

RIKEN SPring-8 Center Workshop on
"Elastic Properties of Iron in Extreme Conditions"

Tuesday, 25 February 2014
Hotel Wakamizu, Kobe/Takarazuka

07:00 - 08:00 *Breakfast*
08:00 - 8:20 *Coffee*

Introductions

08:30 - 08:40 10 A. Baron *Opening and Program Explanation*
08:40 - 08:55 15 *Self Introductions*

Break

Session I : Chair : E. Ohtani

09:00 - 09:30 30 H. Mao *The Constitutive Properties of Iron at the Earth ' s Core Pressure*
09:30 - 10:10 40 D. Antonangeli *Sound velocity measurements on bcc, fcc and hcp iron at high pressure and high temperature*
10:10 - 10:40 30 G. Helffrich *Ground Truth: Seismological Properties of the Core*

Coffee Break

Session II : Chair : H. Mao

11:00 - 11:30 30 E. Ohtani *Sound velocity measurements of iron-light element alloys: A challenge to the core conditions*
11:30 - 11:50 20 K. Hirose *Measurements of core properties at high pressure*
11:50 - 12:20 30 Y. Fei *Experimental constraints on the composition of the Earth ' s core from multiple datasets derived from static and dynamic compression experiments*

12:20 - 13:50 *Lunch (outside)*

Session III : Chair : G. Shen

13:50 - 14:20 30 J. Lin *Sound Velocity and Anisotropy of Fe and Fe-Si Alloys in the Earth ' s Core*
14:20 - 14:50 30 C. Murphy *Complementary Nuclear Inelastic and Inelastic X-ray Scattering Investigations of Hexagonal Close-Packed Iron*

Break

14:55 - 15:25 30 A. Chumakov *Possible problems in the determination of the mean sound velocity from the density of vibrational states.*
15:25 - 15:55 30 A. Alatas *Inelastic X-ray Spectrometer at Advanced Photon Source for High Pressure Experiments*

Coffee Break

Session IV : Chair : A. Chumakov

16:15 - 16:50 35 A. Bosak *Anisotropy. Texture. Averaging.*
16:50 - 17:10 20 A. Baron *IXS for HP/HT DACs at SPring-8: Status and Prospects*
17:10 - 17:30 20 H. Fukui *Toward single-crystal elasticity on highpressure iron*

19:00 - 20:30 *Dinner*
20:30 - *Informal Discussion, Onsen visit,...*

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Wednesday, 26 February 2014 (continued)
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07:00 - 08:00 Breakfast
08:00 - 8:20 Coffee

Session V : Chair : **S. Tsutsui**

08:30 - 08:50 20 S. Kamada *VP and EOS of Fe₃S*
08:50 - 09:10 20 Y. Shibazaki *Sound velocity-density relation for dhcp-FeH using inelastic X-ray scattering and in situ X-ray diffraction methods*
09:10 - 09:30 20 T. Sakamaki *Sound Velocity of Iron up to 160 Gigapascals and 3000 Kelvin*

Coffee Break

Session VI : Chair : **A. Bosak**

09:50 - 10:20 30 G. Shen *Laser Heated Diamond Anvil Cell Experiments Using Synchrotron Radiation*
10:20 - 10:50 30 S. Merkel *Extracting of single crystal properties from measurements on polycrystals*
Break
10:55 - 11:25 30 K. Glazyrin *Pressure induced electronic topological transition in hcp iron*
11:25 - 11:55 30 T. Sakai *Equations of state of iron and Fe_{0.9}Ni_{0.1} alloy*

11:55 - 13:15 Lunch (outside)

Session VII : Chair : **Y. Fei**

13:15 - 13:45 30 H. Huang *The sound velocity for shocked Fe-FeS mixture up to 211 GPa*
13:45 - 14:15 30 Y. Bi *Introduction for a dedicated high pressure beam-line in BAPS and the melting curve of iron under core 's conditions**

Break

Session VIII : Chair : **H. Fukui**

14:20 - 14:50 30 S. Hosokawa *Inelastic x-ray scattering measurements of liquid iron*
14:50 - 15:10 30 T. Komabayashi *Velocity-density relation for liquid indium to 6.7 GPa via inelastic x-ray scattering*
15:10 - 15:30 20 S. Imada *Sound velocity measurements of liquid Fe-Ni-S alloy at high pressure and temperature via inelastic X-ray scattering*
15:30 - 15:50 20 Y. Nakajima *High resolution IXS measurements of (Fe,Ni)₃S alloy at high pressure and high temperature*

Coffee Break

Session IX : Chair : **K. Hirose**

16:05 - 16:45 40 L. Vocadlo *Ab initio calculations on the elastic properties of iron and iron alloys under inner-core conditions*
16:45 - 17:15 30 R. Cohen *Properties of Iron under Core Conditions*
Break
17:20 - 17:50 30 K. Umemoto *Density of liquid iron alloys at outer core conditions by first principles*
17:50 - 18:20 30 H. Ichikawa *The P-V-T equation of state and transport properties of liquid Fe-O alloys by ab-initio molecular dynamics simulations*

Closing Comments

19:00 - 20:30 Dinner
20:30 - Informal Discussion, Onsen visit,...