



Prof. Abbie Mclaughlin

The University of Aberdeen

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12.00 pm

Oxide Ion and Protonic Conductivity in Hexagonal Perovskites

Solid-oxide fuel cells (SOFCs) and proton ceramic fuel cells (PCFCs) offer a viable option to produce clean energy from sustainable resources, with low emission of pollutants, fuel flexibility and high energy conversion rates. New materials, which exhibit high ionic conductivity ($\geq 10 \text{ mS cm}^{-1}$) at intermediate temperatures ($< 600 \text{ }^\circ\text{C}$), are sought for the next generation of ceramic fuel cells. Such fuel cells will be more cost-effective and have greater longevity. Two new hexagonal perovskite systems will be presented which exhibit significant oxide and/or proton conductivity. The structural features that control the ionic conductivity will be discussed.

Biography

Prof. Abbie Mclaughlin undertook her PhD with Paul Attfield at Cambridge on Superconducting materials. She then moved to Aberdeen to take up a RSE personal fellowship followed by a Leverhulme early career fellowship, and has been at Aberdeen ever since! Her research interests are the synthesis and study of transition metal oxides and oxyarsenides with fascinating electrical and magnetic properties.