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EDITORIAL

Special Issue CUQA 8

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*Guest Editors of this BrJAC Special Edition on the 8th Uruguayan Congress of Analytical Chemistry (CUQA 8)

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It is with great pleasure that we present this Special Issue of the Brazilian Journal of Analytical Chemistry (BrJAC), dedicated to the 8th Uruguayan Congress of Analytical Chemistry (CUQA 8), held in Montevideo, Uruguay, on October 13–15, 2024. This Special Issue celebrates the vitality, diversity, and scientific maturity of the Analytical Chemistry community in Uruguay and the Southern Cone.

This Special Issue opens with an engaging interview with Prof. Eduardo Dellacassa, who offers a rich and personal reflection on his scientific trajectory, from his rural childhood to becoming one of the most influential Latin American researchers in natural products, metabolomics, and analytical applications in food and pharmaceutical sciences. His reflections on the evolving landscape of analytical chemistry—particularly the need for "evolutionary analytics" as an open and flexible concept—provide a thought-provoking perspective for readers. Complementing this piece, the Point of View article by Prof. Eduardo Méndez addresses key conceptual and methodological aspects of nanometrology, underscoring its growing importance in ensuring measurement quality at the nanoscale. Additionally, the Letter authored by Prof. Ignacio Machado and Prof. Lucía Pareja, titled "Artificial Intelligence: A Transformative Ally in Analytical Chemistry," highlights the expanding role of AI-driven tools in method development, data treatment, and decision-making, and discusses how these technologies are reshaping analytical practice in academic and applied settings.

The research articles featured in this Special Issue represent the scientific breadth showcased during CUQA's 8th edition and illustrate the multidisciplinary character of contemporary analytical chemistry. These contributions include:

"Incidence study of two UV filters (octocrylene and octinoxate) and the synthetic fragrance galaxolide in commercial yellow clam (*Amarilladesma mactroides*)" – an environmental analytical study addressing contaminants of emerging concern in coastal ecosystems.

"Risk-Based Selection of Active Pharmaceutical Ingredients in the Development of HPLC and NIR Methods for Pediatric Preparations" – an applied pharmaco-analytical work integrating quality-by-design principles with spectroscopic and chromatographic method development.

"Development of methods for selenium determination in fish: tools for ecotoxicological studies" – a contribution that highlights the importance of trace-element analysis for environmental and toxicological monitoring.

"Low-cost particulate matter sensor in indoor and external classroom environments" – an innovative approach that demonstrates the relevance of accessible analytical technologies for public health and educational settings.

"Evaluation of *Calendula officinalis* extract as a functionalization agent for gold nanoparticles" – a study at the interface of nanotechnology and bioanalytical chemistry, exploring sustainable routes for nanoparticle functionalization.

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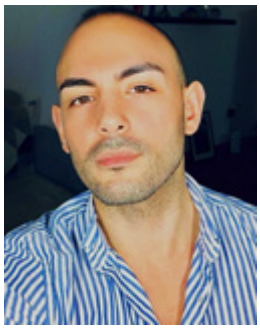
This Editorial is part of the BrJAC Special Issue on the 8th Uruguayan Congress of Analytical Chemistry (CUQA 8 2024).

Together, these articles reflect the scientific rigor and creativity of researchers working in Uruguay and the region. They also underscore the commitment of CUQA to fostering high-quality research, methodological innovation, and meaningful applications across environmental, pharmaceutical, food, and bioanalytical chemistry.

We extend our sincere appreciation to all authors for their valuable contributions and to all reviewers for generously offering their time and expertise to ensure the scientific quality of this collection. We are also grateful to the CUQA 8 Organizing and Scientific Committees for their dedication, and to BrJAC for supporting this Special Issue devoted to strengthening regional analytical chemistry.

We wish all readers an inspiring and enriching reading experience.

Lucía Pareja is a pharmaceutical chemist and holds a PhD in Chemistry. She is a professor in the Department of Chemistry of Litoral at Cenur Litoral Norte, University of the Republic, Uruguay. As a researcher, her work focuses on assessing the presence of organic contaminants at trace levels to address the multiple problems their presence causes in food and the environment. To achieve this, she develops robust analytical methods based on mass spectrometry that allow for the determination of compounds at trace levels. The main objective of this work is the development of multi-class, miniaturized, and environmentally friendly analytical methodologies, following, as far as possible, the principles of green chemistry, for application to problems of national interest.



Ignacio Machado is Associate Professor of Analytical Chemistry at the Faculty of Chemistry, Universidad de la República, Montevideo, Uruguay. He works mainly on atomic spectrometry and mass spectrometry, with a focus on bioanalytical chemistry. He was a postdoc researcher at the Department of Trace Element Analysis, the Institute of Analytical Chemistry of the ASCR, Prague, Czech Republic, in 2017. He has been a member of the Academic Assembly of Faculty of Chemistry, Universidad de la República, since 2018, and the International Medical Geology Association (IMGA) since 2019. He has been a researcher for the National System of Researchers (SNI, Uruguay) since 2016, and of the Basic Sciences Development Program – Chemistry Area (PEDECIBA – Química, Uruguay) since 2017. He is responsible for the BIOESP Group