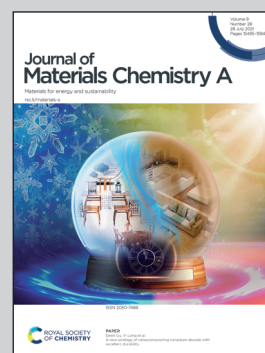


**Highlighting research led by Dr Akira Nagaoka at the Research Center for Sustainable Energy & Environmental Engineering, University of Miyazaki, Japan.**

Environmentally friendly thermoelectric sulphide  $\text{Cu}_2\text{ZnSnS}_4$  single crystals achieving a 1.6 dimensionless figure of merit  $ZT$

High-quality  $\text{Cu}_2\text{ZnSnS}_4$  (CZTS) single crystal ingots are utilized as thermoelectric material. A record high dimensionless figure of merit  $ZT = 1.6$  has been achieved in totally environmentally benign p-type Na-doped CZTS single crystal. Our results for CZTS demonstrate that a high  $ZT$  can be realized in an intrinsic structure, as a single crystal, with simple tuning by anisotropy, composition, and doping without complex structuring.

**As featured in:**



See Akira Nagaoka *et al.*,  
*J. Mater. Chem. A*, 2021, **9**, 15595.