



Nuclear Fuel Cycle: A Chemistry Conference (NFC3)

10:00

Introduction : Stéphane Bourg (GENIORS) & Bernard Boullis (CEA)

May 4, 2021

SESSION 1: ACTINIDE AND FISSION PRODUCT CHEMISTRY

Chairperson : Giuseppe Modolo (Forschungszentrum Jülich) + M. Viot (ICSM)

QUESTIONS & ANSWER SESSIONS

One Q&A session after each Keynote
One grouped Q&A session after the other presentations

Participants **write questions via the Q&A tab**
“Q&A” at the bottom of the ZOOM window

Questions will be asked by the chairman
Exceptionally, the floor may be given to a participant by
the chairperson for an oral question

Please:

Specify the name of the speaker or the reference

Example : “ACT O2 : can you explain...”

**Times are those of the
CEST time zone
(Central Europe Summer Time)**

10:15	Keynote	<i>Coordination Chemistry of Actinide(VI, IV) Nitrates for Development of Nuclear Fuel Materials Selective Precipitation (NUMAP) Reprocessing</i>	Koichiro TAKAO Tokyo Institute of Technology
10:55	ACT O1	<i>Synthesis and Characterization of a hexanuclear plutonium(IV) in acetate solution from EXAFS and DFT</i>	Geoffroy CHUPIN CEA
11:10	ACT O2	<i>DFT Study on the Chemical Behavior of High Yielding Fission Products (Cs-137, I-129) in a UO₂ Framework</i>	Eduardo MONTOYA University of Nevada, Las Vegas
11:25	ACT O3	<i>Crystal Structures of Tetravalent f-Block Metals with Bis(2-pyrrolidone) Linker Molecules at Different HNO₃ Concentration</i>	Ryoma ONO Tokyo institute of technology
11:40	ACT O4	<i>Plutonium alpha radiolysis of nitric acid solutions</i>	Brandon PERRIN CEA
11:55	Questions & Answers		



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SESSION 2: ACTINIDES SEPARATION

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Chairperson : Andreas Geist (Karlsruhe Institute of Technology) + P. Guilbaud (CEA)

13:30	SEP K1	<i>PyTri-Diol behavior at conditions relevant for i-SANEX and EURO-GANEX processes</i>	Eros MOSSINI Politecnico di Milano
14:10	SEP O1	<i>Activating the Aromatic Core of the Water-soluble Complexing Agent PTD</i>	Patrik WEBLING Heidelberg University
14:25	SEP O2	<i>Deep Eutectic Solvents: promising co-solvents for Spent Nuclear Fuel reprocessing</i>	Greta COLOMBO DUGONI Politecnico di Milano
14:40	SEP O3	<i>Speciation in solvent extraction organic phases studied by molecular dynamics simulations: bifunctional amidophosphonic acid extractants</i>	Diego MORENO MARTINEZ CEA
14:55	SEP O4	<i>Development of a gamma irradiation loop and the evaluation of the EURO-GANEX process resistance</i>	Iván SÁNCHEZ GARCÍA CIEMAT
15:10		Questions & Answers	+ 15min break

Chairperson : Robin Taylor (National Nuclear Laboratory) + L. Berthon (CEA)

15:45	SEP K2	<i>Technical Opportunities for Decreasing Cost and Proliferation Hazard Associated with Reprocessing Technologies</i>	Jenifer SHAFER ARPA-E
16:25	SEP O5	<i>Use of TBP and N,N-dialkylamides for uranium extraction with 25 mm annular centrifugal contactors: effect of residence time on extraction performance</i>	Dominic MAERTENS SCK CEN / KU Leuven
16:40	SEP O6	<i>How Aqueous Complexes Shape ALSEP Kinetics</i>	Madeleine EDDY Colorado School of Mines
16:55	SEP O7	<i>The effect of immobilization mode of amidophosphonate ligands onto silica surfaces on the uranium extraction efficiency</i>	Aline DRESSLER CEA
17:10	SEP O8	<i>Malonamides for the multi-recycling of nuclear spent fuel.</i>	Elizabeth MAKOMBE CEA/ICSM
17:25		Questions & Answers	



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SESSION 3: ACTINIDE MATERIALS: NUCLEAR FUELS AND RADWASTE MATRICES

May 5, 2021

Chairperson : Jan John (Czech Technical University in Prague) + P. Martin (CEA)

10:00	MAT K1	Structural changes of Nd- and Ce-doped ammonium diuranate during the conversion to $U_{1-y}Ln_yO_{2\pm x}$	Christian SCHREINEMACHERS Forschungszentrum Jülich GmbH
10:40	MAT O1	Study of melting temperatures of (U,Pu)O ₂ SFRs fuels: influence of Pu and Am contents and oxygen stoichiometry	Pauline FOUQUET-MÉTIVIER CEA
10:55	MAT O2	Chromium doped Uranium Nitride as an advanced technology fuel	Luis GONZALEZ Chalmers University of Technology
11:10	MAT O3	Impact of the method of preparation and sintering conditions on the dissolution of (U,Ce)O _{2±δ}	Malvina MASSONNET ICSM/CEA
11:25	MAT O4	Molten salt irradiation and waste management	Konstantin KOTTRUP NRG
11:40	MAT O5	Sintering map approach on MOX SFR nuclear fuels with various plutonium contents	Julie SIMEON CEA
11:55		Questions & Answers	



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SESSION 4: WASTE MANAGEMENT & GEOLOGICAL REPOSITORY

May 5, 2021

Chairperson : Christian Ekberg (Chalmers University of Technology) + N. Dacheux (ICSM)

14:00	WG K1	Pb₂Tc₂O_{6.86}, a Stable Valence V Technetium Oxide?	Gordon THOROGOOD ANSTO
14:40	WG O1	Electrospun microporous membranes loaded with cerium oxide nanoparticles for the decontamination of nuclear wastewaters	Daniele COMANDELLA European Commission - JRC
14:55	WG O2	Sonochemical conversion of UO ₃ into U(VI) intrinsic colloids in near-neutral conditions	Manon COT-AURIOL CEA/ICSM
15:10	WG O3	Matrices for the immobilization of waste from pyrochemical processing of spent nuclear fuel	Anna MATVEENKO Lomonosov Moscow State University
15:25	WG O4	Effects of complex irradiation scenarios on ISG nuclear glass structure, properties and leaching behavior	Célia GILLET CEA/ICSM
15:40	Questions & Answers + 15min break		
16:15	WG O5	The Fabrication and Oxidative Dissolution of Mixed Oxide Fuels under the Reducing Conditions of a Geological Disposal Facility	Emma PERRY University Of Cambridge
16:30	WG O6	Development of iodine filters directly convertible into conditioning matrices	Raphaël PÉNÉLOPE CEA
16:45	WG O7	Sorption and spatial distribution of radionuclides onto fractured rocks of the exocontact zone of the Nizhnekansky granitoid massif	Anastasiia RODIONOVA GEOKHI RAS
17:00	WG O8	Immobilization of metal chlorides in magnesium potassium phosphate compound	Svetlana A. KULIKOVA Vernadsky Institute
17:15	Questions & Answers		