

# International Explosives Conference 2024

## Tuesday 18 June – Day 1

0900 - 1000	<b>Registration &amp; Coffee</b>
1000 – 1010	<b>Facilitation &amp; Welcome</b>
1010 - 1020	<b>Opening Address</b>
<b>Session 1: Simulation &amp; Computing</b>	
Session Chair: Professor Yogi Gupta	
1020 - 1100	<b>Opening Keynote:</b> Professor Yogi Gupta, <i>Washington State University, USA</i>
1100 – 1120	<b>Analysis of the burning of spheres and cubes</b> Professor John Curtis, <i>AWE</i>
1120 – 1140	<b>UCM/MMP cookoff models for explosives containing RDX</b> Dr Michael Hobbs, <i>Sandia National Laboratories</i>
1140 – 1210	<b>Morning Tea &amp; Coffee</b>
1210 - 1230	<b>Opportunities for analysis and visualization of detonator experiments using modern statistical methods</b> Dr Jonathan Rougier, <i>AWE</i>
1230 - 1250	<b>POSTER Session</b>
1250 - 1400	<b>Lunch</b>
<b>Session 1 (continued): Simulation &amp; Computing</b>	
Session Chair: Professor Carole Morrison	
1400 - 1440	<b>Afternoon Keynote:</b> Professor Carole Morrison, <i>University of Edinburgh</i>
1440 – 1500	<b>STASIS calculations of expansion states for detonation products and fits to JWL equations of state</b> Dr Andrew Parker, <i>Fluid Gravity Engineering Ltd</i>
1500 - 1520	<b>Numerical framework for the optimisation of HVRB parameters from experimental measurements</b> Dr Simone Falco, <i>University of Oxford</i>
1520 - 1550	<b>The expansion of high fidelity physics capabilities for simulating the detonation and behaviour of explosive materials</b> Ajay Limbu/Mark Whittaker, <i>Dstl</i>
1550 – 1610	<b>Afternoon Tea &amp; Coffee</b>

1610 - 1630	<b>Recent improvements in Dstl's capability for modelling UNDEX and associated structural response</b> <i>Elliot Tam/Mark Whittaker, Dstl</i>
1630 - 1650	<b>Developments on the analytical modelling of the pinch of hollow explosive cylinders</b> <i>Charlie Ellcome, AWE</i>
1650 - 1710	<b>Updating kinetic model correlations for modelling linear burning rates: the influence of surface temperature on the pressure dependent behaviour of nitromethane</b> <i>Dr Rachel Schwind, University of Edinburgh</i>
1710 - 1715	<b>The Shock Waves and Extreme Conditions group at the IOP</b> <i>Dr Michael Goff</i>
1715 - 1830	<b>Drinks Reception with canapes and nibbles</b>

## Wednesday 19 June – Day 2

0830 - 0900	<b>Arrival and Refreshments</b>
0900 - 0905	<b>Admin Notices</b>
<b>Session 2: Synthesis &amp; Manufacture</b> Session Chair: Dr Carole Rossi	
0905 - 0945	<b>Keynote:</b> <b>Nanoenergetic: Paving the Way to Smaller and Smarter Pyrotechnics</b> <i>Dr Carole Rossi, LAAS, CNRS France</i>
0945 - 1005	<b>Synthesis, characterisation and energetic performance of a new copper compound based on 3,4,5-trinitro-1H-pyrazole</b> <i>Dr Ashfaq Afsar, University of Edinburgh</i>
1005 - 1025	<b>Continuous crystallization of energetic materials using continuous oscillatory baffled crystalliser</b> <i>Ruaraidh Wells, NiTech Solutions Ltd</i>
1025 - 1045	<b>Flow Electrochemistry for Amine Functionalization</b> <i>Professor Thomas Wirth, Cardiff University</i>
1045 - 1115	<b>Morning Tea &amp; Coffee</b>
1115 - 1135	<b>Improved Synthesis of Diaminoazoxyfurazan (DAAF) with a Manufacturing Mindset</b> <i>Elizabeth Francois, LANL</i>

1135 - 1155	<b>Composite rocket propellant manufacture: A comparison RAM vs planetary mixing</b> <i>Anna Stanners, Roxel</i>
1155 - 1215	<b>Foundation of a new family of azido binders based on polymeric cyclodextrins</b> <i>Dr Licia Dossi, Cranfield University</i>
1215 - 1235	<b>High pressure structural study of ammonium dinitramide</b> <i>Qi Feng Chang, University of Edinburgh</i>
1235 - 1345	<b>Lunch</b>
<b>Session 3: AI &amp; Machine Learning</b> Session Chair: Dr Felix Plasser	
1345 - 1425	<b>Keynote:</b> <b>Machine learning crystalline densities and detonation parameters from quantum chemistry data</b> <i>Dr Felix Plasser, Loughborough University</i>
1425 - 1445	<b>Energetic Material Qualification: Characterisation for Capability</b> <i>Dr Matthew Andrews, MOD Abbey Wood</i>
1445 - 1505	<b>Prediction of material properties of energetic materials using machine learning methods</b> <i>Jan Langer, Fraunhofer ICT</i>
1505 - 1530	<b>Afternoon Tea &amp; Coffee</b>
1530 - 1550	<b>An overview of KIVMesh, a new computational pipeline for Datamining Computed Tomography datasets of energetic materials</b> <i>Jonathan Miller, Cranfield University</i>
1550 - 1610	<b>Machine learning properties of energetic materials from quantum chemistry calculations of single molecules</b> <i>Dr Patrick Kimber, Loughborough University</i>
1610 - 1630	<b>Using AI for the Discovery and Synthesis of Advanced Energetic Materials</b> <i>Sandeep Tamber, QinetiQ</i>
1630 -1650	<b>TATB thermal decomposition: An improved kinetic model for explosive safety analysis</b> <i>Keith Coffee, LLNL</i>
1650 – 1700	<b>Pre-Dinner Brief</b>
1900 - 2300	<b>Dinner</b> <b>InterContinental Hotel Edinburgh The George</b>

## Thursday 20 June – Day 3

0830-0900	<b>Arrival and Refreshments</b>
0900 – 0905	<b>Administration Notices</b>
<b>Session 4: Space and Other</b>	
Session Chair: Professor Jackie Akhavan	
0905 – 0945	<b>Keynote:</b> <b>Space: Current and Future Opportunities</b> <i>Ali Stickings, Fraser Nash: UK Space Programme</i>
0945 - 1005	<b>Frictional Heating Measurements in PBX 9501</b> <i>Alan Williams, Sandia National Laboratories</i>
1005 - 1025	<b>Calculating the heat of explosion for non-ideal explosives</b> <i>Brigadier Gareth Collett, Cranfield University</i>
1025 - 1045	<b>Degradation kinetics of IR decoy flares in seawater</b> <i>Captain Francesco Amendola, Italian Air Force</i>
1045 - 1115	<b>Morning Tea &amp; Coffee</b>
1115 - 1135	<b>The growth and shock testing of large single crystal energetics and analogues</b> <i>Alice Mintoff, Cranfield University</i>
1135 - 1155	<b>Cocrystallisation Studies of Ammonium Dinitramide</b> <i>Akachai Khumsri, University of Edinburgh</i>
1155 - 1210	<b>Awards &amp; Presentations</b>
1210 - 1220	<b>Closing Address</b>
1230 - 1330	<b>DEPART</b>