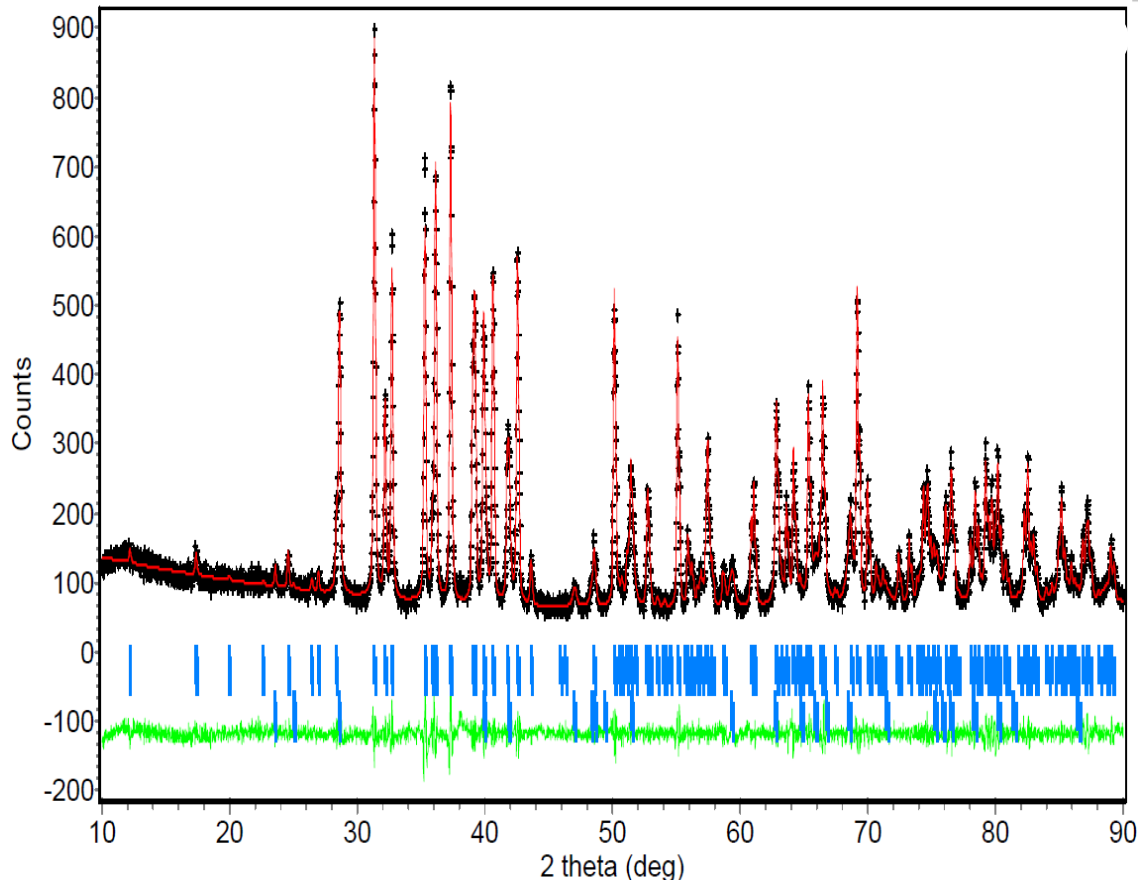
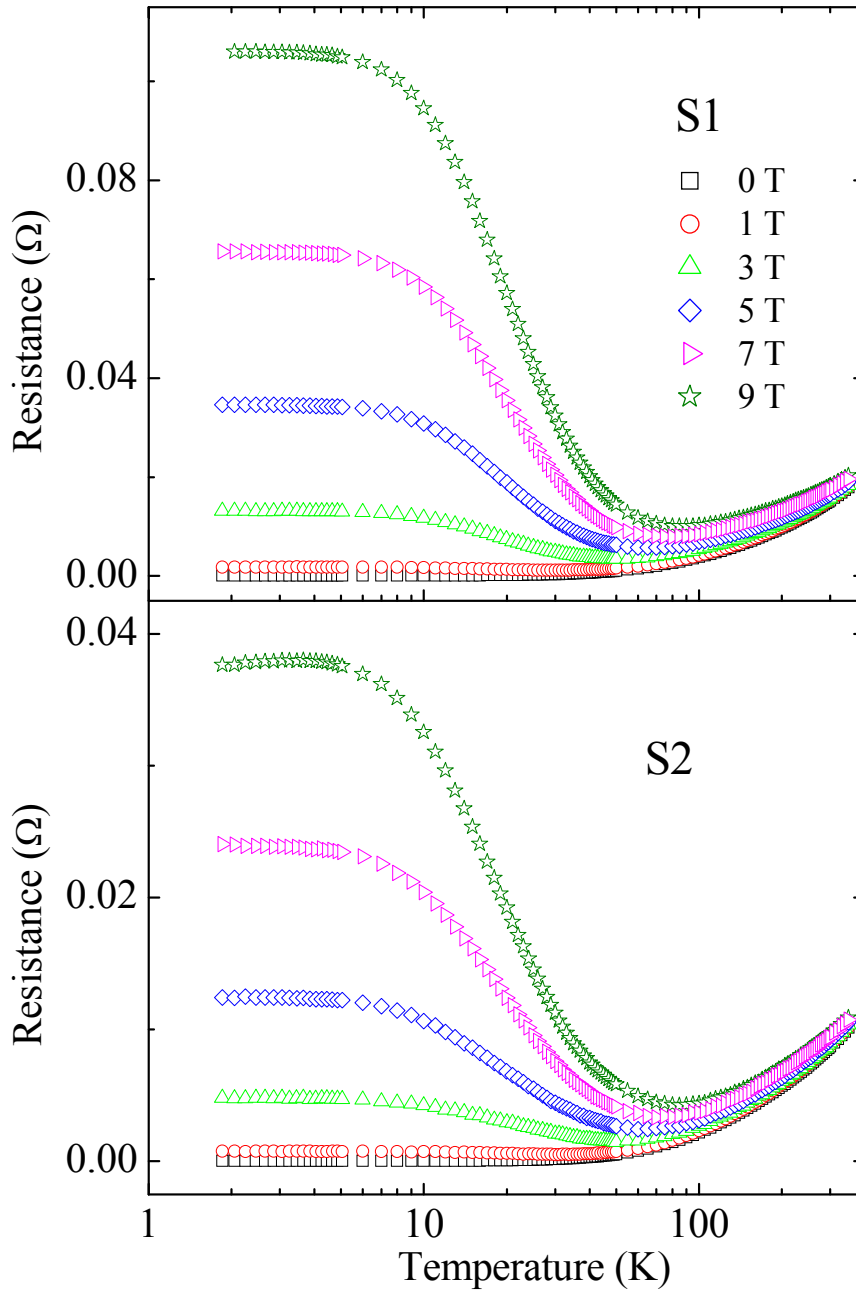


## Supplementary materials for “Anisotropic giant magnetoresistance in NbSb<sub>2</sub>”

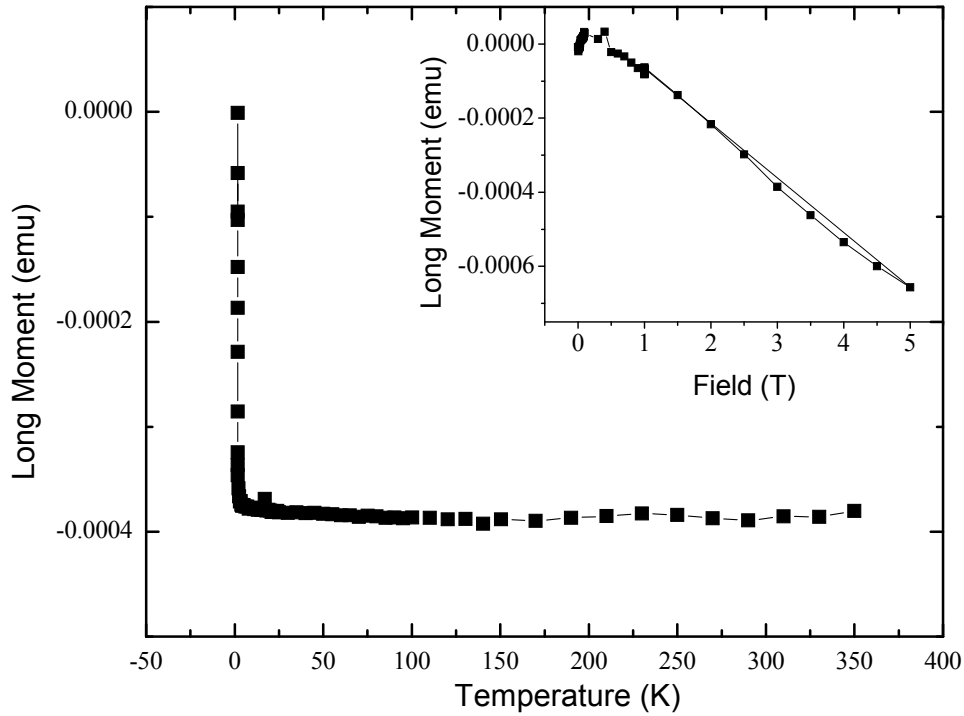
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**Supplementary Figure 1 | The powder XRD pattern and the refinement results for flux grown NbSb<sub>2</sub> crystals**, which were fitted by RIETICA software.[1] The data were shown by (+) , and the fit is given by the red solid line. The difference curve (the green solid line) is offset. The blue segments in the first row denotes the observed diffraction peaks from NbSb<sub>2</sub> and the segments in the second row denotes the diffraction peaks from a small amount of residual Sb flux on the surface of the crystals. The residual Sb can be removed by polishing the crystal easily.



**Supplementary Figure 2 | The temperature dependence of the resistivity for two NbSb<sub>2</sub> crystals from different batches.** Although the magnetoresistance of Sample S2 is little smaller than the value of Sample S1, both crystals shows very large magnetoresistance and the metal-semiconductor-like transition induced by magnetic field.



**Supplementary Figure 3 | The temperature dependence of the magnetization for NbSb<sub>2</sub> crystals**, which were measured in a commercial Quantum Design MPMS-5 system with 100 Oe field parallel to the *b*-axis. The inset shows the field dependence of the magnetization in 1.8 K. The material shows a weak diamagnetic behavior in whole temperature range and no curves in field-dependent magnetization, which rules out the curvature mechanism in Hall resistivity of our crystal induced by anomalous Hall effect.