Press release

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Monia Martins takes 2019 EFCE Thermodynamics Award for her studies of terpenes, ionic liquids and deep eutectic solvents

Dr. Mónia Martins has been awarded the **2019 EFCE Excellence Award in Thermodynamics** for her excellent PhD thesis "*Studies for the Development of New Separation Processes with Terpenes and their Environmental Distribution*" completed at the Department of Chemistry, University of Aveiro, Portugal under the supervision of Prof. João A. P. Coutinho and Prof. Simão P. Pinho.

The award jury was impressed by her studies of terpenes, ionic liquids and deep eutectic solvents, helping to develop different experimental methods for the measurement of their physiochemical properties.
This included the implementation a new methodology for gathering an extensive number of high quality experimental solubility data of terpenes and benzimido derivatives in water at different temperatures, the development of different experimental methods for the measurement of the solid-liquid phase diagrams of deep eutectic solvents containing mixtures and the development experimental gas-liquid chromatography measurements to obtain the activity coefficients at infinite dilution of various solutes in ionic liquids. Furthermore, she successfully used different theoretical approaches to estimate the distribution of terpenes in different environmental compartments and COSMO-RS for solvent screening and selection of ionic liquids.
The judges also noted that her thesis formed the basis of 12 peer reviewed research papers, which were published in prestigious international scientific journals.

Nominating her for the Excellence Award, Professor Simão P. Pinho said: "Mónia Martins developed an excellent body of work on a challenging and innovative subject, showing maturity, creativity, and involvement of unique and high quality standards."

The Excellence Award recognizes an outstanding PhD thesis and is judged on dissemination of knowledge including quality of the publications and presentations, duration of the thesis, originality of the topic studied and of the methodology followed, innovation and industrial relevance, and scientific impact of the work.

The prize, which is supported by Bayer AG, consists of a €1500 cash award and a travel grant to attend the 26th Thermodynamics Conference 2019, in Huelva, Spain, on 26-28 June 2019, where the prize will be awarded.

In addition, the Award jury gave special recognition to the runner-up, **Dr. Duncan Paterson**, Denmark, for his excellent PhD thesis "*Flash Computation and EoS Modelling for Compositional Thermal Simulation of Flow in Porous Media*" for which he achieved the second-best evaluation results. The research originates from the need for describing the complex process of recovering heavy oil with steam and solvents for the sake of reducing the energy and water consumption and the associated CO_2 emission. During his thesis, he has given unique contributions in generic algorithms for multiphase flash, and in particular the RAND-based flash framework which allows simultaneous computation of chemical equilibrium. It is expected that the formulations developed in his thesis will have a long-lasting impact on how we perform multiphase flash calculation under various specifications, with or without chemical equilibrium.

Ends

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Working Party on Thermodynamics and Transport Properties (http://www.wp-ttp.dk)

26th Thermodynamics Conference 2019 (https://thermodynamics2019.org/)

Notes to media:

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