Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics
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ELECTRONIC SUPPLEMENTARY INFORMATION

Improving the thermoelectric properties of half-Heusler TiNiSn through inclusion of a secondary full-Heusler phase: Microwave preparation and Spark Plasma Sintering of $TiNi_{1+x}Sn$

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Analytical conditions of microprobe analysis

Ti Kα, Ni Kα, and Sn Lα X-ray intensities were measured using LPET, LLIF, and LPET analyzing crystals. X-ray intensity maps were collected using 15 keV accelerating voltage with 100 nA of beam current. An area of 125×125 μm was traversed using continuous stage translation to create a 256×256 pixel map with a dwell time of 125 ms per pixel. Quantitative analysis was conducted at 15 keV accelerating voltage and 10 nA beam current. Ti Kα, Ni Kα, and Sn Lα intensities were measured on-peak for 20 seconds and 10 seconds off-peak either side of the peak to create a linear background interpolation.

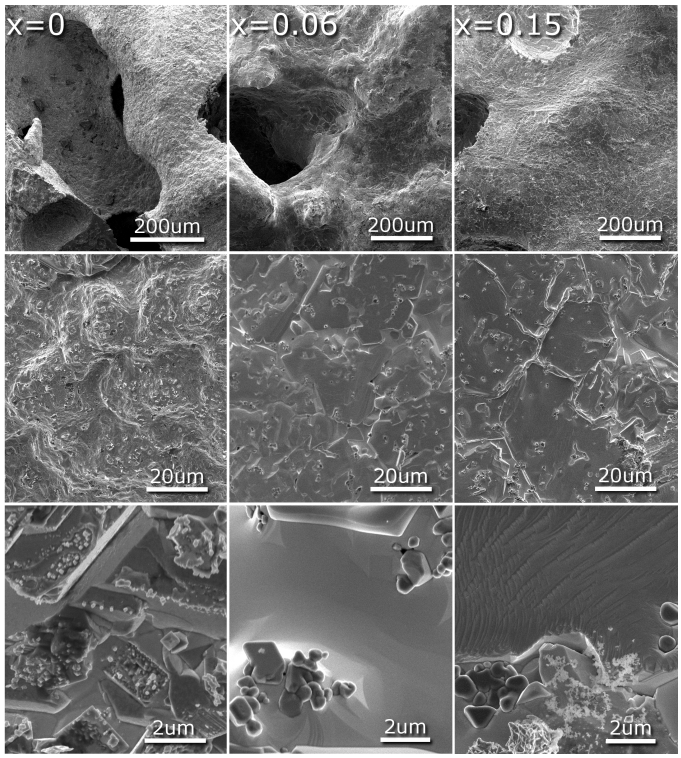

Figure S1. SEM images of as-prepared TiNiSn, $TiNi_{1.06}Sn$, and $TiNi_{1.15}Sn$

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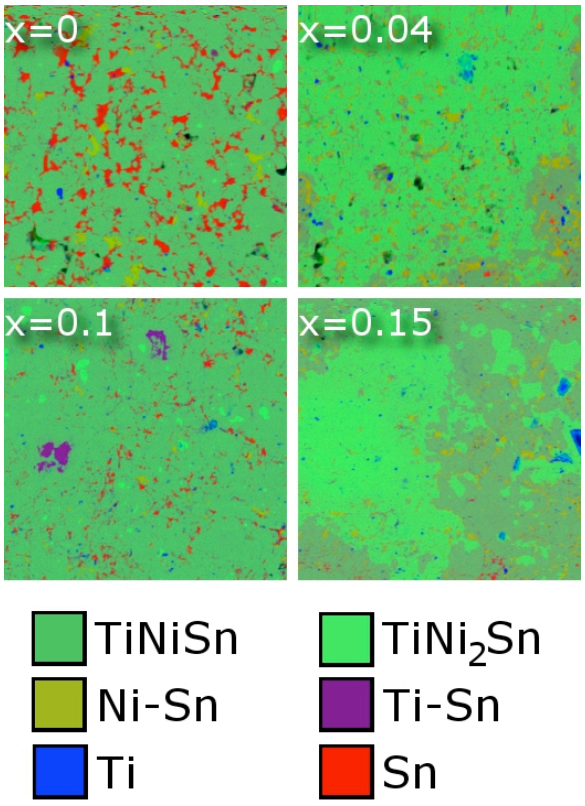

Figure S2. Microprobe images of $TiNi_{1+x}Sn$ with x = 0, 0.04, 0.1, and 0.15.