

## URANIUM, MINING AND HYDROGEOLOGY including UMREG Meeting, 18-22 September 2011, Freiberg/Sa.

### Final program

#### PROGRAMME OF TALKS – LECTURE HALL WIN-1005

<b>Monday, 19.09.2011</b>	
<b>Lecture Hall WIN-1005</b>	
<b>Opening Session</b>	
0900-0930	Welcome addresses
<b>Plenary Session</b>	
0930-1000	Marie Curie and the discovery of Uranium <b>Fernando Carvalho</b> (Instituto Tecnológico e Nuclear, Portugal)
1000-1025	The IAEA ENVIRONET Network supporting the remediation of uranium mining and milling sites <b>Horst Monken-Fernandes</b> (International Atomic Energy Agency, Austria)
1025-1050	Sustainability: The balanced approach to modern uranium mining <b>Peter Waggitt</b> (Department of Resources, Australia)
1050-1115	Coffee break
<b>Session I - Renaissance of Uranium Mining</b>	
<b>Chair:</b>	
1115-1140	Evaluation of transboundary impact of toxic metals of uranium mine Mailoo-Suu (Kyrgyzstan) <b>Vyacheslav Aparin</b> (Institute of Hydrogeology, Engineering Geology and Geoecology, Republic of Uzbekistan)
1140-1205	Assessment of distribution coefficients (K <sub>d</sub> ) of radionuclides of the uranium-thorium chain in the uranium manufacturing tailing dumps <b>Valentin Protsak</b> (Ukrainian Institute of Agricultural Radiology (UIAR), Ukraine)
1205-1230	Cadmium and uranium contents in German and Brazilian phosphorous fertilisers <b>Geerd Smidt</b> (Jacobs University Bremen, Germany)
1230-1400	Lunch
1400-1425	Assessment of background uranium concentration in groundwater around a proposed mining area <b>Karthikeyan Brindhya</b> (Anna University, India)
1425-1450	Health hazards and environmental issues at the uranium mine near Tatanagar, India <b>S. K. Sharma</b> (Carman Residential and Day School, India)
1450-1515	Concentration dynamics and speciation of uranium in a boreal forest creek – Six years of weekly observations <b>Stefan Karlsson</b> . (Örebro University, Sweden)
1515-1540	How much uranium can be left in the environment at former u mining and milling sites ? – the need for a complex assessment framework <b>Peter Schmidt</b> (Wismut GmbH, Germany)
1540-1605	Environmental managementsystems in uranium exploration at AREVA Resources Canada Inc. (ARC) <b>Peter Wollenberg</b> (AREVA Resources Canada Inc., Canada)
1605-1630	Coffee break
1630-1655	Transport and Availability of Uranium and its Long-Lived Decay Products in Fluvial Soils of the Mulde River <b>Rolf Michel</b> (Universität Hannover, Germany)
1655-1720	Concentration of U and Th in the Bloedkoppie Granite, Namibia

	<b>Fred Kamona</b> (University of Namibia, Namibia)
1720-1745	Simulation of radionuclide transport and fate in surface waters in the vicinity of a past uranium processing plant
	<b>Maria de Lurdes Dinis</b> (Porto University, Portugal)
1745-1810	Interaction of <i>Chlorella vulgaris</i> and <i>Schizophyllum commune</i> with U(VI)
	<b>Manja Vogel</b> (Forschungszentrum Dresden-Rossendorf e.V, Germany)
1810-1835	Neutralisation and Trace Element Removal from Beverley In-Situ Recovery Uranium Mine Barren Lixiviant via Hydrotalcite Formation
	<b>Grant Douglas</b> (CSIRO Land and Water, Australia)
1835-1900	Groundwater monitoring data and screening radionuclide transport modeling analyses for the uranium mill tailings at the Pridneprovsky Chemical Plant Site (Dneprodzerginsk, Ukraine)
	<b>Oleksandr Skalskyi</b> (National Academy of Sciences of Ukraine, Ukraine)
2000	Barbecue

## PROGRAMME OF TALKS – LECTURE HALL WIN-2258

<b>Monday, 19.09.2011</b>	<b>Lecture Hall WIN-2258</b>
<b>Session III - Cleaning up technologies for water and soil</b>	
<b>Chair:</b>	
1115-1140	Critical challenges of acid mine drainage in the Witwatersrand and possible research areas for collaboration between the Council for Geoscience of South Africa and German research and expert teams <b>Thibedi Ramontja</b> (Council for Geoscience, South Africa)
1140-1205	Groundwater Source Removal Action at the Canon City, CO Uranium Mill <b>Greg Lord</b> (Stoller Corporation, USA)
1205-1230	Safe Handling of Low pH Mill Tailings Pore Fluids Moab Uranium Mill Tailings Remedial Action Project <b>Donald Metzler</b> (U.S. Department of Energy, USA)
1230-1400	Lunch
1400-1425	Development and Migration of a Critical Habitat and Its Affect on the Colorado River Protection Strategy at the Moab Uranium Mill Tailings Remedial Action Project Site <b>Joseph Ritchey</b> (S&K Aerospace, LLC, USA)
1425-1450	Generation and Prevention of Acid Drainage from Mining Wastes in a Uranium Deposit <b>Marina Nicolova</b> (University of Mining and Geology, Bulgaria)
1450-1515	Legacy of Uranium extraction and environmental security in the Republic of Tajikistan <b>Muzafar Yunusov</b> (Corporation Vostokredmet, Tadjikistan)
1515-1540	Preparation of a Safety and Environmental Impact Assessment and Design of Remediation Works for Uranium Tailings at AMCO Site, Zambia <b>Uwe Walter</b> (Wisutec GmbH, Germany)
1540-1605	Solubility Controls of Arsenic, Nickel, and Molybdenum in Uranium Mine Tailings <b>Joseph Essilfie-Dughan</b> (University of Saskatchewan, Canada)
1605-1630	Coffee break
1630-1655	Biobleaching of shale - Impact of carbon source <b>Viktor Sjöberg</b> (Örebro University, Sweden)
1655-1720	Interactions of Ionic Liquids with Uranium and its Bioreduction <b>Chengdong Zhang</b> (Brookhaven National Laboratory, USA)
1720-1745	Do fast growing trees transfer a relevant share of U from soil to harvest?

1745-1810	<p><b>Gert Dudel</b> (TU Dresden, Germany) Field scale phytoremediation of soils contaminated with heavy metals and radionuclides and further utilization of the plant residues</p>
1810-1835	<p><b>Daniel Mirgorodsky</b> (Friedrich-Schiller-Universität, Germany) Conception for diversion of runoff implementing the Trünzig uranium tailings pond into the regional catchment area</p>
1835-1900	<p><b>Ulf Barnekow</b> (Wismut GmbH, Germany) Investigation of microbial in-situ remediation of uranium mine site pollutants in Königstein</p>
2000	<p><b>Andrea Kassahun</b> (GFI Grundwasserforschungsinstitut GmbH, Germany)</p>
	Barbecue

PROGRAMME OF TALKS – LECTURE HALL WIN-1005

<b>Tuesday, 20.09.2011</b>	
<b>Lecture Hall WIN-1005</b>	
<b>Session V - Modeling</b>	
<b>Chair:</b>	
0830-0855	Radiological impact assessment of mining activities in the wonderfonteinspruit catchment area, south africa <b>Rainer Barthel</b> (Brenk Systemplanning GmbH, Germany)
0855-0920	Ecotoxicity of uranium in freshwaters: influence of the physico-chemical status of the rivers <b>Karine Beaugelin-Seiller</b> (Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France)
0920-0945	Assessing U-related health risks: two case studies from South Africa <b>Frank Winde</b> (North West University, South Africa)
0945-1010	Challenges in assessing uranium-related health risks: two case studies for the aquatic exposure pathway from south africa <b>Frank Winde</b> (North West University, South Africa)
1010-1035	Thermodynamic data dilemma <b>Broder J. Merkel</b> (TU Bergakademie Freiberg, Germany)
1035-1100	Coffee break
1100-1125	Formation of (Ba,Ra)SO <sub>4</sub> solid solutions – results from coprecipitation and barite (re)precipitation experiments <b>Volker Metz</b> (Karlsruhe Institute of Technology, Germany)
1125-1150	Diffusion of U(VI) in Opalinus Clay: Influence of temperature and humic acid <b>Claudia Joseph</b> (Forschungszentrum Dresden-Rossendorf e.V, Germany)
1150-1215	Challenges in Detection of Uranyl-Arsenates <b>Wondemagegnu Gezahegne</b> (TU Bergakademie Freiberg, Germany)
1215-1240	Kinetics of two-line ferrihydrite phase transformation under alkaline conditions: Effect of temperature and adsorbed arsenate <b>Soumya Das</b> (University of Saskatchewan, Canada)
1240-1400	Lunch
1400-1425	Study of the speciation in the system UO <sub>2</sub> (2+)-SO <sub>4</sub> (2-)-H <sub>2</sub> O by means of the UV-VIS spectrophotometry <b>Jakub Višňák</b> (Czech Technical University, Czech Republic)
1425-1450	Interaction of U(VI) with Glutathione and Benzoic Acid <b>Alfatih Asman Ahmed Osman</b> (Helmholtz-Zentrum Dresden-Rossendorf, Germany)
1450-1515	Modeling the groundwater flow of a <sup>90</sup> Sr plume through a Permeable Reactive Barrier installed at the Chalk River Laboratories, Chalk River, Ontario, Canada <b>Jutta Hoppe</b> (University of Waterloo, Canada)
1515-1540	Characterisation of the impact of uranium mines on the hydrological system in a granitic context : example of the Limousin area in France <b>Christian Andres</b> (Areva, France)
1540-1605	Radiological Impact Assessment of the Uranium Tailings Pond at Turamdih in India <b>Nair Nair Narendran Raghavan</b> (Bhabha Atomic Research Centre, India)
1605-1630	Coffee break
1630-1655	The mean hydraulic residence time and its use for assessing the longevity of mine water pollution <b>Michael Paul</b> (Wismut GmbH, Germany)
1655-1720	Implementation of a modelling concept to predict hydraulic and geochemical conditions during flooding of a deep mine <b>Thomas Metschies</b> (Wismut GmbH, Germany)
1720-1745	Uranium mineralization in fractured welded tuffs of the Krasnokamensk Area: transfer from ancient to modern oxidizing conditions <b>Vladislav Petrov</b> (Russian Academy of Science, Russia)

1745-1810	Uranium (VI) Binding to Humic Substances: Speciation, Estimation of Competition, and Application to Independent Data <b>Pascal Reiller</b> (Commissariat à l'Énergie Atomique, France)
1810-1835	Characterization of Uranium Behaviour in the Ruprechtov Site (CZ) <b>Barbora Drtinova</b> (CTU Prague, Czech Republic)
1900-2100	Poster session (Foyer Clemens-Winkler-Building)

## PROGRAMME OF TALKS – LECTURE HALL WIN-2258

<b>Tuesday, 20.09.2011</b>	
<b>Lecture Hall WIN-2255</b>	
<b>Session VI – Miscellaneous</b>	
<b>Chair:</b>	
0830-0855	Uranium – A problem in the Elbe catchment area? <b>Petra Schneider</b> (C&E Consulting und Engineering GmbH C&E Consulting und Engineering GmbH, Germany)
0855-0920	Uranium in German tap water - occurrence and origins <b>Geerd Smidt</b> (Jacobs University Bremen, Germany)
0920-0945	Contribution of mineral and tap water to the dietary intake of As, B, Cu, Li, Mo, Ni, Pb, U and Zn by humans <b>Ewald Schnug</b> (Technische Universität Braunschweig, Germany)
0945-1010	Heavy metal loads to agricultural soils in Germany through commercial phosphorus fertilizers and its contribution to background concentration <b>Ewald Schnug</b> (Technische Universität Braunschweig, Germany)
1010-1035	Energetic and economic significance of uranium in P fertilisers <b>Nils Haneklaus</b> (Universität Stuttgart, Germany)
1035-1100	Coffee break
1100-1125	Effect of Mg-Ca-Sr in the sorption behavior of uranium(VI) on silica <b>Sreejesh Nair</b> (TU Bergakademie Freiberg, Germany)
1125-1150	Why constructed wetlands fail to sustainably remove uranium <b>Gert Dudel</b> (TU Dresden, Germany)
1150-1215	Direct and indirect effects of Uranium on microstructure of sedimentary phosphate: Fission tracts and radon diffusion <b>Fatima-Zahra Boujral</b> (Université Sultan Moulay Slimane, Faculté des Sciences et Techniques, Morocco)
1215-1240	Speciation of Uranium - from the environment to living cells <b>Gerhard Geipel</b> (Forschungszentrum Dresden-Rossendorf e.V, Germany)
1240-1400	Lunch
1400-1425	Cleaning of norm contaminated pipes from dismantling of oil/gas production facilities at a north african site <b>Rainer Barthel</b> (Brenk Systemplanning GmbH, Germany)
1425-1450	The Implications of New Legislation on NORM-generating Industries <b>David Read</b> (Loughborough University, United Kingdom)
<b>Session II - Phosphate Mining and Uranium Recovery</b>	
<b>Chair:</b>	
1450-1515	Developing an "alternative" Mining method <b>Franz-Werner Gerressen</b> (Bauer Maschinen GmbH, Germany)
1515-1540	Uranium pollution in an estuary affected by two different contamination sources <b>Guillermo Manjon</b> (University of Seville, Spain)
1540-1605	Lithofacies study with the natural phosphates: Quantification, genetic involvement and distribution. <b>Fakhi Said</b> (Université du Groupe de Radiochimie, Morocco)
1605-1630	Coffee break

### Session IV - Analytics and Sensors for Uranium and Radon

#### Chair:

1630-1655	Airborne radiometric surveying for the management of health, safety and the environment in the uranium mining industry: potential applications and limitations <b>Henk Coetzee</b> (Council for Geosciences, South Africa)
1655-1720	Environmental analysis of uranium with recombinant antibodies <b>Diane A. Blake</b> (School of Medicine, Tulane University, USA)
1720-1745	Coca Cola® for determining bioaccessible uranium in contaminated mine soils <b>Bernd Lottermoser</b> (University of Tasmania, Australia)
1745-1810	Development and evaluation of an immunochromatographic strip for rapid, instrument-free, on-site detection of uranium <b>Xiaoxia Zhu</b> (Tulane University, USA)
1900-2100	Poster session (Foyer Clemens-Winkler-Building)

### PROGRAMME OF TALKS – LECTURE HALL GEL-0001

**Tuesday,  
20.09.2008**

**Lecture Hall GEL-0001**

#### Session I - Renaissance of Uranium Mining

#### Chair:

0830-0855	New Uranium ISR Satellites at Beverley North, South Australia <b>Horst Märten</b> (Heathgate Resources Pty. Ltd., Australia)
0855-0920	Reactive Transport modeling for the proposed Deway Burdock Uranium In-Situ Recovery mine <b>Raymond Johnson</b> (U.S. Geological Survey, USA)
0920-0945	Waste water treatment of CO <sub>2</sub> +O <sub>2</sub> in-situ leaching uranium <b>Lechang Xu</b> (Beijing Research Institute of Chemical Engineering and Metallurgy, CNNC, China)
0945-1010	License procedure for uranium extraction from Talvivaara deposit, Finland <b>Ari Luukonen</b> (Radiation and Nuclear Safety Authority, Finland)
1010-1035	Making Uranium-Mining More Sustainable – The FP7 Project EO-Miners <b>Eberhard Falck</b> (Université de Versailles St. Quentin-en-Yvelines, France)
1035-1100	Coffee break
1100-1125	Uranium Mining Life-Cycle Energy Cost vs. Uranium Resources <b>Eberhard Falck</b> (Université de Versailles St. Quentin-en-Yvelines, France)
1125-1150	Radiation protection and environmental surveillance in uranium mining and processing in India <b>Amir Hasan Khan</b> (Bhabha Atomic Research Centre, India)
1150-1215	Estimates of effective doses among Czech uranium miners <b>Ladislav Tomasek</b> (National Radiation Protection Institute, Czech Republic)
1215-1240	Gigantic Resources and Experimental Gold Mining with Uranium, Platinum from the Molasses Conglomerates Basins of Germany and in the Neighboring States <b>Elkhan Mamedov</b> (Baku State University, Azerbaijan)

PROGRAMME OF TALKS – LECTURE HALL WIN-1005

<b>Wednesday, 21.09.2011</b>	
<b>Lecture Hall WIN-1005</b>	
<b>UMREG-Meeting</b>	
0830-0855	The UMREG Goals, <b>Executive Committee</b>
Introductory lecture	
0855-0920	Securing Remediation Results for the Long Term: Technical and Institutional Aspects <b>S. Mann</b> (WISMUT)
0920-0945	Simultaneous site Remediation and Uranium Production at DIAMO <b>K. Trojackova</b> (DIAMO)
0945-1035	USNRC Approaches to licensing of Uranium Production Sites <b>K.I. McConnell</b> (USNRC)
1035-1100	Coffee break
UPC Optimization	
1100-1125	Lifecycle Costs of Uranium Milling at the Moab Utah Site <b>D. Metzler</b> (USDOE)
1125-1150	U Production Cycle and remediation of the legacy sites in Ukraine <b>P. Chernov</b> and <b>Oleg Voytsekhovych</b> (Ukrainian Ministry of Energy)
1150-1215	Uranium Legacy Sites Remediation Technologies <b>M. Paul</b> (WISMUT)
1215-1240	Creative After-Use: Turning a U mine into an underground gas storage cavern <b>Bedřich Michálek</b> (DIAMO)
1240-1400	Lunch
1400-1425	Stakeholder Involvement Rehabilitation of Uranium Mining Legacies in Taboshar <b>U. Mirsaidov</b> and <b>B. Barotov</b> (NRC Tajikistan)
1425-1450	Stakeholder Involvement During Rehabilitation of Uranium Mining Legacies in Mailuu Suu, Kyrgyzstan <b>Peter Schmidt</b> (WISMUT) and <b>F. Wagner</b> (WISUTEC)
Transfer of Know how and Technology	
1450-1515	Supervision and assessment of Uranium production site remediation in Australian <b>M. Bush</b> (Department of Sustainability, Environment, Water, Population and Communities)
1515-1540	Appraisal of UPC at Caetite, Brazil <b>Peter Waggitt</b> (Australian Mine Inspectorate)
1540-1605	Environmental Management of the UPC at Caetite, Brazil <b>C.Costa</b> (INB)
1605-1630	Coffee break
1630-1655	Aspects of the Peer Review of the Hungarian post-remedial Program of the uranium production legacy sites <b>R. Edge</b> (IAEA)
1655-1720	The Hungarian MECSEK-ÖKO Zrt. LTM/S Program <b>Zsolt Berta</b> and Co-authors (Mecseköko)
1720-1745	Remediation and After-Care under Mountain Conditions - The case of Zirovski Vrh <b>P. Dolec</b> and <b>I. Gantar</b> (RZV)
1745-1810	Remediation of Sillamae - Long Term Steward and After-use <b>R. Jaaksoo</b> and <b>Anti Sinmaa</b> (Estonian Ministry of Environment)
1810-1835	Completion of the Remedial Work of S.E. Uranlikvidrudnik in Kazakhstan <b>M. Kaftaranov</b> (Uranlikvidrudnik)
1835-1900	Activities of the School of Uranium Production <b>J. Trojacek</b> (World Nuclear University at DIAMO)
ISL/ISR	
1900-1925	In-situ leaching method in uranium production in Kazakhstan <b>O.Gorbatenko</b> (KAZATOMPROM)

1925-1950	How to optimise ISL UPC: Possibilities and pitfalls <b>V. Benes</b> (DIAMO)
1950-2015	Optimized uranium ISR performance and mine-closure concepts: application case Beverly North <b>Harald Kalka, Horst Märten, Richard Phillips</b> and <b>Peter Woods</b> (UIT GmbH Dresden, Germany, Heathgate Resources Pty. Ltd., Australia)
2015	Closure of UMREG2011, <b>Executive Committee</b>

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