

Detection of heavy metals in different biological samples

Giuseppe Baldacchini^{a)}, Carlo Bellecci^{e)}, Francesca Bonfigli^{a)}, Tiziana Del Borrello^{f)}, Anatoly Faenov^{b)}, Francesco Flora^{a)}, Massimo Francucci^{c)}, Pasqualino Gaudio^{c)}, Antonella Lai^{a)}, Tania Limongi^{d)}, Sergio Martellucci^{c)}, Luca Mezi^{a)}, Rosa Maria Montereali^{a)}, Libero Palladino^{d)}, Tatiana Pikuz^{b)}, Anna Poma^{f)}, Armando Reale^{d)}, Lucia Reale^{d)}, Maria Richetta^{c)}, Antonio Ritucci^{d)}, Alexander Rydzy^{c)}, Laura Spanò^{f)}, Giuseppe Tomassetti^{d)}, Adele Tucci^{f)}, Maria Aurora Vincenti^{e)}.

a) ENEA, Centro Ricerche Frascati, Via E. Fermi 45, 00044 Frascati, Italy.

b) MISDC of VNIIFTRI Mendeleev, Moscow region, 141570, Russia

c) Università di Tor Vergata, Dip. Di Ingegneria, Via Del Politecnico 1, 00133 Roma, Italy.

d) Università dell'Aquila e INFN, Physics Dept., Coppito, 67010 L'Aquila, Italy.

e) ENEA, Centro Ricerche Casaccia, Via Anguillarese 301, 00060 S. Maria di Galeria, Rome, Italy.

f) Università dell'Aquila, Dipartimento di Biologia di Base ed Applicata, Coppito, 67010 L'Aquila, Italy

Different biological samples (typically leafs) have been analyzed by soft X-ray microradiography at different wavelength values in order to detect their heavy metals intake, either as a natural content (for example magnesium) or induced by artificial doping. Qualitative and quantitative measurements of the metal intake have been obtained by microradiography at 1-2 keV photon energy. These results are interesting for phytoremediation applications. The technique has been applied also for the detection of atmospheric pollutant intake into lichens. Preliminary results of all these different topics will be shown.