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**Thermoelectric Properties of Boron-doped CoSi** BO YU, HUI WANG, Boston College, HONGLI GAO, Zhejiang University, WEISHU LIU, Boston College, XINBING ZHAO, Zhejiang University, GANG CHEN, MIT, ZHIFENG REN, Boston College — Engineering in density of states  $D(E)$  has been found effective in improving the transport properties of thermoelectric materials. As one example, intermetallic CoSi, when doped with boron or other suitable elements, exhibits a good combination of high electrical conductivity ( $\sigma$ ) and Seebeck coefficients ( $S$ ) due to possible sharp structures in  $D(E)$  near Fermi level. However, despite of its high power factor ( $S^2\sigma$ ), the high thermal conductivity ( $\kappa$ ) becomes the obstacle for the performance. Here, we present that mechanical alloying and hot press which had been proved successful in many thermoelectric materials, could also reduce the thermal conductivity of boron doped CoSi while keeping its high power factor.

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