sirés' work has focussed on the development of electrochemical advanced oxidation processes (EAOPs) for water decontamination, in particular organic pollutant

degradation. This new technology is based on electro-Fenton reaction chemistry.

Fenton chemistry refers to the oxidation of organic compounds by free radicals generated by the reaction of hydrogen peroxide with an iron catalyst. The work of Sirés has developed electro-Fenton processes, generating the hydrogen peroxide in situ by electrochemical reduction of oxygen.

Professor Manuel Rodrigo, Chair of the EFCE Working Party on Electrochemical Engineering, which nominates the medallists, says: "Dr. Sirés' research, on the development of novel electrochemical wastewater treatment technologies, has the potential to be scaled up and applied at full scale in industry.

"He has addressed the optimisation of technology in terms of cost, reactor design and developed a deeper understanding of advanced nanostructured electrode materials for organic pollutant degradation. This is the thinking that contributed to our decision to award the Carl Wagner Medal to Dr. Sirés."

Dr. Sirés, on winning the medal, said: "What a wonderful surprise, I feel really proud to receive such a prestigious award! It adds to the many experiences I have enjoyed with other researchers abroad, who have had a huge impact on my views of science and technology.

"Within my field, I am noticing increasing attention towards the engineering aspects of environmental electrochemistry, which may help us make even more progress. This makes me particularly happy because the interplay of both fields will demonstrate the great effectiveness and viability of electrochemical water treatment technology."

The Excellence award – comprising of a €1,250 cash prize and certificate – will be presented to Sirés at the 10th European Symposium on Electrochemical Engineering (ESEE) in Sardinia, Italy. The conference will take place on 28 September – 2 October 2014.