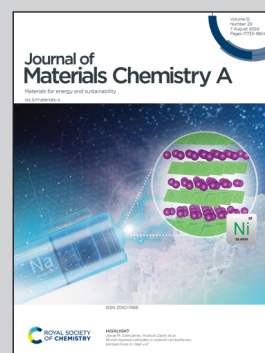


Highlighting a review on the potential applications of thermoelectrics in nuclear fusion reactors by a group of researchers led by Dr Jing Cao and Dr Andrew Ngo from Institute of Materials Research and Engineering (IMRE), A*STAR, Singapore, and Prof. Ady Suwardi from Chinese University of Hong Kong.

Thermoelectrics for nuclear fusion reactors: opportunities and challenges

In this review, we discuss the promising applications and practical considerations of using thermoelectric materials and devices to harvest the unutilized thermal gradient between the plasma-facing surfaces and the molten salt coolant loop in tokamak fusion reactors. The suitability of various high temperature thermoelectric materials were assessed, while the practical considerations of plasma-facing TE devices in fusion reactors were also discussed in detail, where potential overlaps between material modifications for enhancing TE properties and neutron irradiation resistance in materials were identified, together with compromises in TE device design parameters.

As featured in:



See Andrew Chun Yong Ngo, Ady Suwardi, Jing Cao *et al.*, *J. Mater. Chem. A*, 2024, 12, 17771.