

**Program of the 4<sup>th</sup> International Symposium of Quantum Beam Science at  
Ibaraki University**

**(Co-sponsored : Academic Society of The Iron and Steel Institute of Japan)**

Oct.31 9:30-10:30 Registration

**Day 1**

10:00-10:10 Opening Remarks (Tsuyoshi Nishi, Ibaraki Univ.)

Chair: Tsuyoshi Nishi, Ibaraki Univ.

10:10-10:40 Keynote01 (Prof. Marius Stan, ANL)

Intelligent Materials and Process Design

10:40-11:10 Keynote02 (Ken Kurosaki, Kyoto Univ.)

Understanding the Physical and Chemical Properties of Fuel Debris, A Case  
Study for the Metal Phase

11:10-11:30 Keynote03 (Motohiro Kasuya, Tohoku Univ.)

Precise Characterization of Electric Double Layer of Electrode Using  
Electrochemical Surface Forces Apparatus

11:30-13:00 Luncheon meeting

Chair: Ken Kurosaki, Kyoto Univ.

13:00-13:30 Keynote04 (Prof. Yanzhong Pei, Tongji Univ.)

Phonon dispersion and scattering in thermoelectrics

13:30-13:50 OP01 (Takahiro Igarashi, JAEA)

3-D Modelling and Morphological Simulation of Intergranular Corrosion

13:50-14:10 OP02 (Masoud Moshtaghi, Ibaraki Univ.)

Quantum Beam Characterization of Dislocation Evolution in Cyclically  
Loaded Stainless Steel

14:10-14:30 OP03 (Tsuyoshi Nishi, Ibaraki Univ.)

XAFS study on AmO<sub>2</sub>, Am<sub>2</sub>O<sub>3</sub>, and (Am,U)O<sub>2-x</sub>

14:30-15:00 Coffee Break

Chair: Teruyuki Ikeda, Ibaraki Univ.

15:00-15:30 Keynote05 (Yuji Ohishi, Osaka Univ.)

Self-assembled Si/Silicide composites as high performance thermoelectric  
materials

15:30-15:50 OP04 (Alinejad Babak, Ibaraki Univ.)

Solid State Modification via Activated Reactive Consolidation for  
Fabrication of Intermetallic Thermoelectric Materials

15:50-16:10 OP05 (Kazuaki Iwasa, Ibaraki Univ.)

Dimensional Crossover of Magnetic Correlation and Chiral-lattice  
Criticality in  $Ce_3(Rh_{1-x}Ru_x)_4Sn_{13}$

16:10-16:30 OP06 (Kenji Ohoyama, Ibaraki Univ.)

Novel Usage of Neutrons for Materials Science White Neutron Holography

16:30-17:00 Coffee Break

Chair: Tsuyoshi Nishi, Ibaraki Univ.

17:00-17:30 Keynote06 (Hidemasa Yamano, JAEA)

Study on Eutectic Melting Behavior of Control Rod Materials in Severe  
Accidents of Sodium-cooled Fast Reactors

17:30-18:00 Free Discussion

18:00-21:00 Poster Session & Dinner & Reception

18:00-20:00 Poster Session with Dinner & Reception

20:00-21:00 Overall Discussion

Nov.1 9:00-10:30 Registration

Day 2

Chair: Yuji Ohishi, Osaka Univ.

9:30-10:00 Keynote07 (Dr. Hsin-jay Wu, NCTU)

Thermodynamic Approaches to High Performance Thermoelectric Materials with Carrier Type Transition

10:00-10:20 OP07 (Yasutaka Hashimoto, Ibaraki Univ.)

Fabrication of Porous Thermoelectric Materials and Their Applications

10:20-10:40 OP08 (Tomosuke Aono, Ibaraki Univ.)

Thermoelectric Properties and Electronic States in Quantum Confined Systems

10:40-11:00 OP09 (Akinori Hoshikawa, Ibaraki Univ.)

Crystal Structure of Clathrate Hydrate in Neutron Diffraction

11:00-11:30 Coffee Break

Chair: Tomosuke Aono, Ibaraki Univ.

11:30-12:00 Keynote08 (Dr. Yoshiki Takagiwa, NIMS)

Development of Thermoelectric Materials and Devices for Sensor Application

12:00-12:30 OP10 (Yazdan Zare, Ibaraki Univ.)

Elimination of Plastic Deformation of Copper in Cu-TSV Using Triple-lining Method

12:30-14:00 Luncheon meeting

Chair: Teruyuki Ikeda, Ibaraki Univ.

14:00-14:30 Keynote09 (Prof. Mihail Ionescu, ANSTO)

Research on Materials for Generation 4 Nuclear Reactors at ANSTO

14:30-15:00 Keynote10 (Prof. Shigeru Suzuki, Tohoku Univ.)

Vibration Energy Harvesting Using Bcc Functional Ferrous Alloys

15:00-15:20 Closing Remarks (Teruyuki Ikeda, Ibaraki Univ.)

Nov.2 College of Engineering Festival