

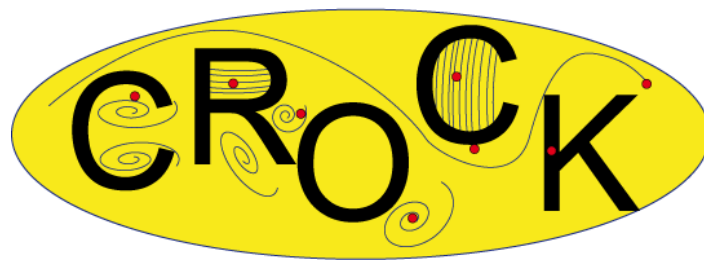


# CROCK

## Crystalline Rock Retention Processes

Contract Number: 269658

### CROCK 1<sup>st</sup> Workshop Agenda



*May 22<sup>nd</sup>-24<sup>th</sup>, 2012*

Location: SKB Head Office, Stockholm, Sweden



Tuesday, 22<sup>nd</sup> May 2012

Place: SKB Head Office, Stockholm, Sweden

08:30-09:30 Registration / Welcome address

**Topical Session: “Reactive transport modelling”**

*Chair: Jorge Molinero (AMPHOS)*

09:30-09:45 **Welcome. Objectives of the Topical Session. Agenda.**

*Jorge Molinero (AMPHOS)*

09:45-10:00 **New Approaches for Efficient Reactive Transport Modelling.**

*Paolo Trincherio, Gabriela Roman-Ross and Jorge Molinero (AMPHOS)*

10:00-10:15 **How to evaluate uncertainties in rock fracture transport modelling?**

*Markus Olin, Veli-Matti Pulkkanen, Karita Kajanto (VTT)*

10:15-10:30 **Discussion.**

10:30-11:00 **-- C o f f e e B r e a k --**

11:00-11:15 **Amounts and distribution of fracture minerals, available for reaction in crystalline rocks.**

*Martin Löfgren (NIRESSA) and Magnus Sidborn (KEMAKTA)*

11:15-11:30 **High Performance Reactive Transport Modelling (I): DT-PF Pilot Project.**

*Luis Manuel de Vries, Albert Nardi, Jorge Molinero and Paolo Trincherio (AMPHOS)*

11:30-11:45 **High Performance Reactive Transport Modelling (II): Reactive Transport in ConnectFlow.**

*Steve Joyce (SERCO)*

11:45-12:00 **High Performance Reactive Transport Modelling (III): The COMSOL Phreeqc Approach.**

*Albert Nardi, Luis Manuel de Vries, Andrés Idiart, Paolo Trincherio and Jorge Molinero (AMPHOS)*

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12:00-12:15 **Some numerical issues related to modelling of reactive transport with matrix diffusion.**

*James Crawford (KEMAKTA)*

12:15-12:30 **Scoping analysis of PhreeqC capabilities for colloidal-facilitated radionuclide transport modelling.**

*Andrés Idiart and Jorge Molinero (AMPHOS)*

12:30-13:00 **Discussion.**

13:00-14:30 **-- L u n c h --**

14:30-16:30 **General discussion / Brainstorming. Tentative topics:**

- Recent scientific advancements in RTM
- High Performance Computing and new numerical approaches in RTM
- Future needs of Reactive Transport Developments: Agencies and regulators perspective
- Others

16:30-17:00 **-- C o f f e e B r e a k --**

17:00-18:00 **ExCom meeting.**

*(Restricted to Excom members)*

18:00-21:00 **POSTER Session with Buffet.**



Wednesday, 23<sup>rd</sup> May 2012

Place: SKB Head Office, Stockholm, Sweden

08:30-09:45 **Reporting by the Coordination Team.**

*Coordination Team (Thomas Rabung (KIT), Vanessa Montoya (AMPHOS), Jorge Molinero (AMPHOS))*

**WP1 plenary: Experimental material and characterization**

*WP leader: Thomas Rabung (KIT)*

09:45-10:15 **Characterization of new crystalline material for investigations within CP CROCK.**

*Thorsten Schäfer<sup>1</sup>, Eike Stage<sup>1</sup>, Sebastian Büchner<sup>1</sup>, Florian Huber<sup>1</sup>, Henrik Drake<sup>2</sup> and Stellan Holgersson (<sup>1</sup>KIT, <sup>2</sup>Linnaeus University, <sup>3</sup>CTH)*

10:15-10:25 **Block-scale experiment at CIEMAT.**

*Miguel García-Gutiérrez, Manuel Mingarro, Tiziana Missana (CIEMAT)*

10:25-10:55 **-- C o f f e e B r e a k --**

10:55-11:15 **Characterisation of rock samples from areas of the proposed Russian HLW and SNF repository (Nizhnekansky massive) and first sorption studies.**

*Vladimir G. Petrov<sup>1</sup>, Irina E. Vlasova<sup>1</sup>, Natalia V. Kuzmenkova<sup>2</sup>, Vladislav A. Petrov<sup>3</sup>, Valery V. Poluektov<sup>3</sup>, Anais Grivot<sup>1</sup>, Stephan N. Kalmykov<sup>1</sup> (<sup>1</sup>MSU, <sup>2</sup>Vernadsky Institute of Geochemistry, <sup>3</sup>IGEMRAS)*

11:15-11:45 **Characterisation of rock samples from Äspö using gas adsorption.**

*Stellan Holgersson (CTH)*

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## **WP2 plenary: Radionuclide transport and sorption studies**

*WP leader: Tiziana Missana (CIEMAT)*

11:45-12:15 **Sorption/desorption studies of  $^{137}\text{Cs(I)}$ ,  $^{152}\text{Eu(III)}$ ,  $^{233}\text{U(VI)}$  and  $^{99}\text{Tc(VII)}$  onto new CROCK derived Äspö diorite.**

*Eike Stage, Florian Huber, Stephanie Heck and Thorsten Schäfer (KIT)*

12:15-12:45 **NRI experimental work overview.**

*Vaclava Havlová<sup>1</sup>, Katerina Videnska<sup>1</sup>, Jani Vejsadú<sup>1</sup> and Petr Sajdl<sup>2</sup>  
(<sup>1</sup>NRI, <sup>2</sup>Institute of Chemical Engineering Prague)*

12:45-13:15 **Comparison of the cesium adsorption on different crystalline rocks.**

*Tiziana Missana, Miguel García-Gutiérrez (CIEMAT)*

13:15-14:45 **-- L u n c h --**

14:45-15:15 **Sorption of U(VI) and Np(V) onto diorite from Äspö HRL.**

*K. Schmeide, S. Gürtler, K. Müller, R. Steudtner, C. Joseph, F. Bok and V. Brendler (HZDR)*

## **WP3 plenary: Real system analysis**

*WP leader: John Smellie (CONTERRA)*

15:15-15:45 **Diffusive retention processes. Estimation of in-situ formation factors by electrical resistivity measurements.**

*James Crawford (KEMAKTA) and Martin Lögfren (NIRESSA)*

15:45-16:15 **On the relevance of matrix diffusion for the hydrogeochemical stability of the Deep Geological Repository.**

*Jorge Molinero and Paolo Trinchero (AMPHOS)*

16:15-16:30 **Discussion.**

16:30-17:00 **-- C o f f e e B r e a k --**

17:30-20:30h **Workshop DINNER- Ströma Kanalbolaget.**



Thursday, 24<sup>th</sup> May 2012

Place: SKB Head Office, Stockholm, Sweden

08:30-09:30 **EUG meeting.**

*(Restricted to EUG members)*

**WP4 plenary: Conceptualization and modeling**

*WP leader: James Crawford (KEMAKTA)*

09:30-10:00 **Processes based sorption modelling.**

*James Crawford (KEMAKTA)*

10:00-10:30 **Multiscale modelling of sorption and retardation.**

*M. Olin, E. Puhakka, A. Itälä, , M. Tanhua-Tyrkkö, V.-M. Pulkkanen (VTT)*

10:30-10:45 **Cs sorption onto crystalline rock. From mechanistic sorption models to Kd.**

*Jorge Molinero, Cristina Domènech and David García (AMPHOS)*

10:45-11:15 **-- C o f f e e B r e a k --**

**WP5 plenary: Application to the Safety Case**

*WP leader: Jorge Molinero (AMPHOS)*

11:15-11:45 **Radionuclide retention in fractured media: coping with uncertainty in PA studies.**

*Àngels Piqué, Luis Manuel de Vries, Paolo Trincherò, Lara Duro and Jorge Molinero (AMPHOS)*

11:45-12:15 **Application to the safety case. Deployment of process-based models in safety assessment.**

*James Crawford (KEMAKTA)*



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12:15-12:45 **How to predict Kd values outside experimental studied conditions and to estimate related uncertainty?**

*M. Olin, V.-M. Pulkkanen, H. Nordman, A. Poteri (VTT)*

12:45-14:15 **-- L u n c h --**

**WP6 plenary: Documentation**

*WP leader: Andrés Idiart (AMPHOS)*

14:15-14:45 **State of the art.**

*Andrés Idiart, Marek Pekala and Mireia Grivé (AMPHOS)*

14:45-15:15 **General Assembly.**

15:15-15:45 **-- C o f f e e B r e a k --**