

With no doubt engineered nanomaterials are an important innovation which entered several fields of daily life (e.g. medicine, food, cosmetics). Besides the beneficial properties of this new technology, questions regarding potential toxicological and environmental risks as well as the behavior of nanomaterials in complex matrices occurred. Furthermore, “nanomaterial regulation” was highly needed which provoked the European Commission to release a definition on nanomaterials in 2011. However, research/activities in the field of nanomaterials require both valid and robust analytical techniques. Up to now a set of analytical techniques exist in the field of nanomaterial analysis which perfectly complement among each other.

One powerful technique that gains continuously in importance is Field-Flow Fractionation (FFF) coupled on-line with Mass Spectrometry (MS) (especially ICP-MS). FFF is a powerful technique, but not easy to handle and specific workshops addressing challenges, solutions, practical experience and up-to-date applications of FFF-MS in the context of nanomaterial analysis are scarce. Therefore, BfG, University of Vienna and Helmholtz-Centre for Environmental Research organize an annual workshop on Field Flow Fractionation and Mass Spectrometric techniques. In 2017, the 5th Workshop on Field Flow Fractionation and Mass Spectrometric techniques (FFF-MS) focused on the analysis of nanoparticle in environmental- & life-sciences as well as consumer products. This workshop was financially support by the NORMAN network.

The general structure of the two-day workshop comprised two keynote presentations given by experts in the field as well as presentations given by participants in particular PhD students facilitating fruitful discussions between young and experienced scientists in the field. Two survey lectures were given by Dr. Ralf Kaegi (EAWAG aquatic research, Zurich, Switzerland) and Prof. Spiros A. Pergantis (University of Crete, Department of Chemistry, Crete, Greece). Scientific presentations and posters completed the agenda at day one. During the afternoon session of day-one attendees participated in a tutorial on FFF analysis where challenges in method development and their solutions were discussed. At day two practical lab work was conducted. The University of Vienna (Environmental Geosciences) has several FFF systems (flow and centrifugal) and on-line coupled detectors (e.g., SLS, DLS, ICP-MS) available where users gathered practical experience and discussed existing problems. The hands-on training was restricted to 10 participants.

Number of participants: 24 participants (day one), 9 participants (day two); excluding organization committee.



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