

The 4th SKLSHM-KYOKUGEN Workshop on Materials at high pressure

单位: *State Key Lab of Superhard Materials, Jilin University, China*

Center for Science and Technology under Extreme Conditions, Osaka University, Japan

Oral:

Chair: Prof. Bingbing Liu

8:30-8:45 **Welcome** Prof. Tian Cui

1. Prof. Katsuya SHIMIZU, **Osaka University, “Mbar Chemistry”**

8:45-9:10

2. Prof. Tse, John S, University of Saskatchewan, **Chemical reactions under Earth mantle conditions**

9:10-9:35

3. Dr. Xiaoli Huang, Jilin University, **Hydrogen and hydrogen-rich compounds under high pressure**

9:35-10:00

Tea Break 10:00-10:15

Chair: Prof. Bertil Sundqvist

4. Prof. Mingguang Yao, Jilin University, **Transformation of 1D nanostructures under high pressure**

10:15-10:40

5. Dr. Yanchao Wang, Jilin University, **CALYPSO method and its applications at high pressure**

10:40-11:05

6. A. Prof. Mari EINAGA, Osaka University, **“Crystal Structure in Sulfur Hydride under High Pressure”**

11:05-11:30

Chair: Prof. Katsuya SHIMIZU

7. Prof. Quan Li, Jilin University, **Structural Design and Mechanical Properties of Superhard Materials**

13:30-13:55

8. A. Prof. NAKANISHI, Osaka University, **“First-principles study on phosphorus under high-pressure: crystal structure, superconductivity, and anharmonicity”**

13:55-14:20

9. Prof. Yonghao Han, Jilin University, **Electrical transport properties of functional materials under high pressure**

14:20-14:45

10. Dr. Tao Qiang, Jilin University, **Studying the hardness of molybdenum borides synthesized by high pressure and high temperature**

14:45-15:10

11. A. Prof. Yongtao Zou, Jilin University, **Ultrasonic Study of Materials at High Pressure**

15:10-15:35

Tea break and poster section

Poster award committee: **Mingguang Yao**; Katsuya SHIMIZU; Dr. Nakanishi; Bertil Sundqvist; Quan Li; Yongtao Zou. (**tentative**)

15:35-17:00

Poster award and closing Prof. Mingguang Yao

17:00-17:30

Poster:

1. **Resistance measurement of metal hydride under high pressure**

Dezhong MENG

2. **Calibration of Temperature for a laser-heated diamond anvil cell under pressure**

Thomas SABAGANGA

3. **First-principles search for high-pressure phases of O-H compounds**
Yuki SHUTO
4. **Development of ultra-high pressure's technique by Toroidal Diamond Anvil Cell**
Soichi KIDOKORO
5. **Superconductivity of K-doped picene**
Masatoshi HOSHI
6. **High pressure NMR measurement for study of superconducting sulfur hydride**
Akiyoshi MASUDA
7. **High pressure study on Eu compounds**
Wataru MATSUDA
8. **Polarized Raman Study of Aligned Multiwalled Carbon Nanotubes Arrays under High Pressure**
Xigui Yang, Mingguang Yao, Bingbing Liu
9. **Structural transitions and metallization of monoclinic vanadium dioxide under high pressure**
Huafang Zhang, Quanjun Li, Benyuan Cheng, Zhou Guan, Ran Liu, Bo Liu, Zhenxian Liu, Tian Cui, and Bingbing Liu
10. **High Energetic Polymeric Nitrogen Stabilized in the Confinement of Boron Nitride Nanotube at Ambient Conditions**
Shijie Liu, Mingguang Yao, Fengxian Ma, Bingbing Liu*
11. **CALYPSO : A Method for Structure Prediction**
Y. Wang, J. Lv, L. Zhu, H. Wang, Q. Li, L. Zhang, and Y. Ma*
12. **Tellurium Hydrides at High Pressures: High-temperature Superconductors**
X.Zhong, H. Wang, J. Zhang, H. Liu, S. Zhang, H. Song, G. Yang*, L. Zhang† and Y. Ma‡
13. **Gold as a 6p-Element in Dense Lithium Aurides**
Guochun Yang, Yanchao Wang, and Yanming Ma*
14. **ATLAS: A real-space finite-difference implementation of orbital-free density functional theory**
Xuecheng Shao, WenhuiMi, Yanchao Wang and Yanming Ma*
15. **High-Pressure-Induced Planarity of the Molecular Arrangement in Maleic Anhydride**
Yuxiang Dai,† Kai Wang,*,† Xiaodong Li,‡ and Bo Zou,*,†
16. **High-Pressure Structural and Optical Properties of Organometal Halide Perovskites**
Lingrui Wang, Kai Wang, Bo Zou*

17. **Robust honeycomb boron sandwiching triangular manganese layer in manganese diboride**
Shuailing Ma, Kuo Bao, Qiang Tao, Pinwen Zhu, Tian Cui*
18. **The process of pressure-induced molecular dissociation in element Selenium and Tellurium**
Xin Li, Xiaoli Huang, Mingkun Liu, Yangping Huang, Gang Wu, Fangfei Li, Qiang Zhou, Bingbing Liu, and Tian Cui*
19. **Ab initio study on the heavy group-V hydrides at high pressures**
Yanbin Ma, Defang Duan, Hongyu Yu, Ziji Shao, Hui Xie and Tian Cui*
20. **Transition Metal Tantalum Borides and Vanadium Borides: an ab initio Study**
Shuli Wei, Da Li, and Tian Cui*
21. **High Pressure Study of Dihydrogen Bonds in B-N-H Compounds**
Guangyu Qi, Kai Wang, and Bo Zou*
22. **Using finite element analysis to correct the measurement of the sample temperature in DAC**
Donghui Yue (岳冬□)
23. **Visible light response, electrical transport, and amorphization in compressed organolead iodine perovskites**
Tianji Ou (欧天吉)
24. **Syntheses, Characterization, and High Pressure Studies of Inorganic Hydrogen-Bonding Materials.Part I: AlOOH Nanosheets**
Xudong Zhou, Hui Tian, Yue Wang, Dongxue He, Jian Zhang* and Yanmei Ma
25. **Syntheses, Characterization, and High Pressure Studies of Inorganic Hydrogen-Bonding Materials.Part II: Hyperbranched GaOOH Nanoarchitectures**
Yue Wang, Xudong Zhou, Hui Tian, Dongxue He, Jian Zhang* and Yanmei Ma
26. **Syntheses, Characterization, and High Pressure Studies of Inorganic Hydrogen-Bonding Materials.Part III: Ultrathin InOOH Nanowires**
Dongxue He, Xudong Zhou, Hui Tian, Yue Wang, Jian Zhang* and Yanmei Ma
27. **Syntheses, Characterization, and High Pressure Studies of Inorganic Hydrogen-Bonding Materials.Part IV: ZnOHF**
Hui Tian, Xudong Zhou, Yue Wang, Dongxue He, Jian Zhang* and Yanmei Ma