

29th International Symposium on Electro- and Liquid-Phase Separation Techniques (ITP 2023)

The International Symposium on Electro- and Liquid-Phase Separation Techniques (ITP) is one of the most recognized conferences on separation science due to its long history. This year the 29th edition (ITP 2023) took place in San Felice Circeo (Italy) from 13th to 17th September 2023 and was chaired by Prof. Alessandra Gentili. The symposium covered the latest advances in capillary and microchip electrophoresis, electrokinetic chromatography and electrochromatography, two-dimensional electrophoresis, high-performance liquid chromatography (HPLC), ultra-high pressure liquid chromatography (UHPLC), micro- and nanoscale HPLC and their principal applications in different fields such as pharmaceutical, clinical, food and environmental analysis. The event included 3 plenary lectures, 38 keynote lectures, 31 oral communications and 54 posters and about 124 participants attended from more than 20 countries all over the world.

On Wednesday 13th afternoon, after the Opening Ceremony a Plenary Lecture entitled “Microplastics determination and analysis: an analytical challenge” was exposed by Prof. Javier Hernández-Borges. This talk provided an overview of the problems that microplastics are causing in the environment and the different analytical methodologies developed for their analysis and determination. After that, Prof. Bezhan Chankvetadze presented a keynote focused on the potential of capillary electrophoresis for understanding the chiral recognition mechanisms of cyclodextrins. The session concluded with a Welcome Cocktail with musical accompaniment by musicians from the prestigious Accademia di Santa Cecilia.

On Thursday 14th the meeting lasted from 9.00 a.m. to 18.00 p.m. A total of 15 keynotes and 9 oral communications were presented by PhD, PhD students and full professors. The presentations were divided into 2 parallel sessions which were mainly focused on fundamentals and different applications of capillary electrophoresis and HPLC. After lunch, the first poster session dedicated to the young scientists took place. In this session, 27 posters were held, and an exchange of ideas and interesting discussions were established between the different attendees. During the day two industrial seminars were carried out by Perkin Elmer and Sciex. Finally, the meeting finished with a guided visit to the historic center of San Felice Circeo.

On Friday 15th the session lasted from 9.00 a.m. to 18.20 p.m. During this session, a total of 14 keynotes, 6 oral presentations, and 6 young session poster presentations were presented. Regarding the keynotes and oral sessions, different topics were discussed including capillary electrophoresis and its applications, the use of computation in chiral chromatography, the chemometric analysis of chromatographic data, liquid-phase enantioseparation, drug monitoring, sustainable cellulose-based sorbents or metabolomics, to name a few. After the coffee break, the second plenary lecture of the conference was presented by professor Verónica Pino Estévez, titled “Metal-organic frameworks: from tailored structures to analytical performance in different microextraction strategies and sustainability”. Additionally, during the day, 2 industrial seminars were held by Agilent Technologies and Shimadzu, focused on automatic reinjection for additional confirmation in suspect screening and the advantages of SFC-MS over LC-MS in food safety analysis, respectively. Finally, at evening, the meeting was closed with a street food event on the beach, in which local products were displayed, and a “pasta alla carbonara” workshop was carried out.

On Saturday 16th the session lasted from 9.00 a.m. to 14.00 p.m. In this session, 4 plenary lectures and 16 young oral presentations were presented in two parallel sessions. Keynotes discussed various topics mainly focusing on capillary electrophoresis and its application on metabolomics, chiral planar derivatives, and microscale bioseparations, as well as the quality

control in drug analysis. Young oral sessions, on the other hand, discussed a wide range of themes including enantioselective degradation of chiral pesticides, the use of bimetallic ionic liquids for the analysis of human urine, the enantioselective determination of chiral agrochemicals in urine, the analysis of emerging organic pollutants in microplastics, the development of green deep eutectic solvents for the analysis of phenolic compounds, etc. After dinner, attendees were taken in a half-day tour to The Ninfa Gardens and the Priverno-Fossanova Abbey, where they enjoyed the natural beauty and the magnificent architecture of the region. Finally, the night was closed with a symposium dinner by the pool in which delicious food and music livened up a beautiful night.

On Sunday 17th, the last and final session of the congress took place, lasting from 9.00 a.m. to 12.00 p.m. During the session, 3 keynotes were presented discussing miniaturized techniques for the separation of chiral compounds, the use of complexations for capillary electrophoresis chiral separations, and LC-MS/MS glycomics and glycoproteomics methods for the characterization of biomarkers of neurodegenerative diseases. Moreover, the third and last plenary lecture of the congress was presented by Professor Federico Marini, titled "Single- and multi-block chemometric strategies for metabolomics and systems biology". After this communication, the symposium closing took place and the young scientist and young posters awards were given. Finally, a farewell drink was held in the beach, and the congress was officially ended.

As a conclusion, ITP 2023 was a standout conference, featuring enriching plenary lectures and very interesting keynotes that provided deep insights in a wide range of research fields. The oral sessions fostered in-depth discussions and idea exchange, and, notably, the young oral presentations demonstrated promising emerging talent. Additionally, the poster sessions also showcased diverse, high-quality research. Overall, ITP 2023 exemplified excellence across all aspects of its program.

Acknowledgements

We would like to express our sincere appreciation to SECyTA for their generous financial support, which has facilitated our attendance at the 29th International Symposium on Electro- and Liquid-Phase Separation Techniques (ITP 2023), as well as, for their unwavering dedication to fostering the development of young researchers and promoting knowledge dissemination.

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