

Press release

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EFCE recognises research in electrolyte thermodynamics



Research that provides a practical modelling solution to systems containing electrolytes has been recognised by the European Federation of Chemical Engineering (EFCE).

Dr Bjørn Maribo-Mogensen, who completed his PhD at the Department of Chemical and Biochemical Engineering, Technical University of Denmark (DTU) under the supervision of Professor Georgios M. Kontogeorgis and Associate Professor Kaj Thomsen, has been named the winner of the 2015 EFCE Excellence Award in Thermodynamics and Transport Properties.

Dr Maribo-Mogensen, now a Physical Property Specialist at Linde Engineering, Munich, Germany, successfully modelled an equation of state for electrolytes with applications in the oil and gas industry as part of his research.

He also developed a deeper understanding of the different models currently used for electrostatic interactions, comparing the Debye–Hückel model with the mean spherical approximation (MSA) theory.

Dr Maribo-Mogensen's thesis has led to the development of engineering software that has substantial potential for industrial applications, such as describing the effects of electrolytes on natural gas sweetening, hydrates modelling and biofuels processing.

Dr Maribo-Mogensen said: "During the course of my PhD, I have been trying to find the right balance between making my research scientifically relevant and yet useful for industrial applications. Little did I know that the journey I started back in 2010 would lead to being the recipient of this Excellence Award.

"I am honoured to receive this recognition for my work which would not have been possible without the lasting support from my family, colleagues and supervisors. The award will motivate me to continue pursuing challenging goals and contribute to research in thermodynamics and transport properties."

Professor Jean-Noel Jaubert, chair of the selection committee for EFCE's Working Party on Thermodynamics and Transport Properties, said: "Dr Maribo-Mogensen's PhD work is characterised by a pioneering, novel and highly independent work on electrolyte thermodynamics. The overall target has been to develop an electrolyte equation of state for application in the petroleum and chemical industries, including gas solubilities in mixed solvents containing salt and gas hydrate formation.

“Special emphasis is given to the development of a model with a sound theoretical basis and with clear predictive characteristics. This is a highly relevant topic with immense practical applications, but also a topic where numerous questions are still open. He achieved remarkable results and the committee unanimously decided to award him the prize.”

Dr Maribo-Mogensen was awarded the Excellence Award in Thermodynamics and Transport Properties for his thesis *‘Development of an electrolyte CPA (cubic-plus-association) Equation of State for Applications in the Petroleum and Chemical Industries’* at the 28th European Symposium on Applied Thermodynamics (ESAT).

ESAT was held in Athens, Greece, from 11 – 14 June 2015.

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Related links

[EFCE Media Centre](#)

[EFCE Excellence Award in Thermodynamics and Transport Properties
28th European Symposium on Applied Thermodynamics \(ESAT\)](#)

Notes to media:

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About chemical engineers

Chemical, biochemical and process engineering is the application of science, maths and economics to the process of turning raw materials into everyday products. Professional chemical engineers design, construct and manage process operations all over the world. Oil and gas, pharmaceuticals, food and drink, synthetic fibres and clean drinking water are just some of the products where chemical engineering plays a central role.

About EFCE

Founded in 1953, The European Federation of Chemical Engineering (EFCE) is a non-profit-making association, whose object is to promote co-operation in Europe between non-profit-making professional scientific and technical societies in 30 countries for the general advancement of chemical engineering and as a means of furthering the development of chemical engineering. See www.efce.org