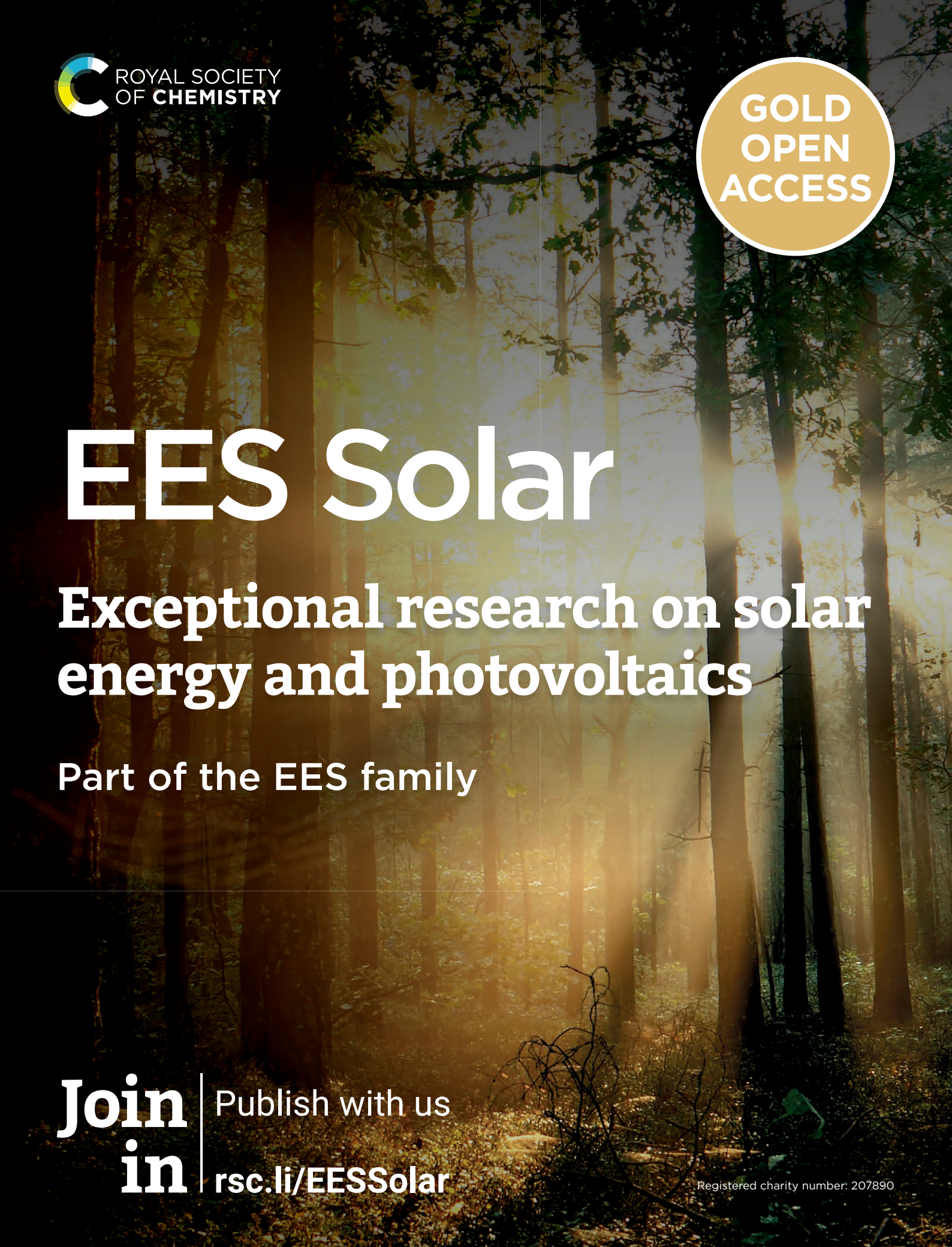
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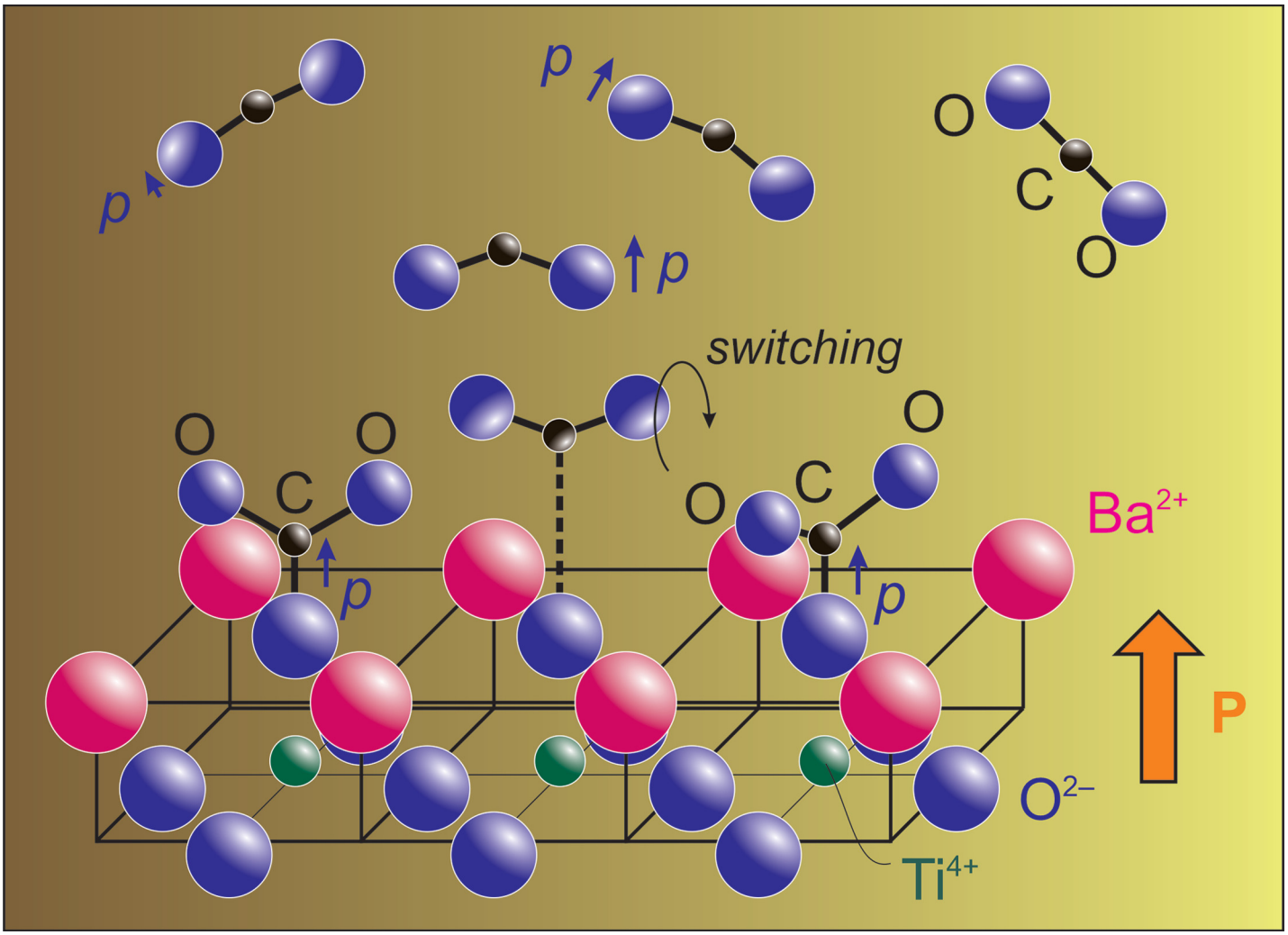
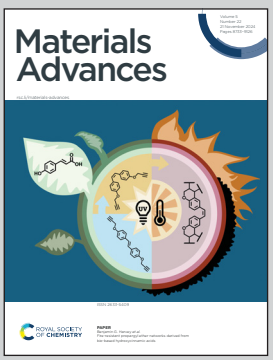


Showcasing research from Dr Cristian M. Teodorescu's laboratory, Surfaces and Interfaces, National Institute of Materials Physics, Măgurele, Romania.

Ferroelectric-enabled significant carbon dioxide molecular adsorption on $BaTiO_3$(001)

Carbon dioxide is adsorbed in molecular form on oxygen anions on BaO-terminated, atomically clean (001) oriented barium titanate, and is desorbed when the substrate is heated above the Curie temperature. This suggests that the adsorption is mainly determined by the ferroelectricity of the surface and by the molecular polarization induced by the electric field provided by the barium titanate. Adsorption processes are fully reversible. The CO_2 coverage is on the order of one molecule for a surface BaO unit cell, promoting barium titanate as a promising candidate for carbon removal from atmosphere.

As featured in:



See Cristian M. Teodorescu *et al.*, *Mater. Adv.*, 2024, **5**, 8798.

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