

AGENDA - NuSec Funded Research Projects Workshop

11th October 2022 9:30 am - 1 pm

Location: Institute of Physics, 37 Caledonian Road London N1 9BU

9:30 am	<p>1. Welcome & Introductions</p> <p>Setting the NuSec Research Context a Programme Perspective</p> <ul style="list-style-type: none"> • Programme Overview and Technical Challenges 	<p>Paul Sellin</p> <p>Richard Dockree</p>
9:45 am	<p>2. NuSec PhD Studentships started in October 2021 – Progress Update Presentations (15 minutes each, with Q&A)</p> <ul style="list-style-type: none"> a. Larger area semiconductor detectors based on novel inorganic polycrystalline perovskite materials University College, London b. Development of compact neutron detectors using next-generation scintillator materials, University of Glasgow c. Evaluating the suitability of Organic Semiconductor Detectors for Nuclear Security, Queen Mary University of London d. Real time identification and tracking of radioactive materials carried by humans, University of Bristol <p>NuSec PhD Studentships, started in October 2020 – Progress Update Presentations (5-10 minutes each, with Q&A)</p> <ul style="list-style-type: none"> e. Developing the next-generation shipping container scanning system, University of Bristol f. Development of mixed field radiation detection techniques for oil and gas well logging, University of Sheffield 	<p>Stephen Kearney</p> <p>David Bennett</p> <p>Aled Horner</p> <p>Samuel Fearn</p> <p>Euan Connolly</p> <p>James Greer</p>
11:15 am	<p>3. Coffee Break and Posters from 2022 Summer Pilot Projects</p> <ul style="list-style-type: none"> a. The Inverse Collimator – Improving Signal Intensity for Source Localisation, University of Bristol b. Identifying isotopes using Machine Learning, Queen Mary University of London c. Causal Inference for Radiation Detection, University of Sheffield d. Gamma Ray Microcalorimeters using Superconducting Materials and Technologies, Loughborough University 	<p>Dr Peter Martin & Rosalind Williams</p> <p>Prof Adrian Bevan & Jordon Ellis</p> <p>Benjamin Ridings</p> <p>Boney Mahesh</p>

	<p>e. Characterisation of CZT crystals for improved position resolution and defect correction, University of Liverpool</p> <p>f. Environmental stability of Polymer radiation detectors, Queen Mary University of London</p> <p>g. Real-time radiation detection in virtual environments, University of Glasgow</p>	<p>Dr Ellis Rintoul & Emily Costello</p> <p>Dr Theo Kreouzis & Albanik Gashi</p> <p>Nathan Burgess</p>
11:45 am	<p>4. NuSec-NNSA UK-US Collaboration Grants PDRAs Award Results (15 minutes each, with Q&A)</p> <p>a. Machine Learning Integrated Quadrant Gamma Detectors for Enhanced Safeguards, Security and Inspection, University of Bristol</p> <p>b. Development of Perovskite Scintillators, University of Surrey</p> <p>c. Develop a Geant 4 simulation framework to optimize a multimodal detector for tomographic imaging of used nuclear fuel casks, University of Glasgow</p> <p>d. Neutron and X-ray imaging in extreme environments, University of York</p>	<p>Dr Peter Martin</p> <p>Dr Joydip Ghosh</p> <p>Dr Guangliang Yang</p> <p>Chris Murphy</p>
12:45	<p>5. NuSec Activities Update</p> <ul style="list-style-type: none"> • Updates & Call, 2023 UK-US Collaboration Grant Applications • AWE Sigma Data Challenge Launch 	<p>Paul Sellin</p> <p>Neil Gaspar</p>
13:00	Workshop ENDS	