Poster

Phase diagram determination at high-pressure and low-temperature conditions

Arthur Haozhe Liu[1], Lisa Luhong-Wang Liu[2]

[1]HPSTAR, Beijing, 100094, China, [2]SHARPS, Shanghai, 201203, China

Haozhe.liu@hpstar.ac.cn, lisaliu@sharps.ac.cn

The pressure induced phase transitions and phase diagram are long term topics in condense matter physics. Many interesting behaviors, such as high Tc superconductivity under high pressure conditions, were reported in last decade, but the responsible structures are not well studied at correct P-T conditions and mechanisms are far away from fully understood. In this presentation, several selected systems were in situ studied under high pressure using synchrotron x-ray diffraction (XRD) techniques in diamond anvil cell at ambient temperature and low temperature conditions, will be introduced. Selected cases, including metal hydrides, and oxides (La-Ni-O and Ba-K-Bi-O systems), would be discussed based on the recent XRD results and the first principle calculations, and the updated phase diagrams at low-temperature and high-pressure domains.

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Acknowledgements: The authors acknowledge the financial support from Shanghai Key Laboratory of Material Frontiers Research in Extreme Environments, China (No. 22dz2260800) and Shanghai Science and Technology Committee, China (No. 22JC1410300).