<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Programme</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:15am to 8:45am</td>
<td>Lennox</td>
<td>Registration and Arrival Refreshments</td>
</tr>
<tr>
<td>8:45am to 9am</td>
<td>Lennox</td>
<td>Opening Ceremony</td>
</tr>
<tr>
<td>9am to 9:50am</td>
<td>Lennox</td>
<td>Plenary</td>
</tr>
<tr>
<td>9:50am to 10:15am</td>
<td>Lennox</td>
<td>Morning Break</td>
</tr>
<tr>
<td>10:15am to 12:15pm</td>
<td>Lowther</td>
<td>Hydrides 1 (Session Chair: Stan Tozer)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:15am - 10:45am Lilia Boeri: Ab-initio design of high-Tc conventional Superconductors: how far is room-temperature Superconductivity?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:45am - 11:15am Hanyu Liu: High superconductivity in light-element systems under high pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11:15am - 11:30am Taner Yildirim: High-throughput search and discovery of near-room temperature superconductors under extreme pressures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11:30am - 11:45am Siyu Chen: Strong-correlation effects in high-pressure rare-earth superhydrides</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12:00pm - 12:15pm Changqing Jin: New Polyhydride Superconductors</td>
</tr>
<tr>
<td>10:15am to 12:15pm</td>
<td>Menteith</td>
<td>Phase Diagrams - Ionic Systems (Session Chair: Kamil Dziubek)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:15am - 10:45am Arthur Haozhe Liu: High pressure phase transitions studies using synchrotron X-ray techniques</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:45am - 11:15am Marion Harmand: Tracking phase transitions of Fe2O3 at planetary interiors conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11:15am - 11:30am Anja Rosenthal: The densities and phase transformations of subducted hydrous oceanic crust up to the Earth’s transition zone: Insights from in-situ x-ray diffraction measurements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11:30am - 11:45am Renata Wentzcovitch: PBE-GGA predicts the B8\leftrightarrow B2 phase boundary of FeO at Earth’s core conditions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multifunctional Materials (Session Chair: Yogesh Vohra)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:15am - 10:45am Catalin Popescu: Cooling and energy conversion via pressure in barocaloric materials</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10:45am - 11:00am Francesco Capitani: Metastable liquid-like CO2 confined in a mesoporous Metal-Organic Framework at high-pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11:00am - 11:15am Josu Sánchez-Martín: High-pressure Structural Stability of NiV2O6 and CoV2O6: Raman and Infrared Spectroscopy (Ni, Co) and X-ray diffraction (Co) studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11:15am - 11:30am Xiaodong Yao: Anomalous polarization enhancement in a vdW ferroelectric material under pressure</td>
</tr>
<tr>
<td>Time</td>
<td>Session Location</td>
<td>Event</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>10:15am - 10:45am</td>
<td>Lammermuir</td>
<td><strong>Ice, Water and Clathrates</strong> <em>(Session Chair: John Loveday)</em></td>
</tr>
<tr>
<td>10:45am - 11:15am</td>
<td></td>
<td>Katrin Amann-Winkel: Water &amp; amorphous ice: using X-rays to map the phase diagram</td>
</tr>
<tr>
<td>11:15am - 11:30am</td>
<td></td>
<td>Rachel J. Husband: XFEL heating of low Z materials: a new pathway to superionic ice</td>
</tr>
<tr>
<td>11:30am - 11:45am</td>
<td></td>
<td>Fernando Izquierdo-Ruiz: Molecular replacement in Clathrate Hydrates</td>
</tr>
<tr>
<td>11:45am - 12:00pm</td>
<td></td>
<td>Ciprian Pruteanu: Non-random fluid mixtures, present and future: the case of methane and water</td>
</tr>
<tr>
<td>12:00pm - 12:15pm</td>
<td></td>
<td>Gunnar Weck: Phase diagram of hot dense superionic ice probed by synchrotron X-ray diffraction</td>
</tr>
<tr>
<td>12:15pm to 2pm</td>
<td>Lennox</td>
<td>Lunch</td>
</tr>
<tr>
<td>10:15am - 10:45am</td>
<td>Moffat</td>
<td><strong>Magnetic Materials 1</strong> <em>(Session Chair: Jing Song)</em></td>
</tr>
<tr>
<td>10:45am - 11:00am</td>
<td></td>
<td>Wenli Bi: High-pressure effect on candidate Dirac materials EuMnPn2 (Pn = Sb, Bi)</td>
</tr>
<tr>
<td>11:00am - 11:15am</td>
<td></td>
<td>Shiyu Deng: Pressure tuning and Evolution of Structural, Magnetic and Electronic Properties in TMPX3 van-der-Waals Compounds</td>
</tr>
<tr>
<td>11:15am - 11:30am</td>
<td></td>
<td>Mohamed Zayed: Neutron scattering study of SrCu2(BO3)2 under high pressure</td>
</tr>
<tr>
<td>11:30am - 11:45am</td>
<td></td>
<td>Angel M. Arevalo-lopez: High-pressure ilmenite-type MnVO3: crystal and spin structures in the itinerant-localized-covalent regimes</td>
</tr>
<tr>
<td>12pm to 2pm</td>
<td>Lowther</td>
<td>Meeting: &quot;Women Under High Pressure&quot; group</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shanti Deemyad will lead this session, introducing the goals and direction of &quot;Women in high pressure&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Then successful scientists will share with the audience about their trajectories: Sakura Pascarelli, Chrystele Sanloup, Eva Zurek, Laura Henry. Followed by an open discussion</td>
</tr>
<tr>
<td>2pm to 4pm</td>
<td>Lennox</td>
<td><strong>Cores of Terrestrial Planets</strong> <em>(Session Chair: Guillaume Morard)</em></td>
</tr>
<tr>
<td>2:00pm - 2:30pm</td>
<td></td>
<td>Chris McGuire: In-situ X-ray diffraction of laser-shock compressed binary compounds at Megabar pressures</td>
</tr>
<tr>
<td>2:30pm - 2:45pm</td>
<td></td>
<td>Anatoly Belonosnko: Experimental evidence for the high-PT body-centered cubic Fe</td>
</tr>
<tr>
<td>2:45pm - 3:00pm</td>
<td></td>
<td>Efim Kolesnikov: Development of strength and texture in hexagonal Fe-Si-C alloy at planetary cores conditions</td>
</tr>
<tr>
<td>3:00pm - 3:15pm</td>
<td></td>
<td>Tetsuya Komabayashi: Chemical thermodynamics of Earth’s core materials under high pressure</td>
</tr>
<tr>
<td>3:15pm - 3:30pm</td>
<td></td>
<td>Susanne Müller: Effect of carbon on sound velocities of iron alloys and compounds at Earth’s inner core conditions</td>
</tr>
<tr>
<td>3:30pm - 3:45pm</td>
<td></td>
<td>Ian Ocampo: In situ x-ray diffraction of iron oxides dynamically loaded to multi-megabar pressures</td>
</tr>
<tr>
<td>3:45pm - 4:00pm</td>
<td></td>
<td>Jac Van Driel: Composition of the Martian Core</td>
</tr>
<tr>
<td>Time</td>
<td>Lowther</td>
<td>Session</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 2:00pm - 2:30pm | **Chemical Bonding 1** (Session Chair: Paul Attfield) | 2:00pm - 2:30pm **Stefano Racioppi**: Core-Electrons Chemical Bonding. Redefining the Chemistry of the Elements at High Pressure  
2:30pm - 3:00pm **Hussien H. Osman**: Mechanism of electron-rich multicenter bonding in elemental crystals under pressure  
3:00pm - 3:15pm **Francisco Javier**: High pressure studies in compounds with multicenter bonds  
3:15pm - 3:30pm **Madhavi Dalsaniya**: Theoretical investigation on the reactivity of fluorine and bromine at high pressure: emergence of novel bromine fluorides  
3:30pm - 3:45pm **Michael Pravica**: Inner shell chemistry at extreme conditions  
3:45pm - 4:00pm **Alhaddad Toni**: Exceptional phonon point versus free phonon coupling in Zn-based semiconductor mixed crystals under pressure |

<table>
<thead>
<tr>
<th>Time</th>
<th>Menteith</th>
<th>Session</th>
</tr>
</thead>
</table>
| 2:00pm - 2:30pm | **Nitrides, Borides and Carbides 1** (Session Chair: Dominique Laniel) | 2:00pm - 2:30pm **Maxim Bykov**: High-pressure synthesis of binary and ternary polynitriles in laser-heated diamond anvil cells  
2:30pm - 3:00pm **Florian Trybel**: Ultra-high complexity of synthesized meta-stable nitrides  
3:00pm - 3:15pm **Julio Pellicer-Porres**: BN under high pressure revisited  
3:15pm - 3:30pm **Altair Soria Pereira**: Exploiting the reduction of Si melting temperature for the production of boron carbide-based composites under high pressure  
3:30pm - 3:45pm **Hitoshi Yusa**: High-pressure synthesis of light lanthanide dodecaborides (RB₁₂) : Synthesis condition, valence fluctuation and bulk moduli  
3:45pm - 4:00pm **Matteo Ceppatelli**: Synthesis of single-bonded cubic AsN from the high-pressure and high-temperature chemical reaction of arsenic and nitrogen |

<table>
<thead>
<tr>
<th>Time</th>
<th>Lammermuir</th>
<th>Session</th>
</tr>
</thead>
</table>
| 2:00pm - 2:30pm | **Developments at XFELs & Lasers** (Session Chair: Jon Eggert) | 2:00pm - 2:30pm **Laura Robin Benedetti**: Progress in Time-Resolved X-ray Diffraction with Laser Compression at the National Ignition Facility (NIF)  
2:30pm - 3:00pm **R. Stewart Mcwilliams**: Design of Static High Pressure Experiments at Free Electron Lasers  
3:00pm - 3:15pm **Samantha Clarke**: In situ X-ray diffraction of TATB on NIF  
3:15pm - 3:30pm **Nicolas Jaisle**: Finite Element Method applied to MHz X-ray diffraction in Diamond Anvil Cell  
3:30pm - 3:45pm **James McHardy**: Exploring hard X-ray free electron laser energy deposition through target imprinting  
3:45pm - 4:00pm **Orianna Ball**: Dynamic Optical Pyrometry of Static High-Pressure Targets under X-ray Free Electron Laser Radiation |

<table>
<thead>
<tr>
<th>Time</th>
<th>Moffat</th>
<th>Session</th>
</tr>
</thead>
</table>
| 2:00pm - 2:30pm | **Ceramics and Composites** (Session Chair: Shrikant Bhat) | 2:00pm - 2:30pm **Bo Xu**: Heterogeneous Diamond-cBN Composites with Superb Toughness and Hardness  
2:30pm - 2:45pm **Fang Peng**: Study on Stress, Strain and Densification of Superhard Materials and Ceramics during High Pressure Sintering  
2:45pm - 3:00pm **Tao Liang**: Mechanical properties of high-pressure synthesized hexagonal silicon  
3:00pm - 3:15pm **Volodymyr Svitlyk**: Extreme Zr-based synthetic phases for the safe disposal of nuclear waste |

<table>
<thead>
<tr>
<th>Time</th>
<th>Lennox</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>4pm to 4:30pm</td>
<td></td>
<td>Afternoon Break</td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td>Title</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>4:30pm to 6:30pm</td>
<td><strong>Lennox</strong></td>
<td><strong>Hydrides 2</strong> <em>(Session Chair: Eva Zureck)</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>5:30 pm - 5:45 pm Graeme J Ackland</strong>: Hydrogen molecules in competition with superconductivity</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>6:15 pm - 6:30 pm Tomas Marqueno</strong>: Na-W-H and Na-Re-H ternary hydrides at high pressures</td>
</tr>
<tr>
<td></td>
<td>Chemical Bonding 2 <em>(Session Chair: Paul Attfield)</em></td>
<td><strong>4:30 pm - 5:00 pm Kuo Li</strong>: Threshold distance of topochemical polymerization</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>5:30 pm - 5:45 pm Alvaro Lobato</strong>: Enhancing thermoelectric power in skutterudites by tuning chemical interactions under pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>6:00 pm - 6:15 pm Szymon Sobczak</strong>: Structural and Electronic Insights Into the Role of Anagostic Bonds in Metal Dithiocarbamate Complexes</td>
</tr>
<tr>
<td></td>
<td>Minerals Under High Pressure <em>(Session Chair: Tetsuya Komabayashi)</em></td>
<td><strong>4:30pm - 5:00pm Samu Ishizawa</strong>: Melting experiment of MgO under high pressure by in situ time-resolved X-ray diffraction measurement with Bayesian estimation method</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>5:30pm - 5:45pm Yunhua Fu</strong>: Analysis of hydrogen concentration in anorthite from angrite by developed micro-NMR technique</td>
</tr>
<tr>
<td></td>
<td>Facility Development 1 <em>(Session Chair: Sakura Pascarelli)</em></td>
<td><strong>4:30pm - 5:00pm Olivier Mathon</strong>: Static and dynamic high-pressure opportunities at ESRF XAS beamlines BM23 and ID24</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>5:45pm - 6:00pm Nenad Vellisavljevic</strong>: Overview of High-Pressure Collaborative Access Team (HPCAT) facility at the Advanced Photon Source at Argonne National Laboratory</td>
</tr>
<tr>
<td>Time</td>
<td>Location</td>
<td>Event Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>4:30 pm</td>
<td>Moffat</td>
<td>Zhidan Zeng: Preservation of high-pressure materials in nanostructured diamond capsules</td>
</tr>
<tr>
<td>5:00 pm</td>
<td>Moffat</td>
<td>Alexander Soldatov: Response of a few-layer graphene to high shear stress</td>
</tr>
<tr>
<td>5:15 pm</td>
<td>Moffat</td>
<td>Beatrice D'Alò: High-pressure photoluminescence study of monolayer TMDs: an extensive investigation of the role of defects induced by sample/substrate interaction</td>
</tr>
<tr>
<td>5:30 pm</td>
<td>Moffat</td>
<td>Riccardo Galafassi: Investigation of environment and substrate roles on high pressure tuning of graphene properties</td>
</tr>
<tr>
<td>5:45 pm</td>
<td>Moffat</td>
<td>Camino Martín-Sánchez: Monitoring gold nanoparticles at high pressure through in situ small-angle x-ray scattering</td>
</tr>
<tr>
<td>6:00 pm</td>
<td>Moffat</td>
<td>Christopher Schröck: Swift heavy ion irradiation of bismuth nanowire networks pressurized in diamond anvil cells</td>
</tr>
<tr>
<td>6:15 pm</td>
<td>Moffat</td>
<td>Marina Teresa Candela: Cubic (Eu1-xYbx)2O3 nanophosphors under compression: a joint structural and spectroscopic study</td>
</tr>
<tr>
<td>6pm to 8pm</td>
<td>Organiser’s Room</td>
<td>AIRAPT Committee Meeting</td>
</tr>
<tr>
<td>6:30pm to 8pm</td>
<td>Lennox</td>
<td>Cocktail Reception</td>
</tr>
</tbody>
</table>