

Correction to “High-Throughput Measurement of the Seebeck Coefficient and the Electrical Conductivity of Lithographically Patterned Polycrystalline PbTe Nanowires”

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The sign of the Seebeck coefficients reported in Table 1 and elsewhere in our paper are incorrect. These values were calculated in accordance with the definition for measurement of the Seebeck coefficient:

$$S = \frac{\Delta V_s}{\Delta T} = \frac{V_{\text{hot}} - V_{\text{cold}}}{T_{\text{hot}} - T_{\text{cold}}} \quad (1)$$

Where ΔV_s is the Seebeck voltage and ΔT is the temperature gradient imposed upon the nanowires. Since S is defined by $\varepsilon_x = S(\partial T / \partial x)$,¹ eq 1 is incorrect, and the Seebeck coefficient is correctly defined as^{1,2}

$$S = \frac{-\Delta V_s}{\Delta T} = \frac{-(V_{\text{hot}} - V_{\text{cold}})}{T_{\text{hot}} - T_{\text{cold}}} \quad (2)$$

By this definition, the S values reported in Table 1, Figures 3, and 4a,b, and elsewhere in the text of the paper are positive, not negative. This means that the majority of carriers in our PbTe nanowires are holes, not electrons, as erroneously stated on p. 3008. To be clear, our experimental measurements of S for arrays of PbTe nanowires yield a ΔV_s with a positive polarity on the cold side of the nanowire array.

Because the effective mass of holes in PbTe is higher than that of electrons ($1.0m_0$ versus $0.25m_0$ ^{3,4}), our reported values of the hole concentration are also modified by the inversion in sign of S . Specifically, the range of hole concentrations was $0.12 (\pm 0.02) \times 10^{19} \text{ cm}^{-3}$ to $3.0 (\pm 0.5) \times 10^{19} \text{ cm}^{-3}$.

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