



## WCCE11 - 11th WORLD CONGRESS OF CHEMICAL ENGINEERING

IACCHE - XXX Inter-American Congress of Chemical Engineering  
CAIQ2023 - XI Argentinian Congress of Chemical Engineering  
CIBIQ2023 - II Ibero-American Congress of Chemical Engineering  
Buenos Aires - Argentina - June 4-8, 2023

"The global chemical engineering working for a better future world"



### GS05-Symposium on Challenges and Opportunities in Rheology and Product Development

Monday, June 5<sup>th</sup>  
Tuesday, June 6<sup>th</sup>  
Auditorium 3  
(Ground floor)

## PROGRAM

### ORAL SESSIONS

#### SESSION 1. TRIBUTE TO MARÍA TERESA CIDADE

Chair: *João Maia, Case Western Reserve University, USA*

Monday, June 5<sup>th</sup>  
Auditorium 3

16:30-16:45 **Tribute to María Teresa Cidade**  
M.G. Rasteiro. *University of Coimbra (Portugal)*

ID1355 16:45-17:00 "An injectable magnetically sensitive system of GG:Alg microparticles with SPIONs in thermoresponsive hydrogels"  
Carrêlo, H.; Escoval, A.; Soares, Paula I.P.; Borges, J.P.; Cidade, M.T.  
*i3N/CENIMAT, NOVA School of Science and Technology (Portugal)*

ID1989 17:00-17:15 "Rheological and microstructural characterization of an oleogel of candelilla wax in soybean oil"  
Varges, P.R.; Fonseca, B.S.; Nagoya, J.P.; Marin, E.P.; Naccache, M.F.; de Souza Mendes, P.R.  
*Universidade Católica do Rio de Janeiro (Brazil)*

ID3024 17:15-17:30 "Rheological and textural properties of gels from faba bean"  
Bengoechea, C.<sup>1</sup>; Santana, I.<sup>1</sup>; Sciammaro, L.P.<sup>2</sup>; Puppo, M.C.<sup>2</sup>; Guerrero, A.<sup>1</sup>  
<sup>1</sup>*University of Seville (Spain)*. <sup>2</sup>*CIDCA - Universidad Nacional de la Plata (Argentina)*

#### SESSION 2. CHALLENGES AND OPPORTUNITIES IN RHEOLOGY AND PRODUCT DEVELOPMENT (I)

Chair: *Octavio Manero, Universidad Nacional Autónoma de México, México*

Monday, June 5<sup>th</sup>  
Auditorium 3

ID2998 KEYNOTE 18:30-19:00 "Dynamics and orientation distribution of rigid fibers at high concentration in shearing flows"  
Strednak, S.<sup>1</sup>; Butler, J.E.<sup>1</sup>; Bergognoux, L.<sup>2</sup>; Guazzelli, É.<sup>3</sup>  
<sup>1</sup>*University of Florida (USA)*. <sup>2</sup>*Aix-Marseille Université (France)*. <sup>3</sup>*Université Paris Cité (France)*

ID2373 19:00-19:15 "Rheology as a critical enabler of novel multi-layered annular structures"  
Maia, J.M.; Schneider, T.; Steinmetz, E.  
*Case Western Reserve University (USA)*

ID1308 19:15-19:30 "Rheology of suspensions of cellulose nanofibrils containing different charged functional groups"  
Alves, L.; Pedrosa, J.F.S.; Ferreira, P.J.T.; Gamelas, J.A.F.; Rasteiro, M.G.  
*University of Coimbra (Portugal)*

ID2811 19:30-19:45 "Nanofluid of TiO<sub>2</sub> and SiO<sub>2</sub> suspended in Carbopol solution: rheo-microscopy of nanofluids and its application for enhanced oil recovery"  
Marin Castaño, E.P.; Abedi, B.; De Souza Mendes, P.R.  
*Pontifícia Universidade Católica de Rio de Janeiro (Brazil)*

### SESSION 3. CHALLENGES AND OPPORTUNITIES IN RHEOLOGY AND PRODUCT DEVELOPMENT (II)

Chair: Jason Butler, University of Florida, USA

Tuesday, June 6<sup>th</sup>  
Auditorium 3

|        |             |  |
|--------|-------------|--|
| ID1345 | 14:00-14:15 | "The bioleaching process of silver: rheology and modeling"<br>Manero, O. <sup>1</sup> ; Salinas, I. <sup>1</sup> ; Medina, L. <sup>2</sup> ; Núñez, D.M. <sup>3</sup><br><sup>1</sup> Instituto de Investigaciones en Materiales, <sup>2</sup> Facultad de Química - Universidad Nacional Autónoma de México (México).<br><sup>3</sup> Universidad Juárez del Estado de Durango (México) |
| ID1883 | 14:15-14:30 | "Pipe rheology of wet coating foams"<br>Jäsberg, A.; Viitala, J.; Tanaka, A.; Prakash, B.; Koponen A.<br>VTT Technical Research Center of Finland (Finland)  |

### SESSION 4. CHALLENGES AND OPPORTUNITIES IN RHEOLOGY AND PRODUCT DEVELOPMENT (III)

Chair: Maria Graça Rasteiro, University of Coimbra, Portugal

Tuesday, June 6<sup>th</sup>  
Auditorium 3

|        |             |  |
|--------|-------------|--|
| ID1658 | 14:45-15:00 | "Aeration and rheology of viscoplastic bubbly liquids for buttercream frosting applications"<br>Hayes, D. <sup>1</sup> ; Murphy, A.C. <sup>1</sup> ; Fernandes, R.R. <sup>1,2</sup> ; Meza, B.E. <sup>3</sup> ; Peralta J.M. <sup>3</sup> ; Zorilla, S. <sup>3</sup> ; Wilson, D.I. <sup>1</sup><br><sup>1</sup> University of Cambridge (United Kingdom). <sup>2</sup> University of Illinois Urbana-Champaign (USA). <sup>3</sup> Universidad Nacional del Litoral (Argentina) |
| ID1770 | 15:00-15:15 | "Rheology of extra heavy crude oil emulsions"<br>Fernández-Díaz, E. <sup>1</sup> ; Páez Flor N.M. <sup>1</sup> ; Rubio-Hernández F.J. <sup>2</sup><br><sup>1</sup> DECEM, Universidad de las Fuerzas Armadas-ESPE (Ecuador). <sup>2</sup> Universidad de Málaga (Spain)  |

## POSTER SESSION

Tuesday, June 6<sup>th</sup> (COFFEE AREA) 10:30-11:00 h & 16:00 -16:30 h

|        |   |
|--------|---|
| ID1305 | "Rheology as a tool to evaluate the dispersion degree of CNFs in coatings"<br>Sanchez-Salvador, J.L. <sup>1,2</sup> ; Rasteiro, M.G. <sup>2</sup> ; Balea, A. <sup>1</sup> ; Pedrosa, J.F.S. <sup>2</sup> ; Negro, C. <sup>1</sup> ; Monte, M.C. <sup>1</sup> ; Blanco, A. <sup>1</sup> ; Ferreira, P.J.T. <sup>2</sup><br><sup>1</sup> University Complutense of Madrid (Spain). <sup>2</sup> University of Coimbra (Portugal)     |
| ID1786 | "Evaluation of "Equivalent Mortar Procedure": Mechanical and rheological characterization of self-compacting concrete formulations using natural pozzolanic cement and different kinds of aggregates"<br>Páez Flor, N.M. <sup>1</sup> ; Naranjo-Herrera, L.F. <sup>1</sup> ; Rubio-Hernández F.J. <sup>2</sup><br><sup>1</sup> DECEM, Universidad de las Fuerzas Armadas-ESPE (Ecuador). <sup>2</sup> Universidad de Málaga (Spain) |
| ID2024 | "Rheological properties of chitosan-STPP nanogels: effect of dilution"<br>Lucas, L.B. <sup>1</sup> ; Farías, M.E. <sup>2</sup> ; Pérez, O.E. <sup>1</sup><br><sup>1</sup> IQUIBICEN-CONICET, Universidad de Buenos Aires (Argentina). <sup>2</sup> Universidad Nacional de Luján (Argentina)  |
| ID2326 | "Mixing of high-consistency fibre-foam suspensions"<br>Prakash, B.; Viitala, J.; Kiiskinen, H.; Koponen, A.I.<br>VTT Technical Research Centre of Finland (Finland)   |
| ID2808 | "Effect of the medium type on rheological behaviour of fumed nanosilica dispersions"<br>Tshilumbu, N.N.; Fester V.<br>Cape Peninsula University of Technology (South Africa)  |
| ID2820 | "Mejoramiento de las propiedades físicas de la harina quinua ( <i>chenopodium quinoa</i> ) mediante la aglomeración con inyección de vapor"<br>Mendoza Rojas, C.; Mendoza Cortez, J.W.<br>Universidad Nacional Agraria La Molina (Perú)   |



## Coordinators

**Maria Graça Rasteiro**, *Chemical Engineering Department, University of Coimbra, Portugal (PT)*

**Maria Teresa Cidade**, *Nova School of Sciences and Technology, New University of Lisbon, Portugal (PT)*

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