



# 7<sup>th</sup> BRAZILIAN MEETING ON CHEMICAL SPECIATION

Bento Gonçalves, Brazil  
November 26<sup>th</sup> to 27<sup>th</sup>, 2023

# SCIENTIFIC PROGRAM



## Scientific Program - Schedule

### November 26<sup>th</sup>

| TIME            | MALBEC           | PINOT CENTER          | CARMÉNÈRE HALL   |
|-----------------|------------------|-----------------------|------------------|
| 10:00 – 12:00 h |                  | Short Courses 1 and 2 |                  |
| 14:00 – 15:45 h | Workshop         |                       |                  |
| 17:30 – 19:10 h | Opening Ceremony |                       |                  |
| 19:30 – 23:00 h |                  |                       | Welcome Cocktail |

### November 27<sup>th</sup>

| TIME            | MALBEC             | CARMÉNÈRE HALL |
|-----------------|--------------------|----------------|
| 09:00 – 10:30 h | Session 1          |                |
| 10:30 – 11:00 h |                    | Coffee-break   |
| 11:00 – 12:05 h | Session 2          |                |
| 14:00 – 15:00 h | Session 3          |                |
| 15:00 – 16:30 h |                    | Poster Session |
| 16:00 – 16:30 h |                    | Coffee-break   |
| 16:30 – 18:10 h | Session 4          |                |
| 18:00 – 18:40 h | Closing Conference |                |
| 18:45 – 19:30 h | Closing Ceremony   |                |



## November 26<sup>th</sup> (Sunday)

9:00 - 17:00 h

**Registration**  
Carménère Hall

### Short Courses (10:00 - 12:00 h)

**Short course 1: Chemical speciation in environmental studies: strategies, challenges and instrumental advances**

**Room:** Pinot Center

**Speakers:** Cláudia Carvalhinho Windmoller (UFMG, Brazil) and Daniela Santos Anunciação (UFAL, Brazil)

**Short course 2: Chemical speciation for nutritional and food analysis**

**Room:** Pinot Center

**Speakers:** Kelly da Graças Fernandes Dantas (UFPA, Brazil) and Letícia Malta Costa (UFMG, Brazil)

### Workshop (14:00 - 15:45 h)

**Workshop: Trends in chemical speciation analysis**

**Room:** Malbec

**Coordinator:** Amauri Antonio Menegário (UNESP, Brazil)

14:00 - 14:05 h

**Opening:** Amauri Antonio Menegário (UNESP, Brazil)

14:05 - 14:25 h

**Trends in chemical speciation analysis: in-situ measurements using DGT**

**Speaker:** Marco Tadeu Grassi (UFPR, Brazil)

14:25 - 14:45 h

**Studies on chemical speciation in biological and environmental systems: the influence of experimental models**

**Speaker:** Josué Carinhanha Caldas Santos (UFAL, Brazil)

14:45 - 15:05 h

**Advances in arsenite determination by ion chromatography and electrochemical detection in water for human consumption**

**Speaker:** Alicia Mollo (Universidad de la República, Uruguay)

15:05 - 15:25 h

**Exploring beyond the four arsenic species commonly reported in rice**

**Speaker:** Mirna Sigrist (Universidad Nacional del Litoral, Argentina)

15:25 - 15:45 h

**Discussion**



## Opening Ceremony

Room: Malbec

|                 |   |
|-----------------|---|
| 17:30 - 18:00 h | <b>Opening and Welcome</b><br>Márcia Foster Mesko (UFPEL, Brazil)<br><i>Chair of the 7<sup>th</sup> EspeQBrazil</i><br><br><b>Tributes</b><br>Honored 1: Joanna Szpunar (French National Research Center, France)<br>Honored 2: Jörg Feldmann (University of Graz, Austria)<br>Honored 3: Marco Aurélio Zezzi Arruda (UNICAMP, Brazil)<br>Honored 4: Maria das Graças Andrade Korn (UFBA, Brazil) |
| 18:00 - 18:30 h | <b>Cultural presentation</b>  |
| 18:30 - 19:10 h | <b>Opening conference:</b><br><b>Speciation, where it came from and where it is going?</b><br>Ewa Bulska (University of Warsaw, Poland)   |
| 19:30 - 23:00 h | <b>Welcome cocktail</b><br>Carménère Hall   |

## November 27<sup>th</sup> (Monday)

### Session 1 (9:00 - 10:30 h)

**Chair:** Paola de Azevedo Mello (UFMS, Brazil)

**Room:** Malbec

|                 |   |
|-----------------|---|
| 9:00 - 9:40 h   | <b>From fractionation to speciomics: to infinity and beyond</b><br><b>Plenary lecturer:</b> Marco Aurélio Zezzi Arruda (UNICAMP, Brazil)<br>Sponsored by <b>Nova Analítica</b>                |
| 9:40 - 10:05 h  | <b>Isotope probes in iron speciation analysis in plants and bacteria</b><br><b>Invited speaker 1:</b> Joanna Szpunar (French National Research Center, France)                                |
| 10:05 - 10:30 h | <b>A traditional tool for elemental speciation: HPLC-ICP-MS and its use for the characterisation of nanomaterials</b><br><b>Invited speaker 2:</b> Jörg Bettmer (University of Oviedo, Spain) |
| 10:30 - 11:00 h | <b>Coffee-break</b>   |



**Session 2 (11:00 - 12:05 h)**

**Chair:** Wladiana Oliveira Matos (UFC, Brazil)

**Room:** Malbec

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|---|--|
| 11:00 - 11:10 h                                 | <b>Oral presentation 1: Mass balance analysis of PFAS in communal waters</b><br><u>Viktoria Müller</u> , Andrew Kindness, Jörg Feldmann<br>The James Hutton Institute, United Kingdom/ University of Graz, Austria   |
| 11:10 - 11:20 h                                 | <b>Oral presentation 2: DGT with ferrihydrite binding phase for analysis of labile species of Ge in freshwater and determination by ICP OES</b><br><u>Mayara P. dos Santos</u> , Shelden M. de Paula, Rafael G. Dolatto, Éder J. dos Santos, Marco T. Grassi<br>UFPR, Brazil   |
| 11:20 - 11:30 h                                 | <b>Oral presentation 3: Chemical speciation of hexavalent chromium in organic fertilizer by LC-ICP-MS and spectrophotometry</b><br><u>Ívero P. Sá</u> , Samara Gomes Banhos, Mykaelli Andrade Santos, Pascoal F. Nhamue, Ana Rita A. Nogueira<br>UFSCar, Brazil  |
| 11:30 - 11:40 h                                 | <b>Oral presentation 4: Specimics analysis of transgenic soybean somatic embryogenesis using HILIC coupled simultaneously with TQ-ICP-MS and ESI-HRMS/MS</b><br>Lilian Seiko Kato, <u>Vinnícius Henrique da Silva</u> , Ana Beatriz Santos da Silva, Jorge Henrique Pedrobom, Diego Campaci de Andrade, Guilherme Crispim de Faria Cruz, Marco Aurélio Zezzi Arruda<br>UNICAMP, Brazil |
| 11:40 - 12:05 h                                 | <b>Phosphorus speciation as tool to improve nutrients recovery from agricultural wastes</b><br><b>Invited speaker 3:</b> Fabiane Goldschmidt Antes (Embrapa, Brazil)   |
| <b>12:05 - 14:00 h</b>                          | <b>Lunch</b>   |
| <b>Session 3 (14:00 - 14:25 h)</b>              |  |
| <b>Chair:</b> Marco Tadeu Grassi (UFPR, Brazil) |  |
| <b>Room:</b> Malbec                             |  |
| 14:00 - 14:25 h                                 | <b>Nanomaterials in non-chromatographic speciation analysis of arsenic</b><br><b>Invited speaker 4:</b> Wladiana Oliveira Matos (UFC, Brazil)  |



**Flash poster presentation (14:30 - 15:00 h)**

**Coordinators:** Rochele Sogari Picoloto and Alessandra Schneider Henn (UFMSM, Brazil)

**Room:** Malbec

14:30 - 15:00 h

**Flash poster presentation 1: Selenium species As urease inhibitors for the development of fertilizers with increased efficiency**

Aryanna Sany Pinto Nogueira Costa, Maria de Fátima Correia da Silva Neta, Josué Carinhanha Caldas Santos, Daniela Santos Anunciação  
UFAL, Brazil

**Flash poster presentation 2: Speciation and chemical fractionation of REE in water samples from the Paraíba do Sul River**

Raquel C. Gradwohl, Luiz Felipe P. P. Moreira, Melina B. T. Zanatta, Amauri A. Menegário  
UNESP, Brazil

**Flash poster presentation 3: Stability thiomersal in simulated vaccine samples: A speciation study made using cold vapour techniques**

Jarol R. Miranda-Andrades, Rodrigo A. Gonçalves, Joseane A. Mendes, Douglas F. Oliveira, José Marcus de Oliveira Godoy, Ricardo Q. Aucelio  
PUC-Rio, Brazil

**Flash poster presentation 4: Two-dimensional paper-based device for evaluating Ni and V porphyrins through laser ablation inductively coupled plasma mass spectrometry**

Eduarda Quadros Machado, Julián Eduardo Bállen Castiblanco, Leandro Wang Hantao, Marco Aurélio Zezzi Arruda  
UNICAMP, Brazil

**Flash poster presentation 5: Rhodamine-derived fluorescent probe for redox speciation of ionic iron in environmental samples**

Sângela Ferreira da Silva, Amanda Luise Alves Nascimento, Karrolyne Rocha da Costa, Ari Souza Guimarães, Josué Carinhanha Caldas Santos  
UFAL, Brazil

**Flash poster presentation 6: Influence of exposure to gold nanoparticles on proteins and iron metalloproteins distribution in bean sprouts**

Aline P. Oliveira, Juliana Naozuka, Cassiana S. Nomura  
USP, Brazil



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| 15:00 - 16:30 h  | <b>Poster session</b><br>Carménère Hall  |
| 16:00 - 16:30 h  | <b>Coffee-break</b>  |
| <b>Session 4 (16:30 - 17:45 h)</b>   |  |
| <b>Chair:</b> Josué Carinhanha Caldas dos Santos (UFAL, Brazil)<br><b>Room:</b> Malbec |  |
| 16:30 - 16:55 h  | <b>From tofu to black fly larvae: metal speciation in novel protein sources</b><br><b>Invited speaker 5:</b> Zoltan Mester (National Research Council Canada, Canada)                                  |
| 16:55 - 17:20 h  | <b>Chemical speciation analysis by HPLC-ICP-MS: from environmental to foodstuff samples</b><br><b>Invited speaker 6:</b> Rodrigo Moreto Galazzi (UNICAMP, Brazil)<br>Sponsored by <b>Analytik Jena</b> |
| 17:20 - 17:45 h  | <b>Speciation and fractionation of rare earth elements in the environment: state of art and new challenges</b><br><b>Invited speaker 7:</b> Amauri Antonio Menegário (UNESP, Brazil)                   |
| <b>Closing Conference</b>  |  |
| <b>Chair:</b> Érico M. M. Flores (UFSM, Brazil)<br><b>Room:</b> Malbec                 |  |
| 18:00 - 18:40 h  | <b>Closing conference:</b><br><b>Could whales suffer from decommissioning of oil and gas pipelines – a bedtime story?</b><br>Jörg Feldmann (University of Graz, Austria)                               |
| <b>Closing Ceremony</b>  |  |
| <b>Room:</b> Malbec  |  |
| 18:45 - 19:30 h  | Márcia Foster Mesko (UFPEL, Brazil)<br><i>Chair of the 7<sup>th</sup> EspeQBrazil</i><br><br>Information and remarks of the 7 <sup>th</sup> EspeQBrazil<br>Poster Awards<br>Closing                    |



# Sponsors Technical Lectures

|   |   |
|---|---|
| <b>Diamond Sponsor technical lecture: Analytik Jena</b>         |   |
| <b>November 30<sup>th</sup>, 2023</b>                           |   |
| <b>Room: Pinot Center - Room A</b>                              |   |
| <b>15:30 - 15:55 h</b>  | <b>High resolution inductively coupled plasma optical emission spectroscopy: technology and special applications.</b><br><b>Speaker: Júlio Cezar Paz de Mattos (Analytik Jena, Brazil)</b>              |
| <b>Gold Sponsor technical lecture: Perkin Elmer</b>             |   |
| <b>November 27<sup>th</sup>, 2023</b>                           |   |
| <b>Room: Pinot Center - Room A</b>                              |   |
| <b>12:15 - 12:40 h</b>  | <b>Updates on new technologies present in Perkin Elmer systems that contribute to analyzes focused on chemical speciation.</b><br><b>Speaker: Marcelo Anselmo Oseas da Silva (Perkin Elmer, Brazil)</b> |
| <b>Gold Sponsor technical lecture: Agilent Technologies</b>     |   |
| <b>November 27<sup>th</sup>, 2023</b>                           |   |
| <b>Room: Pinot Center - Room A</b>                              |   |
| <b>14:30 - 14:55 h</b>  | <b>Hyphenated systems for elemental speciation: advances in HPLC and ICP-MS/MS.</b><br><b>Speaker: Bruno Menezes (Agilent Technologies, Brazil)</b>   |
| <b>Gold Sponsor technical lecture: Nova Analítica</b>           |   |
| <b>November 29<sup>th</sup>, 2023</b>                           |   |
| <b>Room: Pinot Center - Room A</b>                              |   |
| <b>12:15 - 12:40 h</b>  | <b>Total workflow approach to sample preparation for ICP analysis.</b><br><b>Speaker: Mariana Ortega Garcia (Nova Analítica, Brazil)</b>  |
| <b>Gold Sponsor technical lecture: Thermo Fisher Scientific</b> |   |
| <b>November 29<sup>th</sup>, 2023</b>                           |   |
| <b>Room: Pinot Center - Room C</b>                              |   |
| <b>15:00 - 15:25 h</b>  | <b>Analytical technologies - boost your productivity.</b><br><b>Speaker: Felipe Rezende (Thermo Fisher, Brazil)</b>   |
| <b>Sponsor technical lecture: Vert</b>                          |   |
| <b>November 29<sup>th</sup>, 2023</b>                           |   |
| <b>Room: Pinot Center - Room C</b>                              |   |
| <b>12:00 - 12:25 h</b>  | <b>Simplify digester: a reliable alternative for sample preparation aiming at elemental analysis by ICP techniques.</b><br><b>Speaker: Gabriel Gustinelli Arantes de Carvalho (Vert, Brazil)</b>        |