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## INVITED LECTURE - Radionuclides and radiopharmaceuticals at POLATOM

*Wednesday 19 September 2012 09:30 (20 minutes)*

Radioisotope Centre POLATOM is a state owned laboratory in the structure of the National Centre for Nuclear Research. POLATOM develops techniques for practical application of radioisotopes in various sectors, among them majority of products and services used in health care. POLATOM is supporting domestic and international users in highly specialized radiopharmaceuticals and radiochemicals for nuclear medicine and related fields, among them a number of products utilizing radionuclides irradiated in the multifunctional MARIA Research Reactor. POLATOM's facilities are well equipped and certified for manufacturing of radiopharmaceuticals. We are also carrying out extensive research programs on the new developments in the application of radionuclides supported by national and international multidisciplinary collaborations.

The main research and development domains are:

1. Investigation of novel biomolecules as carriers for radionuclides and preliminary assessment of their diagnostic and/or therapeutic utility.
2. Development of technologies for the production of high specific activity radionuclides in nuclear reactors and accelerators, using highly enriched target materials and modern separation techniques.
3. Development of methods for radioactivity measurement and assessment of radionuclidic purity (determination of  $\alpha$ ,  $\beta$ , and  $\gamma$  impurities).
4. Chemical and pharmaceutical development as well as in vitro and in vivo assessment of biological activity of new radiopharmaceuticals for clinical applications.

A very good communication network with domestic nuclear medicine units and research institutes interested in radiopharmaceutical development as well as with several international research institutions has been developed, supported by scientific and applied grants. The Centre participates in research projects coordinated by the International Atomic Energy Agency (IAEA) as well as in the European cooperation program of scientific and technical cooperation COST.

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