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Research and Innovation Action (RIA)

Cebama

Project title: **Cement-based materials, properties, evolution, barrier functions**

Project coordinator: **Karlsruher Institut für Technologie, Karlsruhe, Germany**

Website: www.cebama.eu

HZDR participant: **Institute of Resource Ecology**

Starting date: **01.06.2015**

Duration (months): **48**

Summary

The HORIZON 2020 EURATOM Collaborative Project “Cement-based materials, properties, evolution, barrier functions (Cebama)” is developed with the overall objective to support implementation of geological disposal of nuclear waste by improving the knowledge base for the Safety Case.

Cement-based materials are highly relevant in this context, being used as waste forms, liners and structural components or sealing materials in different types of host rocks and disposal concepts.

Specific objectives of Cebama are (i) experimental studies of interface processes between cement based materials and host rocks or bentonite, and assessing the specific impact on transport properties, (ii) quantifying radionuclide retention under high pH cement conditions, and (iii) developing comprehensive modeling approaches.

Modeling will support interpretation of results and prediction of the long-term evolution of key transport characteristics such as porosity, permeability and diffusion parameters especially in the interface between cement based materials and the engineered and natural barriers.

Further objectives cover dissemination of results to scientific and non-scientific stakeholders as well as training and education of young professionals for carrying over the expertise into future implementation programmes. To a large extent, the experimental and modelling work will be part of PhD theses, aiming at high scientific-technical impact and quality with respect to peer-reviewed publications.

The 4 years project is implemented by a consortium of 27 partners consisting of large Research Institutions, Universities, one TSO and one SME from 9 EURATOM Signatory States, Switzerland and Japan. National Waste Management Organizations support Cebama by co-developing the work plan, participation in the End-User Group, granting co-funding to some beneficiaries, and providing for knowledge and information transfer.