

**3<sup>d</sup> BELBAR PROJECT ANNUAL WORKSHOP**  
**Madrid - 5-6 March, 2015**

**The meeting will be held at CIEMAT (Centro de Investigaciones  
Energéticas, Medioambientales y Tecnológicas)  
Avenida Complutense, 40 – 28040 MADRID**

**Meeting Room: Building 1- Assembly Hall (SALÓN DE ACTOS)**

**Poster Session: Building 1 – Room C (2<sup>nd</sup> Floor)**

**Coffee: Building 1 - Meeting Cafeteria (2<sup>nd</sup> Floor)**

At the entrance, at the security check, you will receive a map of CIEMAT buildings location.



## AGENDA

### Thursday 5 March (Presentations)

**9:30-10:00 Coffee**

**10:00 – 10:20 Welcome and Introduction from Coordinators**

T. Missana / P. Sellin / Christian Nyström

**10:20 – 10:50 Treatment of colloids in the Safety Case: Synthesis of understanding for final State of the Art report.**

Lucy Bailey and Rebecca Beard (RWML, UK)

**10:50 – 11:20 Two swelling mechanisms of bentonite in slit experiments: initial and chemical swelling.**

Veli-Matti Pulkkanen and Marcus Olin (VTT, Finland)

**11:20 – 11:50 Measurement of water transport and free swelling of bentonite clay using X-ray imaging.**

Markku Kataja and Jarno Alaraudanjoki (University of Jyväskylä, Finland)

**11:50 – 12:20 Montmorillonite rheology.**

Rasmus Eriksson (B+Tech, Finland)

**12:20 – 12:50 Bentonite Erosion Experiments.**

F. Rinderknecht, M. Bouby, F. Friedrich, S.Heck, R. Götz, F. Huber, T. Schäfer (KIT-INE, Germany)

**13:00 – 14:30 Lunch**

**14:30 – 15:00 Influence of the physico-chemical and crystallographic properties of clay minerals on erosion processes.**

AM. Fernandez (CIEMAT, Spain)

**15:00 – 15:30 Update of erosion experiments at CIEMAT.**

U. Alonso, T. Missana, M. García.Gutierrez, A. M. Fernandez, N. Mayordomo, M. Mingarro, T. López,-Torrubia, J. Morejon, P. Gil. (CIEMAT, Spain)

**15:30 – 16:00 The design, implementation and evaluation of an artificial fracture database for the BelBar Project.**

T. Schatz (B+Tech, Finland)

**16:00 – 16:30 Modelling of bentonite erosion applied to Schatz et al (2013) experiments.**

L. Moreno, I. Neretnieks, L. Liu (KTH, Sweden)

**16:30 – 17:30 Steering Committee Meeting**



**Thursday 5 March (Poster Session)**  
**18:00 -20.00 h**

1. **Study of <sup>137</sup>Cs Transport through a column filled with crushed granite in presence of bentonite colloids – WP3**  
K. Videnská and R. Cervinka (UJV-Rez, Czech Republic)
2. **Formation and stability of An-silica colloids.**  
S.Weiss, R. Husar, C. Henning, H. Zänker (HZDR, Germany)
3. **A macroscopic and spectroscopic investigation of neptunium (V) adsorption on montmorillonite and corundum**  
O. Elo, N. Huittinen, K. Müller, A. Ikeda Ohno, A. Scheinost, P. Hölttä (University of Helsinki, Finland)
4. **Radiolabelling of colloids for highly sensitive detection in complex systems**  
H. Hildebrand, S. Schymura, K. Franke (HZDR, Germany)
5. **Influence of organic matter (fulvic acids) on the long term stability of clay colloids prepared under different chemical conditions.**  
M. Bouby, Y. Heyrich, S. Heck, S. Hilpp, T. Schäfer (KIT-INE, Germany)
6. **Bentonite Erosion Experiments**  
F. Rinderknecht, M. Bouby, f. Friedrich, F. Huber, T. Schäfer (KIT-INE, Germany)
7. **Colloid erosion dependence on clay smectite content.**  
U. Alonso, T. Missana, A.M. Fernández , T. López-Torrubia, N. Mayordomo (CIEMAT, Spain)
8. **Overview of the results from colloid samplings at the GTS from 2006 to 2014.**  
T. Missana, U. Alonso, M. García-Gutierrez (CIEMAT, Spain).
9. **Size distribution of bentonite colloids upon fast disaggregation in low ionic strength waters.**  
N. Mayordomo, C. Degueudre, U. Alonso, T. Missana (CIEMAT, Spain)
10. **Update of KTH results. NA**  
Guomin Y. (SKB, Sweden)
11. **Microstructure of Na-Montmorillonite**  
M. Matuszewicz et al. (VTT, Finland)
12. **Reology measurements on Ashapura Bentonite.**  
U. Nilsson and M. Hedström (Clay Technology, Sweden)



**Friday 6 March (Presentations)**

**9:00 - 9:30 Coffee**

**9:30 – 9:50 Update of KTH results.**

Guomin Y. (KTH, Sweden)

**9:50 – 10:10 Radionuclide interaction and transport – Update of laboratory experiments**

P. Hölttä. Outi Elo, Vatteri Suorsa, Suvi Niemiaho (University of Helsinki, Finland)

**10:10 – 10:30: Hydration of FEBEX-Bentonite observed by Environmental Scanning Electron Microcopy (ESEM)**

F. Friedrich, D.Schild, T. Schäfer (KIT-INE, Germany)

**10:30 – 11:00 Update of the modeling Work.**

F. Huber, M. Stoll, G. Darbha, T. Schäfer (KIT-INE, Germany)

**11:00 – 11:30. WP4: Crystalline swelling of montmorillonites with divalent interlayer cations at high water to solid ratio**

D. Svensson and P. Sellin (SKB, Sweden)

**11:30 – 12:00. Destabilisation of bentonite colloids by addition of alumina nanoparticles**

N. Mayordomo, U. Alonso and T. Missana (CIEMAT, Spain)

**12:00 – 12:30. Coagulation behavior of clay dispersions in simple electrolytes – consequences for the possible real groundwater. WP4**

R. Cervinka and J. Gondolli (UJV-Rez, Czech Republic)

**12:30 – 13:00. From soil clays to erosion processes (INVITED).**

J. Cuevas (UAM, Spain)

**13:00 – 14:30 Lunch**

**End of the Meeting**

