

Pressure calibration for two-stage 6–8 type large-volume multi-anvil high pressure apparatus

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Abstract: A new two stage 6–8 type large-volume multi-anvil high pressure apparatus was reported in this paper. This system is directly placed in the hinge type cubic press, and the 10/4 (octahedral edge-length/anvil truncation edge-length, in millimeter) type two stage pressure apparatus is used. Phase transitions of ZnTe I–II 5 GPa, ZnTe II–III 8.9~9.5 GPa, ZnTe Semiconductor/metal 11.5~13 GPa, ZnS Semiconductor/metal 15.6 GPa, and GaAs Semiconductor/metal 18.8 GPa were used in this research. Result shows that the practical pressure in the cell can reach to 19 GPa with the corresponding oil pressure 18 Mpa, and the sample size can reach 2 mm³.

Keywords: 6–8 type apparatus; pressure calibration; phase transition