

摻雜Na與PbI₂元素之PbTe材料熱電性質

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摘要

In this study, the PbTe samples doped with PbI₂ or Na were prepared using powder metallurgical techniques. The preparation procedures were optimized by the experimental results with respect to powder particle size, compaction pressure, and influence of sintering parameters. The power factors profiles of the PbTe samples with different dopant concentration at about 100°C to 250°C were calculated from the measured values of the Seebeck coefficient and the electrical of the samples. The research interpret to the thermoelectric properties had been transformed by means of the different dopant concentration indeed. The power factor of the N-type samples were better than the P-type samples. For optimization of the power factors presented in the measurements temperature range, the optimized dopant concentration of PbI₂ is 0.05 at% and of Na is 0.50 at% respectively.

關鍵字：powder metallurgical techniques; PbTe; power factor