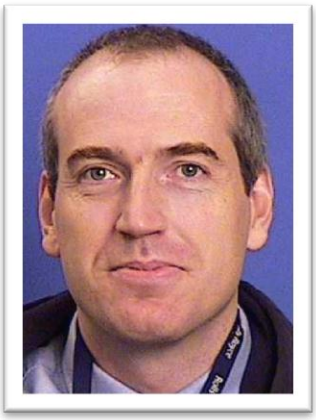
Guest Speakers

Prof. Sergei Dudarev

Sergei Dudarev is principle scientist at the UK Atomic Energy Authority. He holds a Visiting Professorship at Oxford, and is a Visiting Professor at the Department of Physics, Imperial College London in the Condensed Matter group. Presently, he co-chairs the European Fusion Development Agreement (EFDA) Materials Topical Group, and prior to this he was a Scientific Coordinator of the EFDA Fusion Materials Modelling Programme.

Prof. Richard Needs

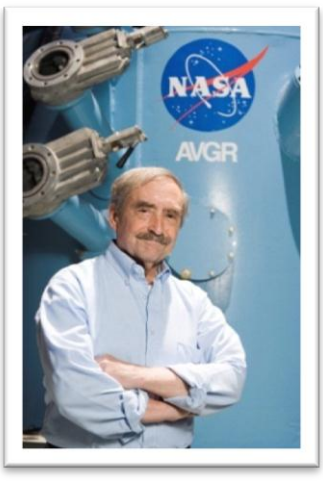
Richard Needs has been researching the electronic properties of materials since 1983. He has worked on a wide range of complex systems such as surfaces, interfaces, defects, and clusters, mainly studying structural properties, including phase transitions and excitation energies. He has used a variety of computational techniques, including density functional theory methods, many-body perturbation theory and quantum Monte Carlo methods. In recent years he has been developing continuum fermion quantum Monte Carlo methods and applying them to problems in condensed matter. He and his group have developed the "CASINO" quantum Monte Carlo code, now used in a number of groups around the world.



Prof. David Rugg

David Rugg completed a PhD in rapid solidification of magnesium alloys from Sheffield prior to continuing work for 7 years on HCP metals whilst in the R+D department of IMI Titanium. Following this, he has spent 16 years at Rolls-Royce plc. where he is a Rolls-Royce Fellow and the Corporate Specialist for compressor and nuclear materials. Dave holds a Visiting Chair in Engineering at Oxford and is a Royal Society Industrial Fellow.

Prof. Peter Schultz



Peter H. Schultz received his Ph.D. in Astronomy at the University of Texas at Austin in 1972. After working as a research associate at the NASA Ames Research Centre, and a Staff Scientist at The Lunar and Planetary Institute, he became an Associate Professor in the Department of Geological Sciences at Brown University in 1984. He was promoted to full Professor in 1994. In addition to his research and teaching responsibilities at Brown, Pete has served as Director of the Lunar and Planetary Institute Planetary Image Facility, and is currently the Director for both the Northeast Planetary Data Centre and the NASA/Rhode Island University Space Grant Consortium.

Schedule of Events

.MONDAY 18th February

9.30	**Registration – tea, coffee and breakfast pastries will be served**	
10.00	**Welcome address from Dr. Bill Proud, Technical Director of the ISP**	
10.20	**Invited Speaker: Prof. Sergei Dudarev**	
Defects and Dislocations in Magnetic and Non-magnetic Metals		
11.00	**Session One – Extreme Conditions**	
Generation of cylindrically converging radiative shocks in gas using pulsed-power		Guy Burdiak, Institute of Shock Physics
The Effects of Peak Shock Stress on the Substructure Evolution and Spall Response of 1100-O Aluminium		Cyril Williams, US Army Research Laboratory
11.40	**Tea and Coffee sponsored by** QinetiQ	
12.00	**Session Two - Biological Materials**	
Development of Porcine Tissue Models for Blast Injury		Ben Butler, Centre for Blast Injury Studies
Shewanella Oneidensis MR-1: Survival under pressure.		Rachael Hazael, University College London
Survival of biological materials and biomarkers in high strain rate events (hypervelocity impacts		Mark Burchell, University of Kent
The Effect of Hydrostatic Pressure vs. Shock Loading on the Viability of Plant Seeds		James Leighs, Cranfield University
13.20	**Lunch**	
14.30	**Session Three – Experimental Technique**	
The use of metallic flyers with the embedded particle velocity gauge technique		Mike Goff, Cranfield University
An Experimental Platform to Study Blast Injuries: a Bottom-Up Approach		Ciara Bo, Institute of Shock Physics
Thin film copper thermistors with microsecond time response for shock temperature measurements of polymers		Nick Taylor, Cambridge University
A novel graded-density-impactor		Ron Winter, AWE
15.50	**Tea and Coffee**	
16.10	**Invited Speaker: Prof. Peter Schultz**	
"Shooting the Moon": Strategies and results of excavating buried hidden volatiles on the Moon from NASA's LCROSS mission.		
16.50	**END**	

Schedule of Events

TUESDAY 19th February

09.30	**Coffee, Tea and breakfast pastries are served**	
10.00	**Invited Speaker: Prof. Richard Needs**	
Searching for Structures of Materials at High Pressures		
10.40	**Session Four – High Energy and High Pressure**	
The CREST Reactive Burn Model for Explosives		Nick Whitworth, AWE
Simulation of Buried Explosive Detonation within Granular Soil		Paul Coster, Edinburgh University
Extended Solids under Extreme Magnetic and Shock Pressure		James Kim, Enig Associates, Inc.
11.40	**Tea and Coffee**	
12.00	**Session Five – Heterogeneous Materials**	
The Role of Particle Size in the Shock Compaction of Brittle Granular Materials		Will Neal, Institute of Shock Physics
Release Measurements of Sand		Chris Braithwaite, Cambridge University
Shock Compression of Geological Materials		Simon Kirk, Cambridge University
13.00	**LUNCH**	
14.10	**Session Six - Computations and Equations of State**	
High-pressure and variable-temperature structural studies of the energetic material, 2,4-dinitroanisole (DNAN).		Iain Haslam, Sheffield University
Investigation of high strain rate effects on crater morphology: oblique		Mark Price, University of Kent
impacts Z- method calculation of the Mg melt curve		Shailesh Mehta, AWE
15.10	**Tea and Coffee**	
15.30	**Invited Speaker: Prof. David Rugg**	
High Strain Rate Behaviour of Engineering Materials		
16.10	**Workshop on Velocimetry chaired by Martin Philpott**	
16.20	**Closing Address**	