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EDITORIAL

Analytical Science in France

Christian Rolando · Philippe Garrigues

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Analytical balance is at the heart of work by the famous French chemist Antoine Lavoisier, who relied on advanced instruments of the time that can still be discovered at the Arts et Métiers Museum in Paris. Analytical chemistry has been one of the fields of the Société Chimique de France (SCF) since its creation in 1857. The SCF was the owner of the journal *Analusis*, which merged with other national analytical chemistry journals and led to the creation of the European journal *Analytical and Bioanalytical Chemistry*. The "Division de Chimie Analytique" (DCA), which took the initiative for this special issue on Analytical Chemistry in France, is part of the SCF and gathers together analytical chemists in France. Dedicated working parties, such as Analysis in the Chemical Industry, French Chemometrics, Electrochemistry, and Environmental Chemistry, inside the SCF are also related to the DCA. Other societies outside the SCF also gather specific scientific communities together, such as the French Association of Separative Sciences (AFSEP), the French Society for Mass Spectrometry (SFSM), the French Society for Electrophoresis and Proteomics (SFEAP), the French Group on Magnetic Resonance (GERM), the French Society of Stable Isotopes (SFIS), and the French Society for Analytical Toxicology (SFTA).

Analytical chemistry is the link between the development of instrumentation and solving scientific problems. Any progress in analytical chemistry has a positive and unpredictable impact on other fields of science. This is clear for techniques that allow the observation of new objects (i.e., nano-objects), but it is also true for rapid, simple, and less-expensive techniques that allow the collection of data from a large set of samples (i.e., biological and environmental samples). Progress in instrument sensitivity also allows the observation of individual events (i.e., one single molecule) rather than that of an average of many events and affords new insights into system dynamics. In all of these aspects, data treatment, chemometrics, and informatics have an increasing role.

This special issue comprises 33 contributions that cover a wide range of analytical expertise in France, existing both in universities and at research institutes. A large number of papers deal with the development of sampling, separation, and detection techniques in the fields of biology, medicine, and environmental science. Several papers present the development of chemical and biological (nano)sensors based on electrochemical and optical detection. Techniques for the characterization of biomolecules are also presented for proteins and metabolites in human fluids. All of these contributions represent a non-exhaustive snapshot of French competence in analytical chemistry.

Analytical chemistry is a key science for improved quality of life and affords greater knowledge in fields strongly related to present and future problems for society, such as those related to human health, new energy sources, food resources, climate change, geological records, forensic science, and cultural heritage. The cross fertilization between disciplines (chemistry, physics, and biology) has led to the development of instruments that are adapted to these specific objectives. The best achievement for a discovery in analytical chemistry is reached when a wide range of applications become possible in many research fields, for example, magnetic resonance or mass spectrometry. We hope that some of the papers published in this issue reach this level of analytical development.

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C. Rolando (✉)
Department of Chemistry, Miniaturisation pour la Synthèse l'Analyse et la Protéomique, USR CNRS 3290, Université Lille 1, Sciences et Technologies, Building C4,
59800 Villeneuve d'Ascq, France
e-mail: Christian.Rolando@univ-lille1.fr

P. Garrigues
Institut des Sciences Moléculaires, UMR 52 55 CNRS, Université de Bordeaux1, 33405 Talence Cedex, France

We hope you enjoy reading this special issue on Analytical Chemistry in France and it is our pleasure to invite you to the XVIIIth EuroAnalysis congress, chaired by the guest editors, which will take place from 6th to 10th September, 2015, in Bordeaux (France).

Christian Rolando is Senior Scientist at the Centre National (CNRS, French National Center for Scientific Research). He works at the University of Lille 1 in the Miniaturization for Synthesis, Analysis and Proteomics laboratory. Christian Rolando has coauthored more than 200 papers. His research in analytical chemistry deals with mass spectrometry and combined methods to join organic chemistry and analysis. He has also coauthored several papers on the electrochemistry of polyphenols. His current research focuses on bidimensional FT-ICR MS and top-down proteomics. Dr Rolando is a former President of the Analytical Division of the Société Chimique de France, a member of the EuCheMS Division of Analytical Chemistry steering committee, and a member of the international board of Analytical and Bioanalytical Chemistry.

Philippe Garrigues is a CNRS Research Director and currently the Head of the Institute of Molecular Sciences at the University of Bordeaux. His research interests are centered around analytical aspects related to the detection of organic pollutants in environmental matrices and the toxicological effects of these compounds. His recent research interests include REACh regulation and how analytical chemistry is developed for its implementation, as well as life cycle assessments of chemicals. Dr Garrigues has authored about 180 publications. He is also an Editor for Analytical and Bioanalytical Chemistry and Editor in Chief of Environmental Science and Pollution Research.