Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.


**Supporting Information**

# $EuSn_2As_2$: An Exfoliatable Magnetic Layered Zintl-Klemm Phase

M. Q. Arguilla, N. D. Cultrara, Z. J. Baum, S. Jiang, R. D. Ross and J. E. Goldberger*

[1]Department of Chemistry and Biochemistry, The Ohio State University, Columbus, Ohio 43210-1340, United States

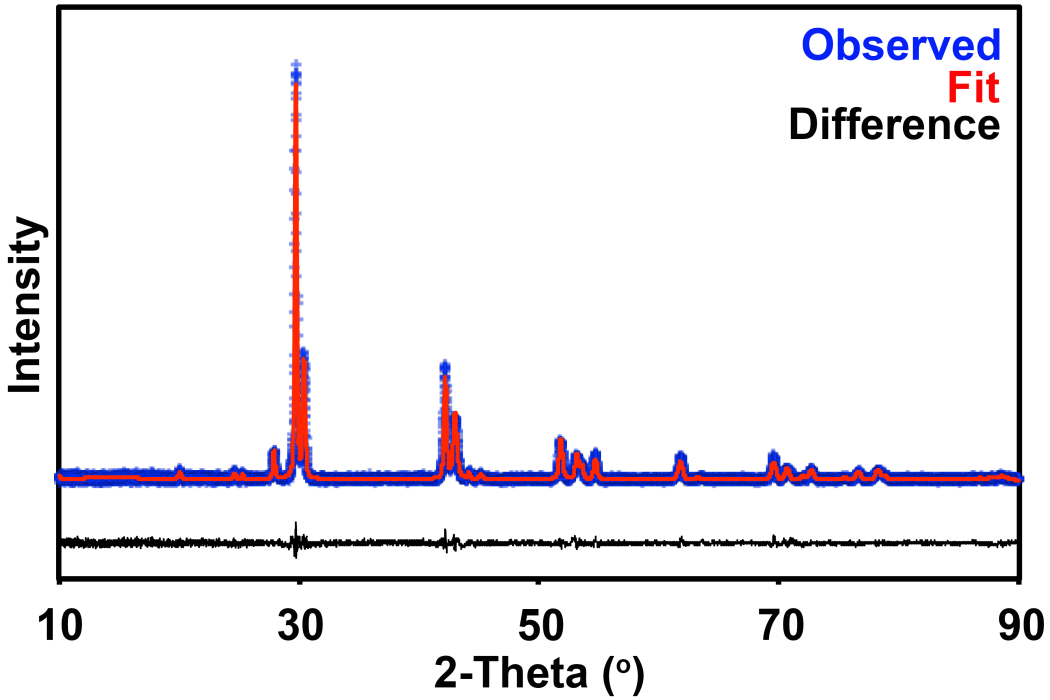


**Figure S1.** Powder XRD Rietveld refinement results for $EuSn_2As_2$ using TOPAS.

**Table S1.** Selected bond lengths based on the refined $EuSn_2As_2$ structure.

| | **Bond Length (Å)** |
|---|---|
| Sn-As (3x) | 2.7761(3) |
| Eu-As (6x) | 3.1019(4) |

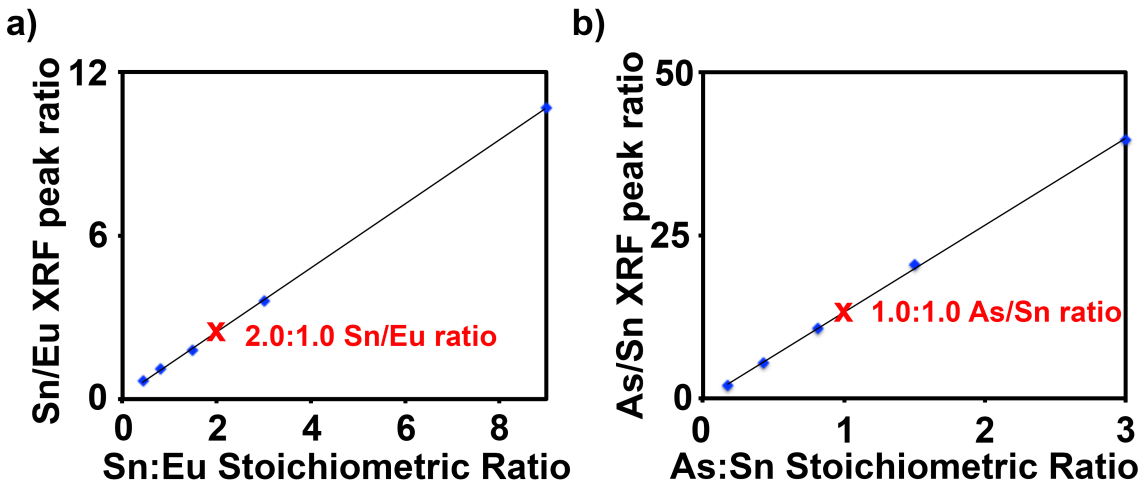


**Figure S2.** X-Ray Fluorescence verification of the Eu:Sn and Sn:As stoichiometry in $EuSn_2As_2$. Different ratios of $Eu_2O_3$ and elemental Sn (Eu:Sn) and elemental Sn and As (Sn:As) were used to prepare a standard calibration curve.

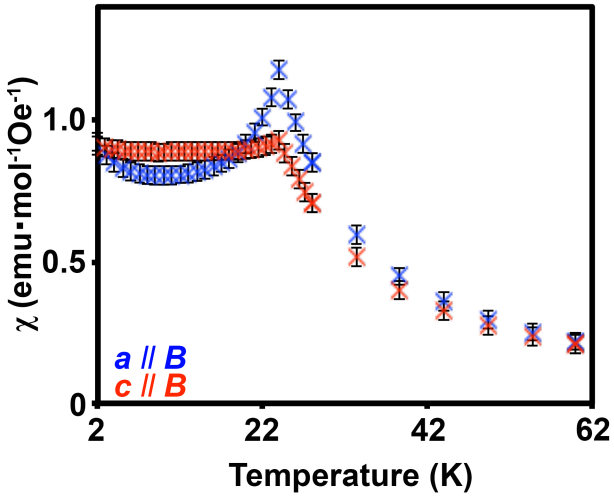


**Figure S3.** Field-cooled temperature-dependent magnetic susceptibility of $EuSn_2As_2$ with the *a*/*b*-axis (blue) and *c*-axis (red) parallel to the field showing the standard deviation.

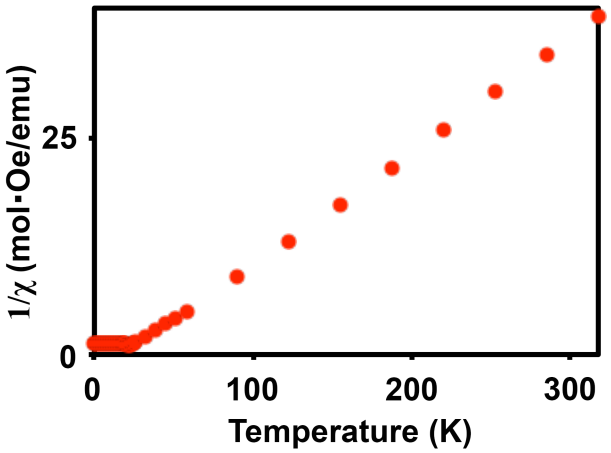


**Figure S4.** Curie-Weiss fit corresponding to the ZFC inverse susceptibility of the $EuSn_2As_2$ crystal with its *c*-axis oriented parallel to the applied 0.01 T field.

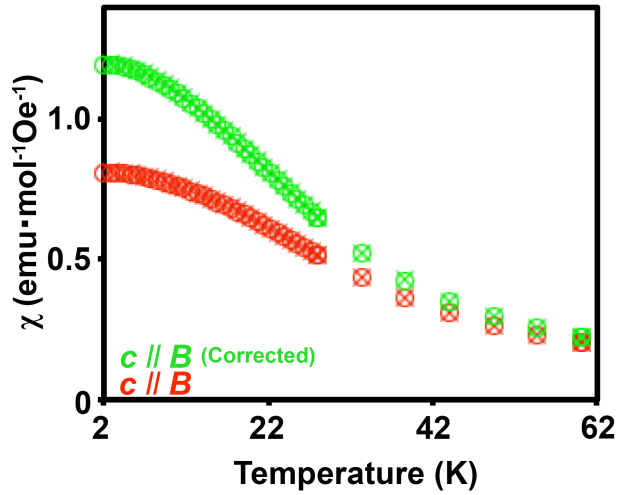


**Figure S5.** Temperature-dependent magnetic susceptibility of $EuSn_2As_2$ with the c-axis parallel to the applied field of 5T.

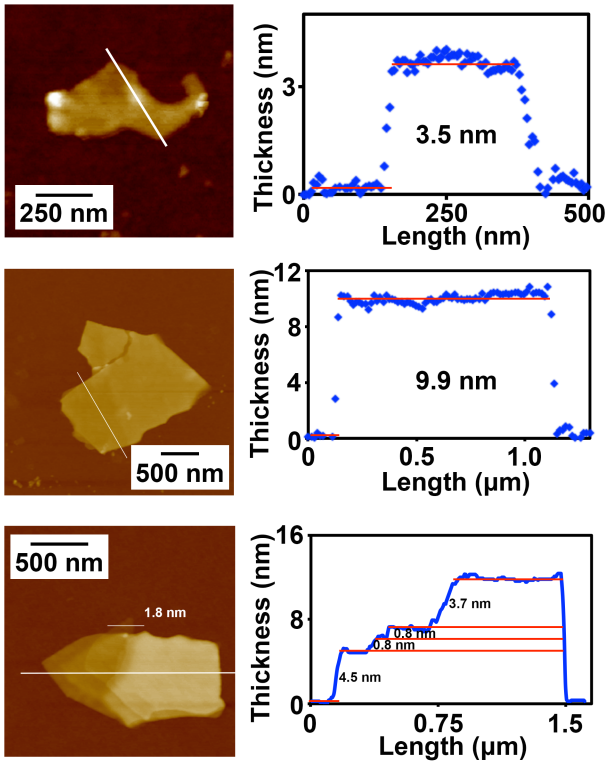


**Figure S6.** AFM images and height profiles of mechanically-exfoliated $EuSn_2As_2$ onto 285 nm $SiO_2$/Si.