

RSC Applied Interfaces

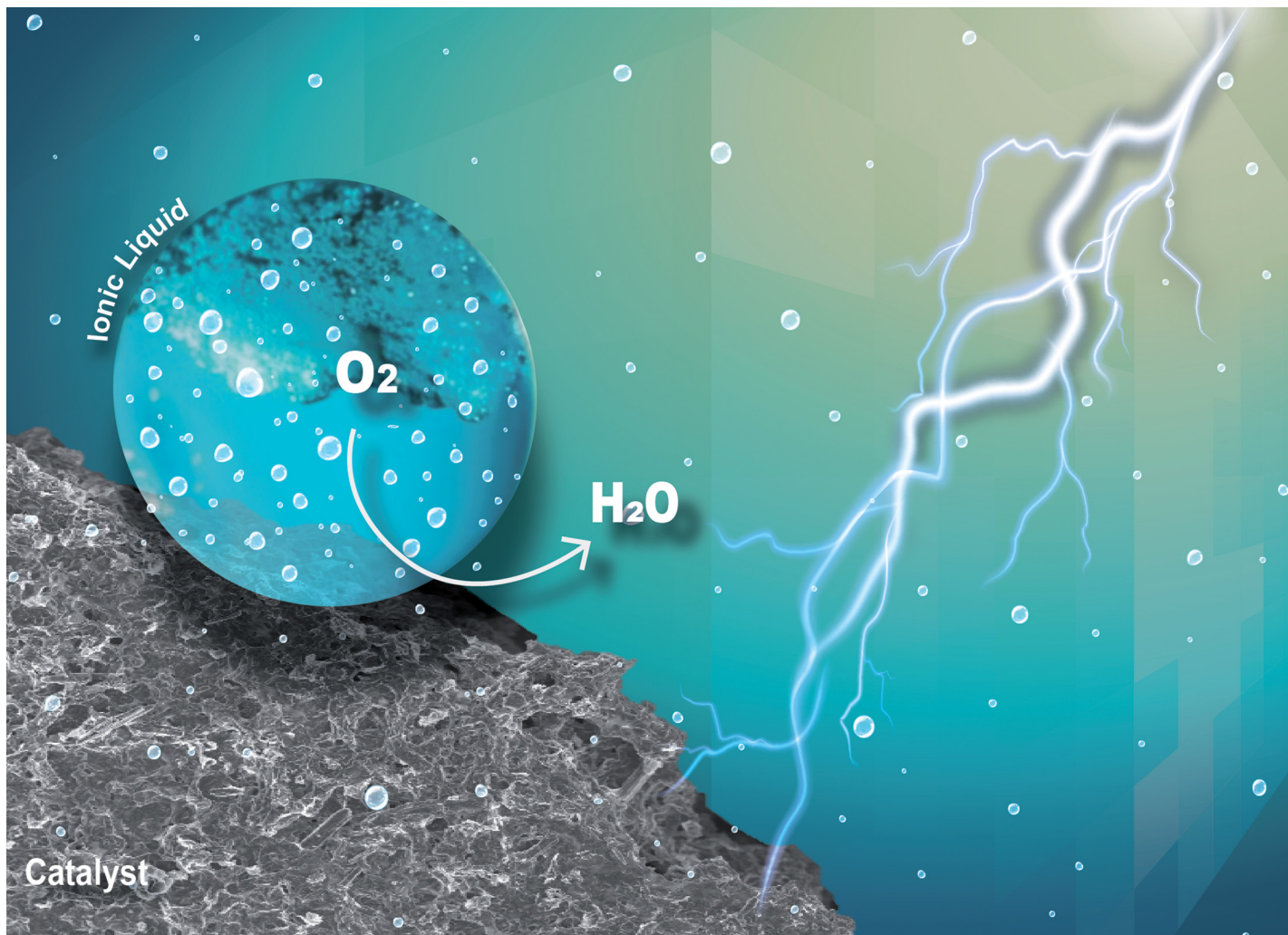
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**Interfacial and surface research
with an applied focus**

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**Fundamental questions
Elemental answers**

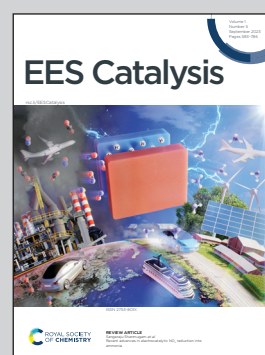


Showcasing research on the use of ionic liquid layers for electrochemical oxygen reduction, from Prof. Maria-Magdalena Titirici's laboratory at Imperial College London, UK. Image designed and illustrated by Silvia Favero.

Deconvoluting kinetics and transport effects of ionic liquid layers on FeN_4 -based oxygen reduction catalysts

This work analyses the effect of adding thin layers of ionic liquids to FeN_4 -based oxygen reduction electrocatalysts. It identifies alterations in ORR kinetics caused by the ionic liquids and deconvolutes these effects from those resulting from the transport of oxygen. This ultimately allows to correlate the performance of the catalyst, to properties of the ionic liquids and to predict how the activity can be further boosted, *i.e.* by tuning the hydrophobicity, maximizing the oxygen solubility and improving the distribution of the ionic liquid.

As featured in:



See Ifan E. L. Stephens, Maria-Magdalena Titirici *et al.*, *EES. Catal.*, 2023, 1, 742.