European laboratories for Actinide research: the ACTINET pooled facilities

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ACTINET is a European Network of Excellence supported by the EU, dedicated to basic actinide physics and chemistry. It brings together expertise and facilities with the objective of strengthening the concerned scientific community.

In view of challenges related to the management and disposal of long-lived nuclear waste, and the exploration of new nuclear energy generation concepts, the networking and development of international expertise in actinide sciences is indispensable. Appropriate facilities for actinide research are becoming rare. In order to catalyse research in actinide sciences, ACTINET aims to coordinate and open the available laboratories, and promote notably young scientists from universities to get involved. In order to enhance the potentialities for research on radioactive material, European Actinide laboratories are networked and access for scientists is promoted and supported. Laboratories operated by CEA (France), ITU (Joint Research Centre, EU), INE-FZK (Germany), SCK-CEN (Belgium), IRC-FZR (Germany) and PSI (Switzerland) are the ACTINET 'pooled facilities'. A broad variety of analytical and radioanalytical instrumentation, hot cell and glove box equipment thus becomes accessible for researchers in universities and national institutions interested in actinide research. Accessible facilities include state-of-the-art techniques as synchrotron-based X-ray beamlines, nuclear microprobe, laser-, mass-, NMR spectroscopy and various microscopic techniques as SEM, TEM, AFM. The availability of advanced analytical methods within the frame of international cooperations is believed to effectively advance actinide research in Europe.

ACTINET objectives are:
to provide access to the major actinide laboratory facilities in Europe (coordinated as **ACTINET pooled facilities**)
to improve scientist mobility between member institutions
to promote excellence by supporting selected R&D projects taking advantage of the pooled facilities.

ACTINET also promotes knowledge dissemination, education and training in order to ensure highest level of expertise in Europe, in particular with the yearly ACTINET Summer School.

ACTINET research activities cover
Chemistry and Physics of Actinides in solution and solid phases
Chemistry of Actinides in a geological environment
Chemistry and Physics of Actinide materials under and after irradiation