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Thermoelectric properties of CdGa2O4 spinel

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Thermoelectric materials can convert heat into electricity and thermoelectric devices can play an important role in the efficient use of energy. In this study, we investigate the thermoelectric properties of hard glassy spinel mineral CdGa2O4. The potential of a material to be a candidate as the active component of a thermoelectric device is captured in the figure of merit, ZT, which includes information on the lattice and electronic transport properties. Given the difficulties of directly measuring ZT experimentally, we computed its value within density functional theory using linearised Boltzmann transport equations in a relaxation time approximation. We find that CdGa2O4 is promising as a high temperature thermoelectric material.

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Prof Daniel Joubert - university of Witwatersrand- Daniel.Joubert2@wits.ac.za

Dr Glenn Jones- JoJohnson Matthey Research Pretoria, gjones@matthey.com

Primary author: Mr RUGUT, Elkana (Elkana Rugut University of the Witwatersrand, Johannesburg.)

Co-authors: Prof. JOUBERT, Daniel (School of Physics, University of the Witwatersrand); Dr GLENN, Jones

(Johnson Matthey Research, Pretoria)

Presenter: Mr RUGUT, Elkana (Elkana Rugut University of the Witwatersrand, Johannesburg.)

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