

# Universities' Nuclear Technology Forum 2020

10<sup>th</sup> November, Remote Conference, Bangor University

Organizers: Dr Lee J. Evitts & Dr Iuliia Ipatova

- 13:00 *Nuclear Futures at Bangor University*  
**Prof Bill Lee, Dr Simon C. Middleburgh & Dr Michael Rushton**, Bangor University
- 13:20 *Investigating explosive astrophysical environments through gamma-ray spectroscopy*  
**Dr Daniel Doherty**, University of Surrey

## PhD Talks

- 13:50 *Optimizing converter layer and active volume thickness for gallium nitride neutron detectors*  
**Zhongming Zhang**, Lancaster University
- 14:05 *Regularization algorithm for neutron spectrum unfolding in fusion reactors*  
**Ocean Wong**, UKAEA
- 14:20 *Behaviour of Lithium and Boron Isotopes during Waste Glass Dissolution*  
**Thomas Goût**, University of Cambridge
- 14:35 *Ion-Irradiation-Induced Property Change in FeCr: Hardness, Thermal Diffusivity and Lattice Strain*  
**Kay Song**, University of Oxford

14:50 Break

- 15:00 *Fusion Research at UKAEA and the Role of Neutronics*  
**Dr Chantal Nobs**, UK Atomic Energy Authority

## PhD Short Talks (5 minutes each)

- 15:30
- 1) *Defect Chemistry and Mobility in Uranium Nitride as an Accident Tolerant Fuel*  
**Jade Li**, Lancaster University
  - 2) *The defect chemistry of PuO<sub>2</sub> from atomistic simulations*  
**William Neilson**, Lancaster University
  - 3) *Deep Learning Emulation for Fast Approximate Microstructural Analysis of Delayed Hydride Cracking*  
**Joshua Langcaster**, Imperial College London
  - 4) *Tailoring high entropy alloy (HEA) thermal expansion for accident tolerant fuel cladding coatings*  
**Jack Wilson**, Bangor University

- 5) *Density functional theory study of uranium mononitride*  
**Nicola Zagni**, Lancaster University
- 6) *Position-sensitive neutron detection using pulse shape analysis*  
**Caroline Holroyd**, Lancaster University
- 7) *Investigation into the Formation of Gas Bubble Superlattices under Ion Irradiation*  
**Aidan Milston**, University of Huddersfield
- 8) *Identifying the most stable accommodation mechanisms for Li in ZrO<sub>2</sub> fuel cladding*  
**Gareth Stephens**, Bangor University
- 9) *Oxidative dissolution of cerium dioxide under the reducing conditions of a geological disposal facility*  
**Emma Perry**, University of Cambridge
- 10) *Optimising Nuclear to Meet the Paris Climate Challenge*  
**Edmund Ireland**, University of Manchester

16:30 Break

16:40 *Application of R&D in Nuclear Forensics*  
**Dr Matthew Gilbert**, AWE

#### PhD Talks

17:10 *Synthesis of uranium diboride and simulation of selected physical and chemical properties*

**Fabio Martini**, Bangor University

17:25 *Microstructural evolution of neutron irradiated T91 ferritic-martensitic steel in the Advanced Test Reactor*

**Thomas P. Davis**, University of Oxford

17:40 *ZrO<sub>2</sub> Corrosion Layers and their Grain Boundary Networks*

**Aaron Chote**, Imperial College London

17:55 Closing remarks