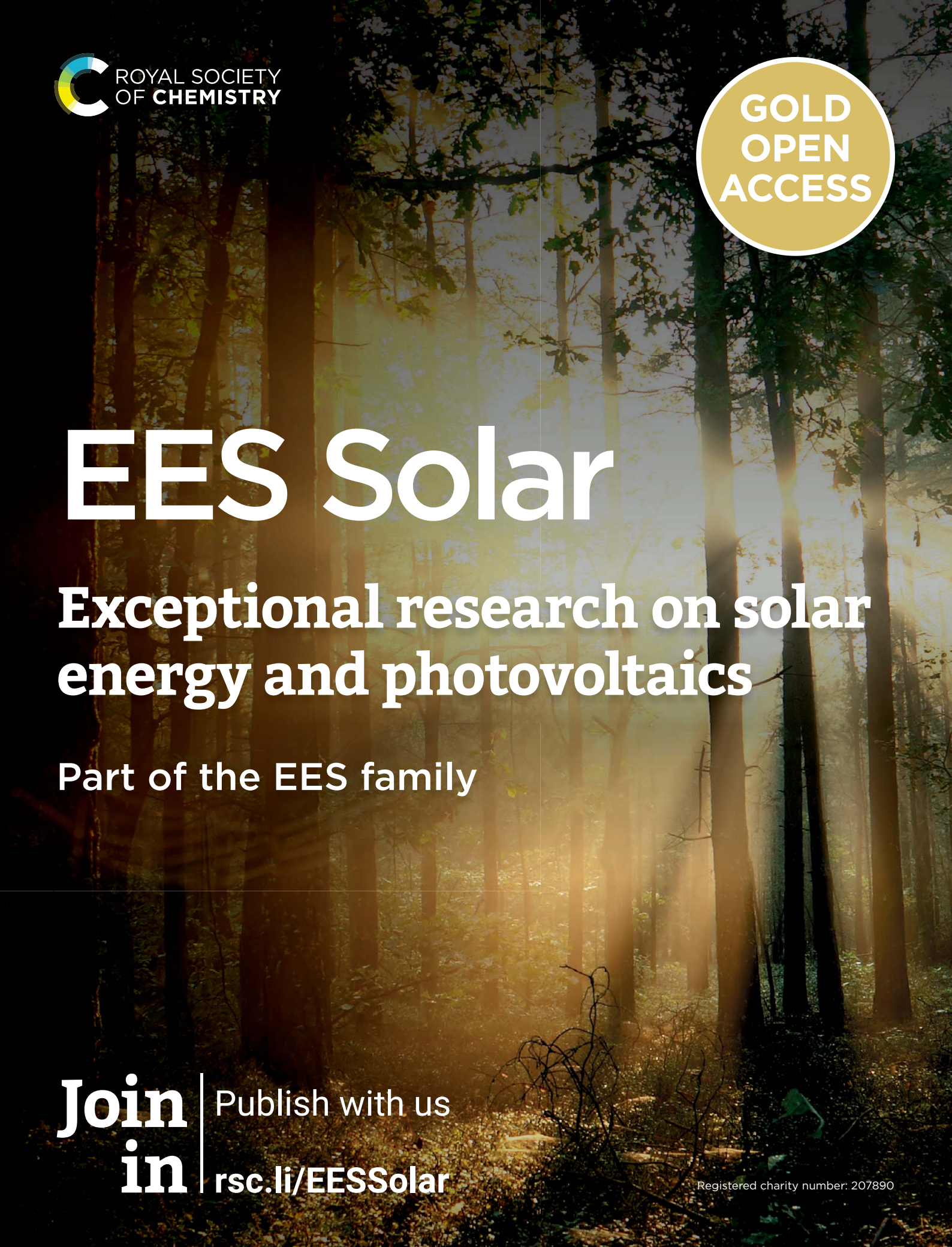
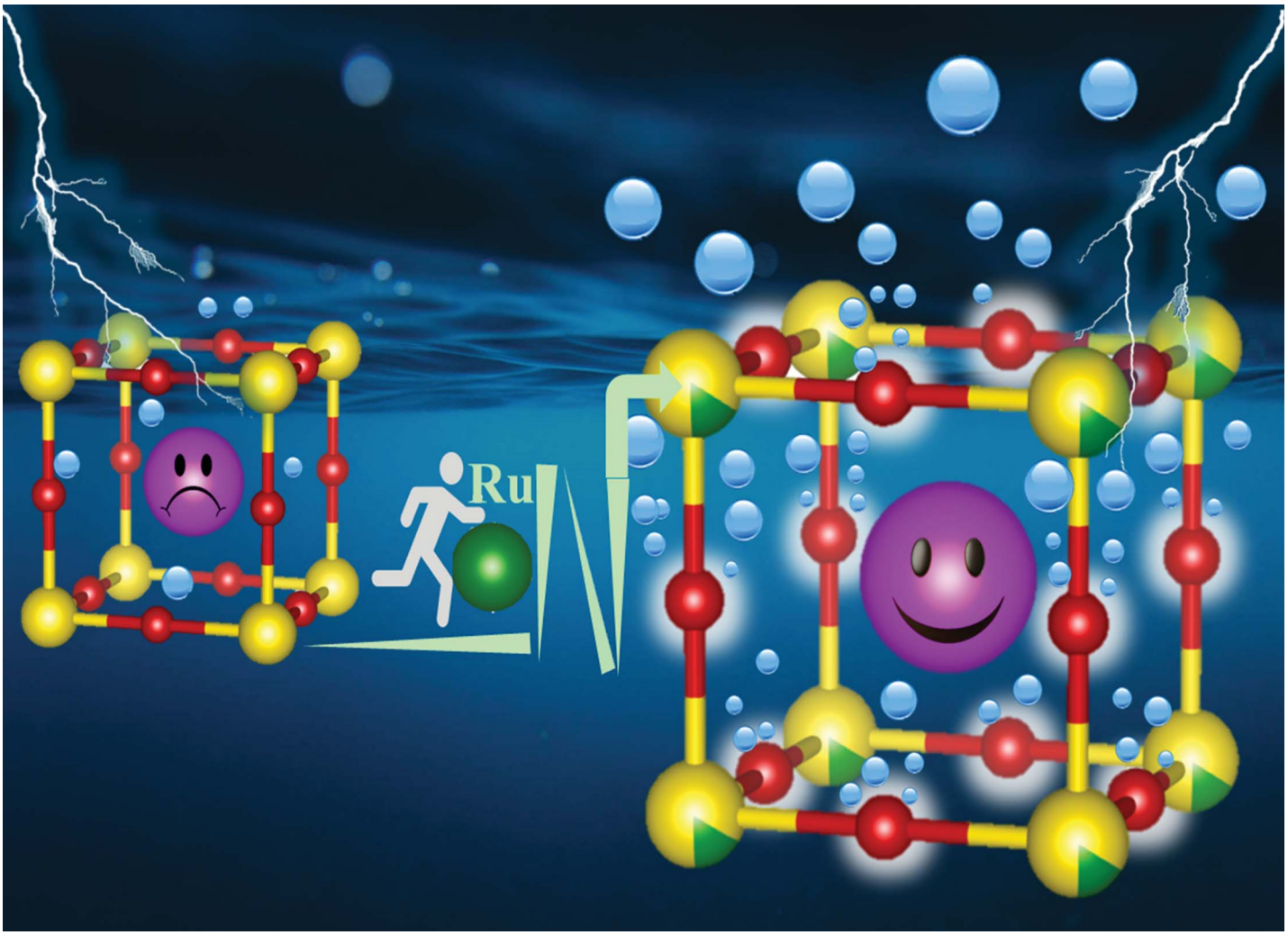

ROYAL SOCIETY OF CHEMISTRY
GOLD OPEN ACCESS
EES Solar
Exceptional research on solar energy and photovoltaics
Part of the EES family
Join in
Publish with us
rsc.li/EESSolar
Registered charity number: 207890

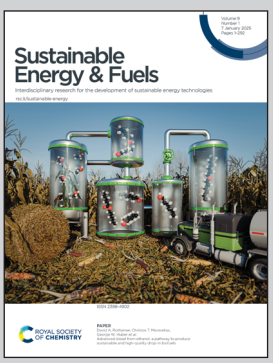


Showcasing research from Professor Tapas Kumar Mandal's laboratory, Department of Chemistry, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India.

Harnessing lattice oxygens in a high-entropy perovskite oxide for enhanced oxygen evolution reaction

Lattice oxygen participation enhances OER activity but often compromises catalyst stability. This work demonstrates a high-entropy perovskite oxide, $Ba_{0.33}Sr_{0.67}Co_{0.33}Ti_{0.165}Ru_{0.165}Sb_{0.33}O_3$, as a stable OER electrocatalyst with improved lattice oxygen participation. By leveraging high-entropy stabilization, the catalyst overcomes the typical drawbacks of the lattice oxygen modulation (LOM) mechanism. The incorporation of low-concentration Ru significantly boosts activity while maintaining structural integrity, providing insights into designing cost-effective, high-performance OER catalysts.

As featured in:



See Sujan Sen and Tapas Kumar Mandal, *Sustainable Energy Fuels*, 2025, **9**, 129.

ROYAL SOCIETY OF CHEMISTRY

rsc.li/sustainable-energy

Registered charity number: 207890