



**of the European Atomic Energy Community (Euratom)
for nuclear research and training activities (2007-2011)**

Collaborative Project

<i>GETMAT</i>

Project title: **GEN IV and Transmutation MATerials**

Project number: **212175**

Project coordinator: **Forschungszentrum Karlsruhe, Germany**

FZD participant: **Institute of Safety Research**

Starting date: **01.02.2008**

Duration (months): **60**

Summary

In FP5 and FP6, a number of significant projects have been launched, aimed at investigating innovative strategies for safe and optimized radioactive waste management. In particular P/T strategies based on the use of Accelerator Driven Systems are being addressed within the integrated project EUROTRANS. Moreover, during FP6, projects were also initiated to study advanced systems, as defined in the frame of the Generation-IV: VHTR, GFR, LFR, SFR, SCWR and MSR. Some of these innovative systems (i.e. those based on fast neutron spectra) allow also the deployment of optimized waste minimization technologies, compatible with sustainability and increased proliferation resistance goals.

New issues and challenges related to the development and qualification of structural materials for core and primary components have been recognized as crucial in all these systems to ensure their safe and reliable operation. The objective of the proposed project is to integrate in a comprehensive and common effort within the European materials laboratories the R&D activities needed to select and characterize (in terms of mechanical behaviour, coolant compatibility and particle irradiation effects) structural materials with required properties for advanced nuclear reactor and transmutation systems.

Specific items have been identified and selected in order to focus the proposed project on cross-cutting issues, applicable to more than one system, by taking advantage of expertise and experimental facilities operating in the area of both fission and fusion technology programs.