

## Sunday, Sep. 23

16:00 - Registration

17:00 - 19:00 Welcome Party

## Monday, Sep. 24

8:30 - Registration

9:10 - 10:00 Opening Session

Chair: Wataru Utsumi (JAEA, Japan)

9:10 - 9:15 Opening

9:15 - 9:20 **Hideki Namba** (JAEA, Japan)

*Welcome Address*

9:20 - 9:40 **Kazuhisa Kakurai** (JAEA, Japan)

*Introducing the Quantum Beam Science Directorate*

9:40 - 10:00 **Takehiko Yagi** (Ehime Univ., Japan)

*High-Pressure Neutron Experiments in Japan: Introducing a Project "Earth Science Based on the High Pressure and Temperature Neutron Experiments"*

10:00 - 10:40 **Keynote Lecture**

**Hiroyuki Kagi** (Univ. of Tokyo, Japan)

*Launching PLANET Beamline for Neutron Diffraction Studies on Deep-Earth and Planetary Materials*

10:40 - 11:10 **Coffee Break**

11:10 - 12:30 **Session 1 :**

**Crystal Structures, Phase Transition and Dynamic Phenomena**

Chair: Karen Friese (JCNS-2, Germany)

(Ingo Loa (Univ. of Edinburgh, UK))

11:10 - 11:30 **Yutaka Ueda** (Univ. of Tokyo, Japan)

*(Invited) Peierls Mechanism of MI Transition in Ferromagnetic  $K_2Cr_8O_{16}$*

11:30 - 11:50 **David Allan** (Diamond Light Source, UK)

*(Invited) High-Pressure Polymorphism in Small-Molecule Systems*

11:50 - 12:10 **Takamitsu Yamanaka** (Carnegie Inst. of Washington, USA)

*Electron Density and Anharmonic Atomic Vibration Analysis of Ferroelectrics and Relaxor by MEM using Single-Crystal Diffraction up*

to 65 GPa

12:10 - 12:30 **Ross Howie** (Univ. of Edinburgh, UK)  
*Mixed Atomic and Molecular Phase of Dense Hydrogen and Deuterium*

**12:30 – 12:40** **Conference Photo**

**12:40 - 13:40** **Lunch**

**13:40 - 15:00** **Session 2 :**  
**Amorphous, Liquid, Non-Crystalline and Nanocrystalline Phases**

Chair: Yoshinori Katayama (JAEA, Japan)

Haozhe Liu (Harbin Inst. of Technology, China)

13:40 - 14:10 **Ayano Chiba** (Keio Univ., Japan)  
(Invited) *Pressure-Induced Structural Change in Poly (4-methyl-1-pentene) Melt*

14:10 - 14:40 **Qiaoshi Zeng** (Stanford Univ., USA)  
(Invited) *Long-Range Topological Order in Metallic Glass*

14:40 - 15:00 **Shinichi Machida** (Carnegie Inst. of Washington, USA)  
*Neutron Diffraction Experiments for Gas Hydrates: Structures of Amorphous Solid Solution of Water and Clathrate Forming Guests*

**15:00 - 15:10** **Break**

**15:10 - 16:30** **Session 3 :**  
**Magnetic and Electronic Phenomena at High Pressure**

Chair: Oliver Tschauner (Univ. of Nevada, USA)

Toyotaka Osakabe (JAEA, Japan)

15:10 - 15:40 **Daniel Farber** (Univ. of California, USA)  
(Invited) *High Resolution Inelastic X-ray Scattering at High Pressures: New Applications in the Earth and Materials Sciences*

15:40 - 16:10 **Yoshiya Uwatoko** (Univ. of Tokyo, Japan)  
(Invited) *Effect of Pressure on the Heavy Fermion System  $\text{YbCo}_2\text{Zn}_{20}$*

16:10 - 16:30 **Takahiro Tomita** (Nihon Univ. Japan)  
*Unusual  $T_c$  of  $\text{FeSe}_{1-x}\text{S}_x$  under Pressure*

**16:30 - 17:00** **Coffee Break**

**17:00 - 18:15 Session 4 :**

**Organic and Biological Systems**

Chair: Nicola Casati (Paul Scherrer Inst., Switzerland)

(Francesca Fabbiani (Univ. of Göttingen, Germany))

17:00 - 17:25 **Nicola Casati** (Paul Scherrer Inst., Switzerland)

(Invited) *Organic Reactivity at High Pressure*

17:25 - 17:50 **Tetsuro Fujisawa** (Gifu Univ., Japan)

(Invited) *Synchrotron Small-Angle X-ray Scattering Studies on Protein Complexes under High Hydrostatic Pressure*

17:50 - 18:15 **Vasily Minkov** (ISSCM, Russia)

(Invited) *The Weak S-H...X Hydrogen Bonds and their Contribution to Phase Transitions in Cysteine-Containing Crystals under Extreme Conditions*

**Tuesday, Sep. 25**

**9:00 - 10:20 Session 5 :**

**Water, Ice and Other Molecular Systems**

Chair: Stefan Klotz (Univ. P. & M. Curie, France)

John Loveday (Univ. of Edinburgh, UK)

9:00 - 9:20 **Frederic Datchi** (Univ. P. & M. Curie, France)

(Invited) *Non-molecular solid phases of carbon dioxide and ammonia*

9:20 - 9:40 **Timothy Strobel** (Carnegie Inst. of Washington, USA)

(Invited) *Recent Developments in Molecular Clathrates under Pressure*

9:40 - 10:00 **Malcolm Guthrie** (Carnegie Inst. of Washington, USA)

*The Structure of Ice VII on the Approach to Symmetrisation*

10:00 - 10:20 **Craig Wilson** (Univ. of Edinburgh, UK)

*A High Pressure Ammonia-Water Solid Solution*

**10:20 - 10:50**

**Coffee Break**

**10:50 - 12:10 Session 6 :**

**Materials Science**

Chair: Vladimir Solozhenko (LSPM-CNRS, France)

(Andrzej Katrusiak (Adam Mickiewicz Univ., Poland))

10:50 - 11:10 **Alexander Goncharov** (Carnegie Inst. of Washington, USA)

(Invited) *High-Pressure Synthesis of New Materials via Formation of New Bonding Patterns*

11:10 - 11:30 **Andrey Baranov** (Moscow State Univ., Russia)  
(Invited) *Chemical Routes for High Pressure Phases Stabilization on the Example of Zinc Oxide*

11:30 - 11:50 **Julien Haines** (CNRS-Univ. Montpellier 2, France)  
(Invited) *High Pressure Powder and Single-Crystal X-ray Diffraction Studies of Phase Transitions in Negative Thermal Expansion Metal Cyanides*

11:50 - 12:10 **Wei-tin Chen** (Kyoto Univ. Japan)  
*High-Pressure Synthesis of Novel A- and B-site Ordered Double Perovskite  $\text{CaCu}_3\text{Fe}_2\text{M}_2\text{O}_{12}$  ( $M = \text{Nb}, \text{Ta}, \text{Sb}$  and  $\text{Re}$ )*

**12:10 - 13:10 Lunch**

**13:10 - 15:10 Poster Session**

**15:10 - 15:30 Break**

**15:30 - 16:45 Session 7 :  
Chemistry**

Chair: Kamil Dziubek (Adam Mickiewicz Univ., Poland)  
Timothy Strobel (Carnegie Inst. of Washington, USA)

15:30 - 15:55 **Vladimir Solozhenko** (LSPM-CNRS, France)  
(Invited) *Chemical Interaction and Phase Relations in the B–N–O System at High Pressures and High Temperatures*

15:55 - 16:20 **Scott McKellar** (Univ. of Edinburgh, UK)  
(Invited) *Pressure-Induced Modification of Metal-Organic Frameworks*

16:20 - 16:45 **Reiji Kumai** (KEK, Japan)  
(Invited) *Pressure-Induced Ferroelectricity of Acid–Base Supramolecules*

**16:45 - 17:15 Coffee Break**

**17:15 - 18:35 Session 8 :  
Geosciences and Planetary Sciences**

Chair: Przemek Dera (Univ. of Chicago, USA)  
Jennifer Kung (National Cheng Kung Univ, Taiwan)

17:15 - 17:35 **Jin Zhang** (Univ. of Illinois at Urbana-Champaign, USA)  
(Invited) *The Pressure-Induced  $\text{Pbca}$ - $\text{P}2_1/c$  Phase Transition in Natural Fe, Al – Bearing Orthoenstatite – Evidence from Single Crystal X-ray Diffraction and Raman Spectroscopy Experiments*

- 17:35- 17:55 **Gregory Finkelstein** (Princeton Univ., USA)  
(Invited) *Single-Crystal X-Ray Diffraction of Forsterite to 90 GPa*
- 17:55 - 18:15 **Shigeaki Ono** (JAMSTEC, Japan)  
(Invited) *Pressure-Induced Spin Transitions of Iron and Iron Alloys at Earth's Core Conditions*
- 18:15 - 18:35 **Ronald Miletich** (Univ. of Vienna, Austria)  
*Single-Crystal Diffraction on CaCO<sub>3</sub>-III at High-Pressure High-Temperature Conditions*

## Wednesday, Sep. 26

**9:00 - 10:20 Session 9 :  
Theory and Computation**

Chair: Toshiaki Iitaka (RIKEN, Japan)  
(Artem Oganov (Stony Brook Univ., USA))  
(Nandini Garg (BARC, India))

- 9:00 - 9:20 **Surinder Sharma** (BARC, India)  
(Invited) *Determination of Structural Features at High Pressure using Theoretical Tools*

- 9:20- 9:40 **John Tse** (Univ. of Saskatchewan, Canada)  
(Invited) *Room Temperature Electronic and Dynamical Structure of High Pressure Phases of Solid Hydrogen near the Phase III-IV Boundary*

- 9:40 - 10:00 **Tsuyoshi Miyazaki** (NIMS, Japan)  
(Invited) *Atomic and Electronic Structures of BEDT-TTF and M(dmit)<sub>2</sub> Systems at High Pressures: A First-Principles Study of Organic Molecular Solids*

- 10:00 - 10:20 **Karen Friese** (JCNS-2, Germany)  
*Refinement of High-Pressure Single-Crystal Diffraction Data Using Jana2006.*

**10:20 - 10:50 Coffee Break**

**10:50 - 12:10 Session 10 :  
Techniques for High-Pressure Studies**

Chair: Guoyin Shen (Carnegie Insit. of Washington, USA)  
Malcolm Guthrie (Carnegie Insit. of Washington, USA)  
(Chris Tulk (ORNL, USA))

- 10:50 - 11:10 **Jennifer Jackson** (California Inst. of Technology, USA)  
(Invited) *Illuminating Earth's Deep Interior with X-rays*

11:10 - 11:30 **Stefan Klotz** (Univ. P. & M. Curie, France)  
(Invited) *Quasi-Elastic Neutron Scattering under Pressure and its Application to Liquid Water*

11:30 - 11:50 **Craig Bull** (Univ. of Edinburgh, UK)  
*Technical Developments for High-pressure Single-Crystal Diffraction at X-ray and Neutron Sources*

11:50 - 12:10 **Takanori Hattori** (JAEA, Japan)  
*New High-Pressure Neutron Beamline PLANET in J-PARC*

**12:10 - 12:20 TBA**  
*Closing Address*

**12:20 - 12:25 Closing**

**12:45 - 15:45 J-PARC tour**

**17:30 Arrive at Banquet Site (Omoide Roman-kan)**

## **Thursday, Sep. 27**

**9:00 Depart from Omoide Roman-kan**

**9:10 - 10:10 Fukuroda falls**

**12:00 (\*) Arrive at Mito station**

(\*) Actual arrival time depends on the traffic condition.