

SMP056-P01

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Pressure-induced metallization in several semiconductor and its applications to pressure fixed point for multi-anvil app

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The pressure of pressure-induced metallization (electrical resistance change) in GaP, GaAs, ZnS and ZnTe at room temperature was determined by detecting electrical resistance and in situ X-ray diffraction experiment system in order to use as a pressure fixed point for multi-anvil apparatus, its pressure were decided from the unit cell volume of pressure standard materials (Au and NaCl) and their equation of state. As an example, metallization pressure determined by used NaCl Decker scale were listed as follows: for GaP 22.9 GPa, for GaAs 18.6 GPa, for ZnS 16.2 GPa, ZnTe 12.1 GPa and 10.0 GPa.

Keywords: pressure fixed point, pressure-induced metallization