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### Potential release of *in vivo* and *ex vivo* traces metals from metallic medical implants in the human body

Metal ion release from metallic materials, e.g. metallic alloys and pure metals, implanted into the human body in dental and orthopedic surgery is becoming a major cause for concern. This lecture provides an overview of both metallic alloys and pure metals used in implant materials in dental surgery. Additionally, a short section is dedicated to important biomaterials and their corrosive behavior in both real solutions and various types of media that model human biological fluids and tissues. The presentation gives an overview of analytical methods, techniques and different approaches applied to the measurement of *in vivo*, *ex vivo* trace metals released into body fluids and tissues from patients carrying metal dental implants. Reference levels of ion concentrations in body fluids and tissues that have been determined by a host of studies are presented in this lecture.

### Biography

Henryk Matusiewicz is Professor of Chemistry in the Department of Analytical Chemistry at Poznan University of Technology, Poland. He has published over 150 original publications in the area of trace element analytical chemistry, 10 authoritative reviews, 9 invited book chapters and co-edited one book. He has presented over 100 contributed or invited talks at national and international conferences and symposia on spectroscopy and analytical chemistry. He completed his PhD degree in Chemistry at Poznan University of Technology in 1973 and Dr. Sc. degree (habilitation) in analytical chemistry at the University of Warsaw in 1987. He was a Post-doctoral research associate at the Department of Chemistry, Colorado State University, USA (1975-1978) and in the Department of Chemistry, University of Massachusetts, USA (1982-1984). He was also an International Visiting Scientist at the Elemental Analysis Research Center, US Food and Drug Administration, Cincinnati, USA (1984-1985), Distinguished Visiting Scientist at the National Research Council of Canada, Institute for Environmental Chemistry, Ottawa, Canada (1988-1986, 2011; 3 months each year), Visiting Professor (DAAD) at the University of Hannover, the University of Dortmund and at Max-Planck-Institute für Metallforschung, Dortmund, Germany (1992) and Visiting Professor at the University of Oviedo, Spain (1997).

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