

Experimental Simulations of Planetary Interiors



Professor Bin CHEN
(陳斌教授)
University of Hawaii at Manoa

25 November 2022



11:30 a.m.



**Conference Room, 3/F,
Mong Man Wai Building**



[Zoom Link](#) (Mixed-mode)

ID: 992 4969 9833 Passcode: 983837

Geoscientists have long recognized the importance of generating extreme pressures and temperatures to reproduce in laboratory settings the conditions present in planetary interiors. Such experiments provide the basis for understanding the nature and mechanisms of dynamic processes taking place within deep interiors of Earth and other planetary bodies. Since early 1960s, mineral physics has rapidly emerged and been recognized as an important interdisciplinary field in Earth and planetary sciences, providing an essential link between laboratory measurements of the physical and chemical properties of minerals and rocks under extreme conditions and the geophysical and geochemical observations of planetary interiors. Advanced high-pressure and synchrotron X-ray techniques have permitted experimental mineral physicists to probe the micro-scale properties of planetary materials that govern macro-scale behaviors of the complex planetary systems. Here, I will present the past, present, and future of the field, followed by recent research on volatiles, such as carbon and hydrogen, and their cycling in planetary interiors. Deep volatiles are considered to play essential roles in the thermochemical evaluation of habitable planets or moons.



Enquires: 3943 5494 eesc@cuhk.edu.hk