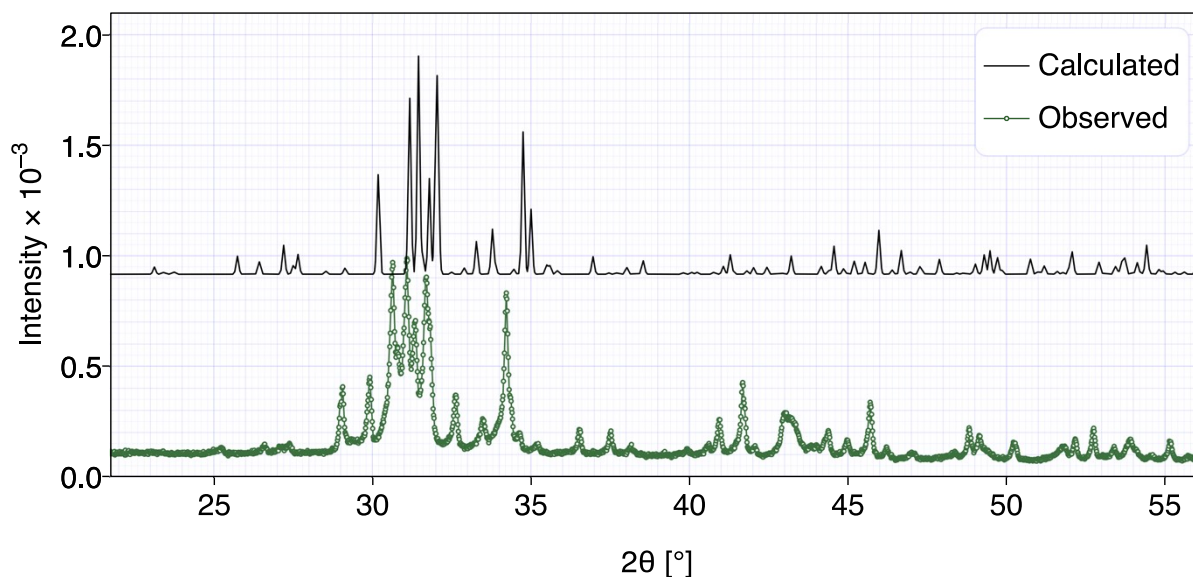


### Supplemental Information



**Figure S1:** X-ray diffraction patterns comparing the pattern calculated from the crystallographic information from Baranets et al. and the pattern obtained from a sample made with the nominal stoichiometry  $\text{Yb}_{10.75}\text{Mn}_{0.48}\text{Sb}_9$ . Here we can see that the patterns do not match very well and there are additional peaks in the experimental sample that are not present in the calculated pattern. For this reason all thermoelectric property measurements correspond to a sample made with the experimental stoichiometry of Yb:Mn:Sb= 10.5:1.125:9. With this stoichiometry we received an XRD pattern that matched the expected pattern quite closely (see Fig. 2 in the main text).