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# Clay CONFERENCE

2022  
13-16 June / Nancy - France



**8<sup>TH</sup> INTERNATIONAL CONFERENCE**  
ON CLAYS IN NATURAL AND ENGINEERED BARRIERS  
FOR RADIOACTIVE WASTE CONFINEMENT

Co organized by



COVRA



nagra

In collaboration  
with



In a number of countries, clays are being considered as the potential host rock for geological disposal of radioactive waste. Also, the use of compacted swelling clays as an engineered barrier component is envisioned within the multi-barrier concept in a wider range of host rocks, such as bentonite-based backfill material for different rock options or repurposed clay rock material especially for clay host rocks.

The current world situation with regard to geological disposal now includes countries such as Finland, where a geological repository facility ('repository') is under construction; Sweden and France, where geological repository projects are well advanced (site selection, licensing application process); countries such as China, where underground research laboratories are being constructed, and countries such as the UK, Germany and Japan that each now have a structured siting strategy.

Multidisciplinary approaches covering geology, mineralogy, geochemistry, rheology and the geo-mechanics of clays and clay rocks are required in order to ensure detailed characterisation of geological host formations and surrounding geology and of their confinement properties. These must also assess the behaviour of engineered and natural barriers with time, from the repository operational phase to post-closure phase in the long term, when subjected to various types of perturbations induced by the construction, operation and evolution of such disposal facilities, including natural events.

Due to the timeframes of such projects and programmes, the scientific and technical knowledge require sharing, adequate Human Capacity Building and in depth Knowledge Management.

The Clay Conference, which is being held for the 8<sup>th</sup> time since 2002, has established itself as an ideal forum for presenting recent developments in repository design and construction, and the main findings of research - both at the national and international level - in the context of long term safety assessments. Considering design, construction, operation and post-closure, the Conference provides a unique networking platform for sharing scientific and technological knowledge. This involves gathering together experienced specialists and newcomers from various disciplines related to clays, as well as scientists and technicians from organisations engaged in radioactive waste disposal or in other uses of the subsurface in which clay barriers play an important role.

The programme will feature a balanced mix of high-level keynote speeches, concurrent oral sessions and poster presentations, with ample time for informal contacts and lively discussions. It will cover a wide range of topics related to natural argillaceous geological barriers and clay-based engineered barrier systems, including laboratory experiments on clay samples, in situ experiments in underground research laboratories, mock-up demonstrations, natural analogues, numerical modelling, system integration approaches and monitoring. **The program will emphasize the work of young research students and young members of organizations involved in radwaste management.**

The conference is organised by Andra (France), in cooperation with Nagra (Switzerland), COVRA (The Netherlands), NUMO (Japan), NWMO (Canada), ONDRAF/NIRAS (Belgium), PURAM (Hungary), RWM (United Kingdom), SKB (Sweden), SURAO (Czech Republic), US DOE (USA), East China University of Technology (China), BGE/BGR (Deutschland) and Enresa (Spain).

## COMMITTEES

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### Local Organising Committee

Event coordination: Marie-Anne BRUNEAUX / Secretariat: Audrey AVIGNON and Zélie LEYSSENOT

## KEY DATES

Mai 2022 Detailed program  
June 13-16 2022 Clay Conference

# MAIN TOPICS

## Overviews

**Topic 1:** Repository projects and programmes, including RD&D programmes for clay-based disposal systems (natural and engineered barriers) worldwide

## Characterisation and modelling of undisturbed clay-based systems

**Topic 2:** Geology, Hydrogeology and hydro-geochemistry

**Topic 3:** Fluid (Water, gas) transport and solute migration

**Topic 4:** Hydro-mechanical properties

## Characterisation, conceptual understanding and modelling of host rock and repository interaction processes with time

**Topic 5:** Hydro-mechanical and gas transport processes during the excavation, operational and post-closure phases (from near-field to far-field)

**Topic 6:** Temperature-induced effects (THM and C coupled processes)

**Topic 7:** Chemical processes, including microbial effects

**Topic 8:** Fluid flow and radionuclide migration

**Topic 9:** Mechanical, geochemical and hydraulic impacts triggered by long-term external geodynamic processes (natural events such as climate evolution, erosion, seismic hazards...)

## Repository construction and operation, long-term performance and monitoring for clay-based disposal systems

**Topic 10:** Technological operations and performance assessment of components

**Topic 11:** Monitoring (from initial state to post-closure and from sensors to data management)

**Topic 12:** Digitalisation/Building Information Modelling (BIM) and Knowledge Management

## REGISTRATION

Registration fee  
Professionals EUR 700 / Students EUR 250

## VENUE

CENTRE PROUVÉ  
1, Place de la République - 54000 Nancy - FRANCE

## CONTACTS

For more information, please contact the Conference Secretariat at [secretariat@clayconferencenancy2022.com](mailto:secretariat@clayconferencenancy2022.com)