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EDITORIAL

Microchimica Acta with X international congress on analytical nanoscience and nanotechnology, X NyNA 2022

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Microchimica Acta is a reputable journal addressed to the analytical side of microsystems and nanomaterials. As in other occasions, it has sponsored and collaborated with the development of the International Congress on Nanoscience and Nanotechnology in his last edition (X NyNA 2022, September, Ciudad Real, Spain). The topic of the congress is very tight consistency with the scope of the journal. Thus, *Microchimica Acta Editors*, in view of the quality of the Congress, accepted the edition of this *Topical Collection*.

As in many scientific and technical areas, Nanoscience and Nanotechnology (N&N) have had a deep impact in Analytical Science. Thus, the so-called Analytical Nanoscience and Nanotechnology (AN&N) is an emerging and trending analytical hot topic for the research activities, as it introduces important achievements, but at the same time a wide range of analytical challenges. The international congress and the scientific works presented in it have remarking these key facets of the AN&N, as well as the proper interdisciplinary involved in AN&N due to the types of information from the nanoworld, which are very wide and diverse (physical and chemical characteristics and properties). This means that applications and research studies cover a high variety of topics and working fields, in a clear interdisciplinary dimension (Fig. 1).

The guest editor of the Topical Collection would like to acknowledge the contributions of all authors participating in this special issue. The published articles are good examples of recent developments and interesting analytical applications in this very active field of current research. Also, the gratitude to the Editorial Office and Editors for their assistance and support. We are sure of the valuable source of information for *Microchimica Acta* journal readers. A brief summary of the contributions is reported below intended to be grouped by topics .

In the side of using nanomaterials as analytical tools, interesting contributions are included in this *Topical Collection* such as the use of γ-cyclodextrin-graphene quantum dots-chitosan modified screen-printed electrodes for sensing of fluoroquinolones (https://doi.org/10.1007/s00604-023-05646-w), an electrochemical sensing platform based on gold-nanoparticles-PDDA for benzyl alcohol determination (https://doi.org/10.1007/s00604-023-05690-6), the detection of E. Coli O157:H7 by lateral flow immunoassay with silver enhancement (https://doi.org/10.1007/s00604-023-05834-8), the design of a colorimetric nanostructured sensor for the quantification of low concentrations of acid vapors (https://doi.org/10.1007/s00604-023-05723-0), extraction methods for silver species using silver-based nanomaterials (https://doi.org/10.1007/s00604-023-05777-0), the use of polypyrrole ferrite microparticles for separation of mycotoxins by HPLC-MS (https://doi.org/10.1007/s00604-023-05763-6), the in situ enzymatic generation of Au/Pt nanoparticles for the determination of tyramine (https://doi.org/10.1007/s00604-023-05698-y), and the combination of MNAzymes and Au-nanoparticles for visual detection of miRNA (https://doi.org/10.1007/s00604-023-05698-y).

Some contributions deal with the analytical nanometrology (ANM), which is one of the present challenges of the AN&N. Thus, the separation of nanoplastics by Asymmetric-Flow Field Flow Fractionation coupled to MALS and UV-Vis detectors (https://doi.org/10.1007/s00604-023-05851-7), as well as the detection, quantification, and characterization of microplastics using electroanalytical techniques (https://doi.org/10.1007/s00604-023-05780-5), and the study of bioaccumulation of TiO_2 nanoparticles in seaweed (https://doi.org/10.1007/s00604-023-05849-1).

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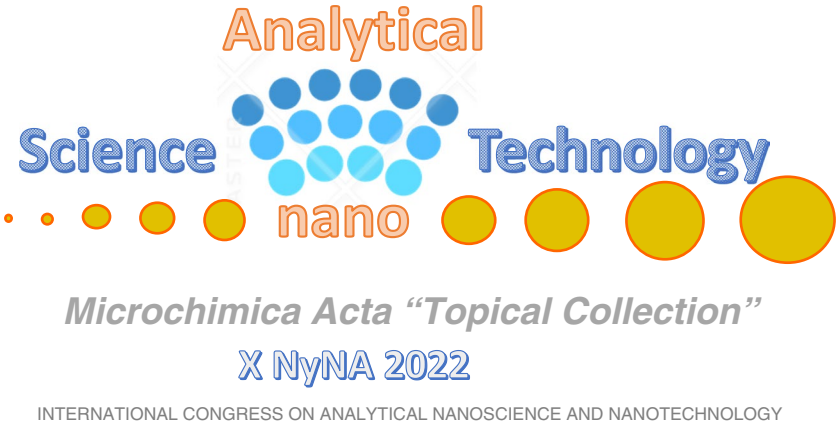

Fig. 1 Logo of the International Congress on Nanoscience and Nanotechnology (X NyNA 2022)

Other contributions are related to biomedical studies involving nanosystems (https://doi.org/10.1007/s00604-023-05712-3), the usefulness of MOFs and DPPC liposomes as drug delivery systems (https://doi.org/10.1007/s00604-023-05692-4), and the AN&N using micro (https://doi.org/10.1007/s00604-023-05786-z) and nanochannels (https://doi.org/10.1007/s00604-023-05835-7).

This special issue is a short highlight of the potentiality of the AN&N in a wide variety of fields of application, from basic to practical analytical developments, involving nanomaterials and nanostructured systems as analytical tools with implicat ions in almost all the steps of the analytical process (sample preparation, role in instrumental separation techniques, detection, sensors, or screening methods), as well as the growing interest in the detection and determination of nanomaterials in samples of interest in food safety and control, environment, clinical and biomedical, etc. The analytical control of nanostructured organic materials as drug carriers and delivering systems is a new and interesting facet of the present AN&N.

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Author contribution Ángel Ríos, Chairman of the X NyNA Congress and Guest Editor for this Topical Collection.

Declarations

Conflict of interest The author declares no competing interests.

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