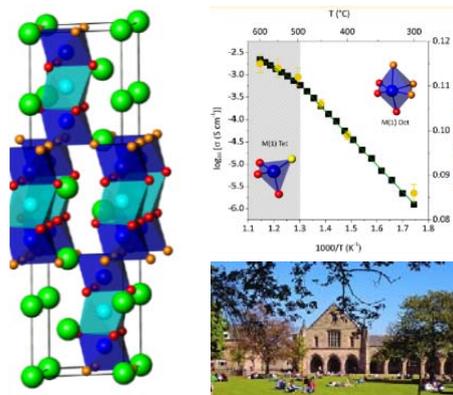


Novel electrolytes for fuel cells: a PhD challenge in Scotland

We would like to invite you to join us as a PhD student at the University of Aberdeen in Scotland, UK.

The research project targets new conducting materials as electrolytes for high temperature fuel cells, which are devices capable to convert chemical energy into electricity with very high efficiencies, and low environmental impact. More particularly, we will investigate hexagonal perovskites and related materials as ionic conductors in solid oxide fuel cells (high temperatures 300 – 1000°C), as well as potential proton conductors for other lower temperature fuel cells [1-3].



You will be part of one Centre for Doctoral Training at the University of Aberdeen, involving 15 PhD students, with over one million pound investment, to obtain energy and materials from renewable feedstock. Following the multidisciplinary spirit of the research, you will be supervised by three academics:

- Prof. Abbie. McLaughlin and Prof. Angel Cuesta, at the Department of Chemistry
- Dr. Alfonso Martinez-Felipe, at the School of Engineering.

During the three years of the PhD duration, you will synthesise new oxide ion and proton conductors, and you will characterise their physico-chemical and conductivity properties by applying a wide variety of techniques.

In addition to developing your career as a researcher, you will have the chance to enjoy the international and warming environment at the University of Aberdeen, which was listed as the Scottish University of the year in 2018, at the Times and Sunday Times Good University Guide 2019 (<https://www.abdn.ac.uk/study/undergraduate/scottish-university-of-the-year.php>). Most importantly, you will have the opportunity to enjoy our fantastic weather and friendly staff!

The envisaged **start date of the PhD is September/October 2019**, with some flexibility. The grant covers fees and stipend for EU or UK students (36 months).

Deadline for application is the 28th of February

(<https://www.findaphd.com/phds/project/synthesis-and-investigation-of-novel-ionic-conductors/?p94753>)

Of course, please do not hesitate to ask any further doubts, and hope to see you soon in Aberdeen!

Dr. Alf Martinez-Felipe / a.martinez-felipe@abdn.ac.uk

1. S. Fop, et al., Oxide Ion Conductivity in the Hexagonal Perovskite Derivative $\text{Ba}_3\text{MoNbO}_{8.5}$, *J. Amer. Chem. Soc.* **138**, 16764 (2016).
2. S. Fop, . et al., Investigation of the Relationship between the Structure and Conductivity of the Novel Oxide Ionic Conductor $\text{Ba}_3\text{MoNbO}_{8.5}$. *Chem. Mater.* **29**, 4146 (2017).
3. S. Fop et al. The Electrical and Structural Characterization of $\text{Ba}_3\text{MO}_{1-x}\text{Nb}_{1+x}\text{O}_{8.5-x/2}$: The relationship between mixed coordination, polyhedral distortion and the ionic conductivity of $\text{Ba}_3\text{MoNbO}_{8.5}$. *Inorganic Chemistry* **56**, 10505 (2017).