Press Release

Young Scientist 2022 - Lia Beraldo da Silveira Balestrin with the topic:
LUMiSizer: an important tool in asphaltene inhibition studies

Berlin, 14 February 2022:

From January 24th to 25th, 2022, LUM GmbH hosted the 10th International Conference for Dispersion Analysis and Materials Testing. 90 participants from 24 countries around the world took part. Five candidates from South America and Europe were nominated for the Young Scientist Award 2022, their work was themed: learn from nature, use resources more effectively and avoid harmful effects [1]. Two Brazilian and two German participants faced the final selection process and discussed their research results with the audience and jury at the virtual conference.

Dr. Lia Beraldo da Silveira Balestrin was elected Young Scientist 2022 for her work:
"LUMiSizer: an important tool in asphaltene inhibition studies" [2], which she carried out at the Department of Chemistry, Campinas University in Brazil.

Balestrin's work aimed to study the colloidal behaviour of asphaltenes as a function of time and their structure under different compositional conditions. This involved studying the mechanisms of asphaltene aggregation as it is deposited and verifying the effect of inhibitors on this process. Their methodology included the following techniques: quartz microbalance (QCM), accelerated sedimentation experiments in the LUMiSizer and complementary microscopy measurements [3].

Balestrin was able to directly measure asphaltene sedimentation in a Brazilian crude using a large excess of n-heptane flocculant and using different inhibitors. She directly assessed the performance of time-dependent experiments in unstable crude oils and added information on inhibitor selection previously neglected by traditional methods. Here, the LUMiSizer dispersion analyser was able to demonstrate its advantages of physical acceleration of separation processes and high sample throughput.

As laudator Prof. Dr. Dr. Lerche, Scientific Conference Chair, emphasized in his speech, Lia Balestrin's work is a worthy addition to the six previous award winners from Israel (2014), the Netherlands (2015), Australia (2016) and Germany (2016, 2018, 2019). The experimental approach allows for new perspectives and potentials of analytical centrifugation to be identified and successfully applied. The results of the award winner have already internationally been published in Energy Fuels [4].

Press Release

[1] Press release from LUM GmbH on 14 December 2021

[2] LUMiSizer: an important tool in asphaltene inhibition studies,
Lia Beraldo da Silveira Balestrin, Watson Loh,
https://www.dispersion-letters.com/index.php/download_file/view/940/421/116/116/ 14.2.2022 10:02

[3] CARACTERIZAÇÃO COLOIDAL DE ASFALTENOS EM PETRÓLEO E EFEITO DE ADITIVOS SOBRE SEU MECANISMO DE DEPOSIÇÃO, LIA BERALDO DA SILVEIRA BALESTRIN, Tese de doutorado apresentada ao Instituto de Química da Universidade Estadual de Campinas como parte dos requisitos exigidos para a obtenção do título de Doutora em Ciências, Campinas 2019.

[4] Direct Assessment of Inhibitor and Solvent Effects on the Deposition Mechanism of Asphaltenes in a Brazilian Crude Oil, Lia Beraldo da Silveira Balestrin, Renata Dias Francisco, Celso Aparecido Bertran, Mateus Borba Cardoso, and Watson Loh, Energy Fuels 2019, 33, 6, 4748–4757

On the enclosed picture: Young Scientist 2022 – Dr. Lia Beraldo da Silveira Balestrin