Thematic Session 29

Stability of smectite from experiments to natures

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Worldwide, the construction of final repository for high-level radioactive waste (HLRW) have been proposed, and so far many countries have had extensive research programs to develop safe and sustainable repository concept. Smectite rich clay is well known as material for engineered barrier systems (EBS) for high level waste (HLW)-repositories that meet long term stability as buffer- and backfill materials. The symposium is adjusted to studies dealing with the determination of the stability and behaviours of smectite through experimental works. Also studies from the largest laboratory Nature and Modelling are welcome. A major challenge is to transfer the results revealed by the experiment studies to create a robust safety case. Thus the focus is attained to natural analogues to later model extremely slow reaction processes between bentonite and surrounded environments (clay-canister interaction, clays and fluids interaction…). Smectite alteration studies from nature will act as a bridge between disparity of laboratory works and realistic scenarios as well as timescales between experimental work and repository lifetime and the safety case.

Keywords: Clay, Montmorillonite, Smectite, Stability, Alteration, Experiment, Natural analogue.

Potential Journals: Clays and Clay Minerals, Clay Minerals, Applied Clay Minerals.