

**ENVIRONMENTAL SPECIATION ANALYSIS BY CHROMATOGRAPHY
COUPLED WITH ELEMENTAL AND MOLECULAR MASS
SPECTROMETRY**

J. SZPUNAR, R. LOBINSKI

EP 132 CNRS, Helioparc, 2, av. Pr. Angot, 64 000 Pau, France

ABSTRACT

Recent advances in the application of elemental (inductively coupled plasma ionization, ICP) and molecular (electrospray ionization, ESI) mass spectrometry for environmental species-selective analysis is discussed. Regarding volatile organometallic (Sn, Hg, Pb) anthropogenic contaminants the topics high-lighted include: time resolved introduction of analyte species into ICP MS by multi-capillary gas chromatography, and integration of the sample preparation and separation steps in a single speciation-dedicated instrument. The current state of the art of HPLC-ICP MS for speciation analysis of not volatile organometalloid (As, Se) compounds and heavy metal complexes in environmental biota is illustrated using the examples of two case studies: arsenic ribosides in algae and cadmium complexes with phytochelatins. Particular attention is given to the limitations of HPLC-ICP MS in terms of signal identification. The potential of ESI MS/MS for the purpose is demonstrated.