European Network for Chemical Elemental Analysis by Total Reflection X-Ray Fluorescence

Diane Eichert [1] and Laura Borgese [2]

(1) ELETTRA – Sincrotrone Trieste, Area Science Park, 34149 Basovizza, Trieste, Italy
(2) INSTM and Chemistry for Technologies Laboratory, Department of Mechanical and Industrial Engineering, University of Brescia, via Branze 38, 25123 Brescia, Italy
diane.eichert@elettra.eu, laura.borgese@unibs.it

The COST Action CA 18130, "European Network for Chemical Elemental Analysis by Total Reflection X-Ray Fluorescence" [1], acronym ENFORCE-TXRF, aims to coordinate research and building capacity in the field of elemental analysis by total reflection X-ray fluorescence spectroscopy (TXRF) in order to develop and assess new tools, protocols, methodologies, and instrumentation for the screening and accurate determination of elemental and co-elemental presences, occurrences and concentrations. The elements targeted are ranging from potentially toxic elements and heavy metals, e.g. for assessing contaminants in health and safety issues, to nutrients, beneficial elements and components in food, and to trace elements, with their delicate threshold between deleterious exposure and beneficial effect. Such analysis may have tremendous repercussions in quality control practices and even in establishing new regulatory policy.

This Action will create an infrastructure for scientific communication, exchange and collaboration to enhance technical standards, advance measurement science. This will foster new research activities and will allow to combine the various partners' related expertise in chemistry, physics, life science and engineering. This network will provide the information and tools to maximize European competitiveness in forming and attracting talented scientists, supporting new sources and capabilities that improve research productivity, quality, dissemination, efficiency, and career development.

The outcome is a novel technology portfolio for TXRF applications that will benefit science, economy and the society. The activities will enable breakthrough scientific developments leading to new concepts and products, increasing Europe's research and innovation capacities, and supporting European Commission regulation organizations in crucial fields as environmental protection, food safety, life science, and nanotechnologies. ENFORCE TXRF will create well-organized and sustainable partnerships, necessary step to successful joint projects via a harmonization and dissemination of the TXRF scientific knowledge and by actively engaging new stakeholders.

The Action will attract and form the next generation of scientists, ensuring that Europe will remain at the frontline of research for the development of new tools for the chemical analysis.

ENFORCE-TXRF has formally started on March 13th 2019 with its first Managing Committee meeting and will remain in force for the next 4 years. This Action is opened to all researchers interested in contributing in the TXRF field of research, worldwide.

An overview of the structure of the Action, its concrete aims and the contents and relevance of its working groups will be given.

Reference:
[1] https://www.cost.eu/actions/CA18130/#tabs|Name:overview

Acknowledgments: This abstract is based upon work from COST Action CA18130 supported by COST (European Cooperation in Science and Technology), www.cost.eu