



# Introduction to the Special Section of the 1st International IMEKOFOODS Conference 2014

**Claudia Zoani**

*Italian National Agency for New Technologies, Energy and Sustainable Economic Development affiliation, Rome, Italy*

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**Section Editor:** Claudia Zoani, Italian National Agency for New Technologies, Energy and Sustainable Economic Development affiliation, Rome, Italy

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**Corresponding author:** Claudia Zoani, email: [claudia.zoani@enea.it](mailto:claudia.zoani@enea.it)

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Dear Reader,

this first issue in 2016 of ACTA IMEKO contains a special section dedicated to a selection of papers related to the 1st International Conference IMEKOFOODS “Metrology Promoting Objective and Measurable Food Quality and Safety”. The Conference, which took place in Rome (Italy) on 12nd - 15th October 2014, was organised by ENEA (the Italian National Agency for New Technologies, Energy and Sustainable Economic Development) and the IMEKO TC 23 “Metrology in Food and Nutrition” with the general objective to promote the discussion, the scientific debate and the encounter between the different realities that revolve around the “world of measures”, promoting the harmonization and integration and addressing the “world of research” to the emerging needs of the civil society and the productive sectors.

This issue contains 7 papers representing the extended versions and advancements of papers presented at the 1st IMEKOFOODS Conference and selected - at the end of the Conference - by an ad hoc Committee.

The first paper describes an LC-tandem Mass Spectrometry method developed by researchers from the Institute of Sciences of Food Production of the Italian National Research Council (ISPA-CNR, Italy) as a screening tool for multiple detection of allergenic ingredients in complex foods, with an application and a follow-up for sensitive multiplex detection of five allergenic ingredients in processed, complex food matrices.

The second contribution describes the full “in house” method validation performed by the European Union

Reference Laboratory for Chemical Elements in Food of Animal Origin (EU RL-CEFAO) for the direct determination of Pb and Cd in honey by Graphite Furnace Atomic Absorption Spectroscopy (GF-AAS) and its efficacy and capabilities especially considering its low-cost and time saving peculiarities, carried out with the aim to provide technical support to the network of the EU National Reference Laboratories (NRLs).

The third paper presents a work in cooperation among different Institutes of the Jožef Stefan Institute of Ljubljana (Slovenia) on analytical approaches based on the definition of the multi-elemental composition of food products for the geographical origin determination, especially focused on the characterisation of Slovenian milk by three different methods: Energy Dispersive X-Ray Fluorescence Spectrometry (EDXRF), k<sub>0</sub>-Instrumental Nuclear Activation Analysis (k<sub>0</sub>-INAA) and the Inductively Coupled Plasma Mass Spectrometry (ICP-MS).

The fourth paper is authored by researchers from the University of Primorska and the University of Ljubljana (Slovenia) and illustrates a study - carried out with the support of the EU founded project Uelije - aimed to determine the variations in the levels of phenolic compounds and sensory properties during the storage of virgin olive oil.

The fifth contribution, authored by researchers of the University of Genoa, covers the topic of spectroscopic fingerprinting techniques for food characterization describing how non-selective signals can be used for obtaining useful information about a food and, as an example, shows the

construction of a reliable quantitative model for the detection of addition of barley to coffee using NIR spectroscopy and chemometrics.

The sixth contribution, authored by researchers from the University of Florence, gives an introduction on biosensor devices with a focus on label free and real-time affinity-based sensing, providing some applications for different classes of analytes of interest in food analysis like pesticides, GMOs and pathogens using optical and gravimetric sensors.

The last paper, authored by researchers of the Chemical Sciences and Technologies Department of the University of

Rome "Tor Vergata", presents some examples of rapid, simple and cost effective screening methods that can be realized by the use of Screen Printed Electrodes (SPEs) coupled with portable and cheap instrumentation for the monitoring of food quality & safety, together with some applications to real samples for the determination of arsenic, pesticides and toxins aimed to demonstrate their effectiveness.

I would like to thank all those who contributed to this issue and made possible its realisation: starting from the authors, to the reviewers and the layout editors, up to the journal managers.

Hoping you will have a fruitful and interesting reading!