



ORF-RE (Ontario Research Fund for Research Excellence Funding)  
Nuclear Ontario Project: A University-based Research Network  
Supporting CANDU Nuclear Technology in Ontario

## Student Seminar

McMaster University, Celebration Hall (Room B116 within Kenneth Taylor Hall)  
2011 March 22-23

### Seminar Schedule (Final)

**Tuesday, March 22**

**08.15 – 08.45: Registration and Networking (*Continental breakfast*)**

**08.45 – 09.00: Welcome - *J.C. Luxat/V.S. Krishnan***

**09.00 – 10.30: Spent Fuel /Novel Fuel Separation Technologies (*UWO*) – Chair: Jamie Noël**

1. **Dmitrij Zagidulin** (presented by Jamie Noël) - *Gas phase corrosion of UO<sub>2</sub> under gamma irradiation*
2. **Jonathan Dube** - *Strategic overview of RTIL/TSIL-based fuel reprocessing*
3. **Jonathan Dube** - *Synthesis of RTIL and TSIL and preliminary tests of metal cation extraction from water*
4. **Tom Stockmann** - *Electrochemical metal extraction using hydrophobic ionic liquids*

**10.30 – 10.45: Break**

**10.45 – 12.15: Spent Fuel /Novel Fuel Separation Technologies, contd. (*UWO, UOIT*) – Chair: Anthony Waker**

1. **Susan Howett** - *Radiation effects on RTIL/aqueous biphasic systems*
2. **Nicole Priess and Ivan Lam** - *Radiological Impact of Long-Lived Fission Products and Naturally Occurring Radioactive Material*
3. **Ashita Kumar** - *An Experimental Study of the Relative Response of Plastic Scintillators to Photons and Beta Particles*
4. **Neville Malabre-O'Sullivan** - *A Low Energy Photon Mimic of the Tritium Beta Decay Energy Spectrum*
5. **Panel Discussion – Jamie Noël and Anthony Waker**

**12.15 – 13.15: Lunch**

**13.15 – 14.45: Computational Tools and Methodologies (*RMC*) – Chair: Brent Lewis**

1. **Khaled Shaheen** - *Mechanistic Fuel Performance Code Development*
2. **Stuart Bell** - *Fuel Bundle Modelling*
3. **Aaron Quastel** - *Mechanistic model to predict fuel oxidation behaviour in defective fuel*
4. **Andrew Prudil** - *Pellet deformation modelling*

**14.45 – 15.00: Break**

**15.00 – 16.30: Computational Tools and Methodologies, continued (*McMaster, RMC*) – Chair: Dave Novog**

1. **Markus Piro** - *Algorithm for free-energy minimization type computation for fuel chemistry prediction*
2. **Matt Ball and Andrew Morreale** - *Modelling of the Impact of Actinide Fuels on CANDU Control Device Worth*
3. **Ima Ituen and Minhaj Malik** – *Analysis of Fuel Channel Design in the CANDU SCWR*
4. **Panel Discussion – Brent Lewis and Dave Novog**

**17.00 – 19.30: Seminar Dinner: Skylight Room, 2<sup>nd</sup> Floor Commons Building, McMaster University  
(Buffet dinner: 17.30)**

## **Wednesday, March 23**

**08.30 – 10.00: Advanced Fuel Cycles (McMaster and RMC) – Chair: Brent Lewis**

1. **Mohammed Hussein** - *Actinide Burning Reactor*
2. **Bronwyn Hyland** - *AECL's approach for advanced fuel cycles*
3. **Benoit Arsenault** - *Advanced Fuel Cycles, Cooperation Program Between China and AECL*
4. **David Hummel** - *U235-Th Based Fuel For SCWR-CANDU*

**10.00 – 10.15: Break**

**10.15 – 12.15: Advanced Fuel Cycles (McMaster and RMC) – Chair: Dave Novog**

1. **Andrew Morreale** – *Actinide Burning in CANDU*
2. **Yonni Friedlander** – *Thorium Fuelled CANDU driven by PWR-derived Pu*
3. **Karol Kozlowski** – *Safety and Competitiveness of Actinide Burning CANDU - Metrics for Evaluating Performance and Suitability of New Fuel Types*
4. **Panel Discussion – Bronwyn Hyland and Benoit Arsenault**

**12.15 – 13.15: Lunch**

**13.15 – 14.30: Degradation of CANDU HTS Material (McMaster, Carleton and Queen's) –  
Chair: Gianluigi Botton**

1. **Colin Judge** – *Radiation Damage in Nickel Alloys*
2. **Gianluigi Botton** - *Radiation effects in Ni-Rich alloys and Carbon Steels*
3. **Chukwudi Azih** - *Direct Numerical Simulation of Convective Heat transfer in a Zero-Pressure-Gradient Boundary Layer with Supercritical Fluids*
4. **Mohammed Sattari and Rick Holt** – *SCR Pressure Boundary Material*

**14.30 – 15.00: Comments from Scientific Advisory Board - B.A. Shalaby, Mike Brett, Bhaskar Sur**

**15.00: Closing Remarks - J.C. Luxat/V.S. Krishnan**