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This Focus Section of the Journal of Materials Research contains articles that were accepted in response to an invitation for manuscripts.

INTERCONNECTS AND INTERFACES IN ENERGY CONVERSION MATERIALS

FOCUS SECTION

Introduction

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Advancements in the efficiencies of renewable energy conversion technologies may pave the way to a cleaner, more sustainable future in both developing and developed countries. While research efforts in academia and industry have yielded improved conversion efficiencies of state-of-the-art energy materials, such as solid oxide fuel cells, photovoltaics, thermoelectrics, etc., wide-scale commercialization of these materials is hindered by parasitic electrical and thermal losses at the interfaces between these materials that produce electrical energy and the interconnects that extract the power. Furthermore, due to the reactive and often volatile nature of constituent elements typically found in these energy materials —those from the chalcogen (including oxygen), pnictogen, and halogen groups—achieving chemical stability of these interfaces is challenging. This Focus Section highlights recent works pertaining to the development, enhancement, and characterization of interconnect materials and their interfaces with energy conversion materials.

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