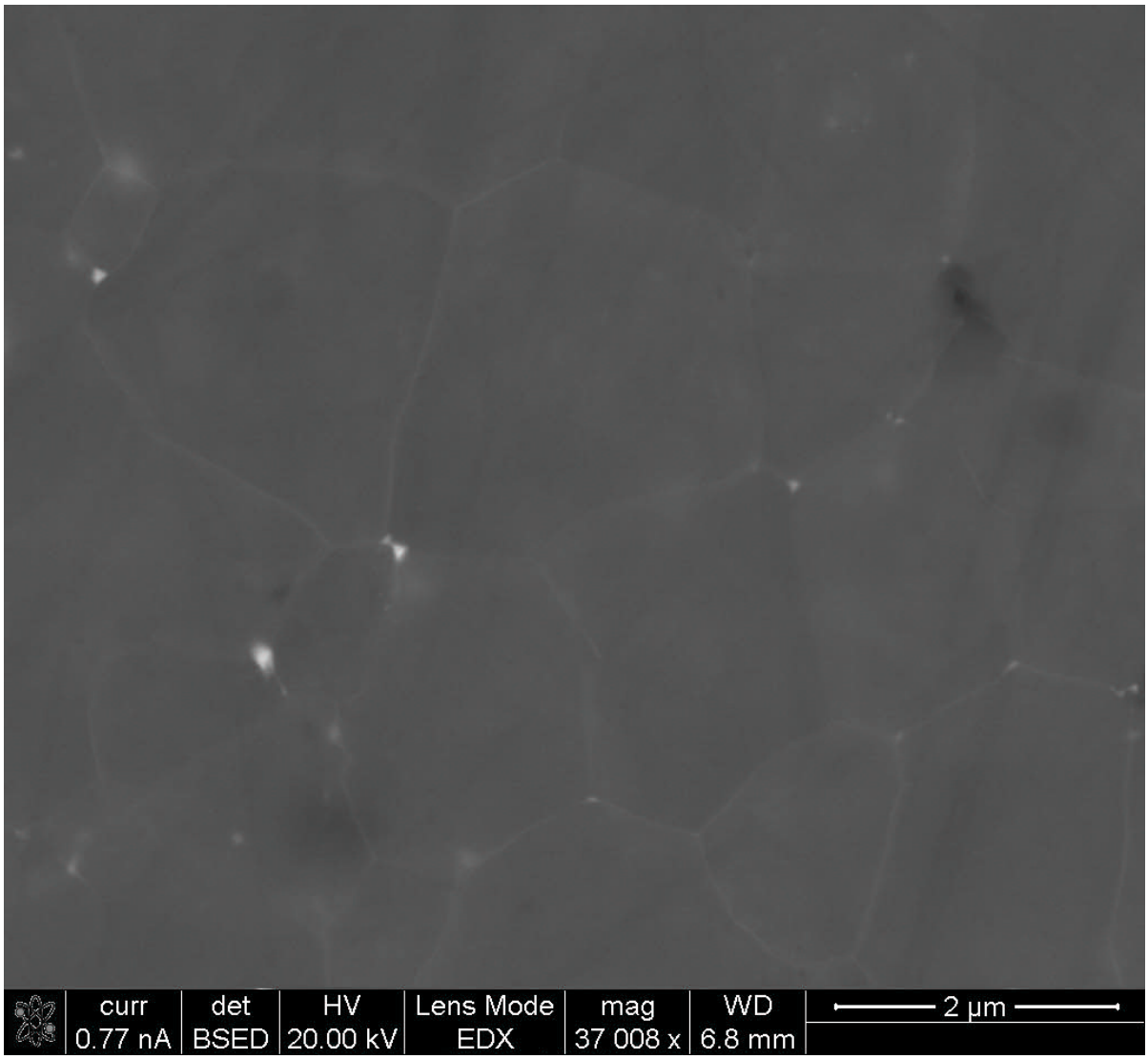

Figure S1: Backscatter SEM image of 1.3% Bi doped sample. The bright white areas at the grain boundaries represent Bi which is in excess of the solubility limit.

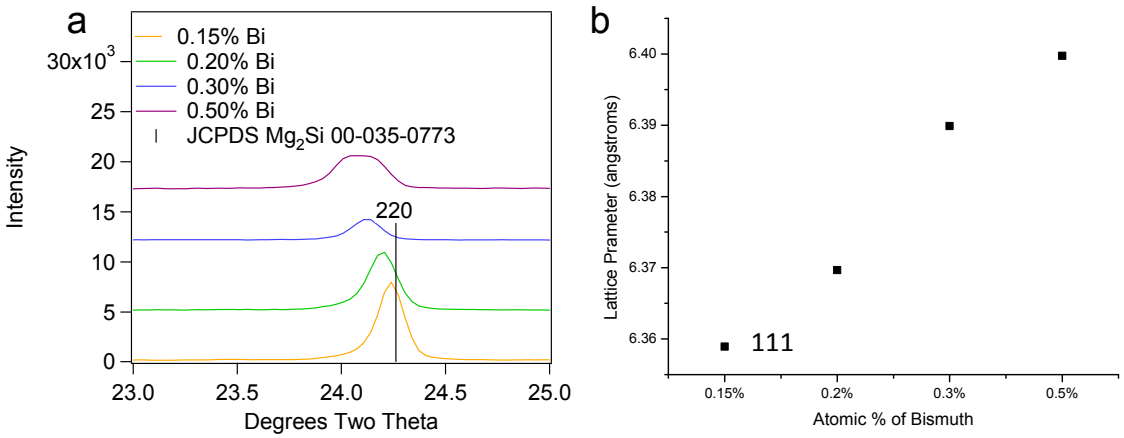

Figure S2 a) Powder X-ray diffraction of sintered Bi doped Mg_2Si. With increasing Bi doping, the 111 Mg_2Si peak shifts to lower angles b) A plot of lattice parameter as a function of Bi doping. As the peaks shift to lower angle, the lattice parameter increases due to the incorporation of the larger Bi atom.

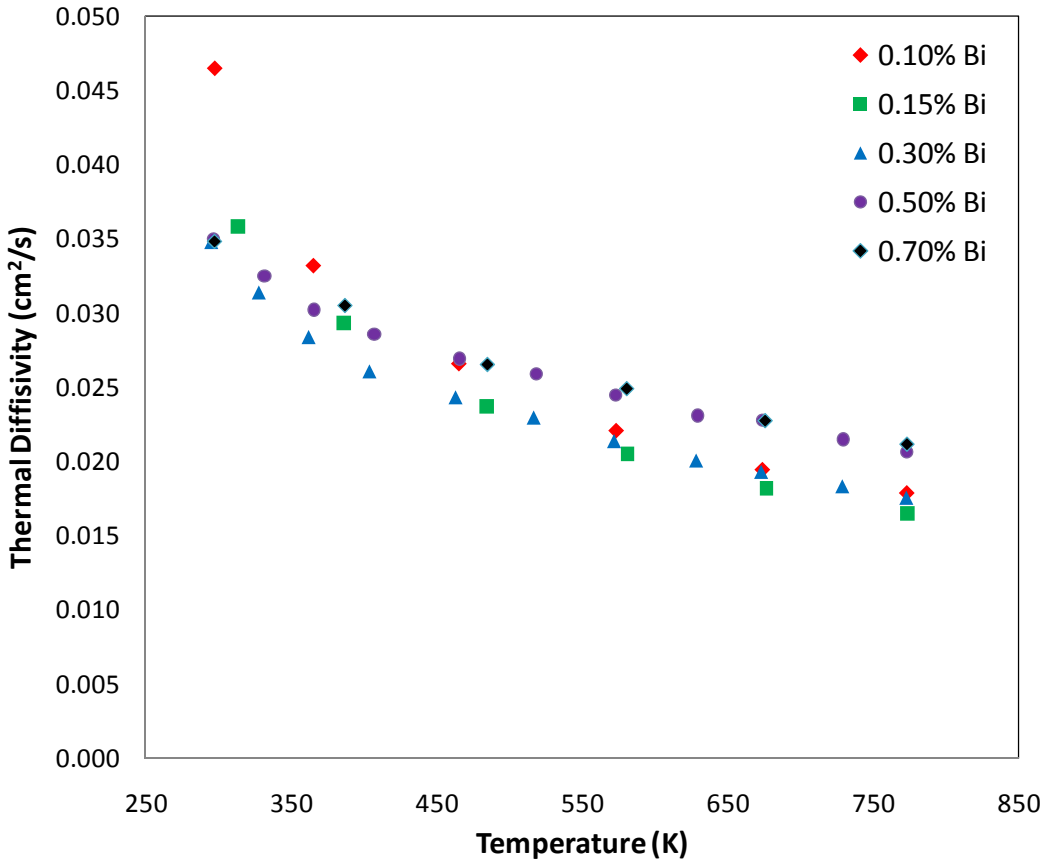

Figure S3. The measured thermal diffusivity of various Bi doped Mg_2Si samples as a function of temperature.

Table S1: Room temperature geometric density of Mg_2Si samples.

Atomic % Bi	Density (g/cm^3)
0.1	2.028
0.3	1.983
0.5	2.057
0.7	2.083