



Contribution ID: 262

Type: **Poster**

M1Po2D-02: Mechanical properties measuring of low-dimensional samples at cryogenic

Monday 10 July 2023 14:00 (2 hours)

Nowadays, low-dimension materials have been widely used in microelectronics, biomedical engineering and aerospace technology, so it is necessary to develop small-scale devices to understand and predict the mechanical performance at cryogenic. In this study, a mechanical properties measurement for low-dimensional samples at cryogenic were designed and established. Three kinds of low-dimensional samples, such as stainless steel and SIC fibers, with different diameter were tested in this device at 77 K, 90 K and 300 K. The stress-strain behaviors of these low-dimensional samples are well described and compared to the standard size samples, which illustrated the specimen size effect and the cryogenic properties. Subsequently, this work provided more mechanical properties of low-dimension samples and insights into the size effect exploration at cryogenic.

Author: Ms QI, Haoying (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences)

Co-authors: ZHANG, Hengcheng (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences); HAN, Yemao (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences); ZHAO, Yuchen (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences)

Presenter: Ms QI, Haoying (Technical Institute of Physics and Chemistry, Chinese Academy of Sciences)

Session Classification: M1Po2D: Cryogenic Materials Testing and Methods I