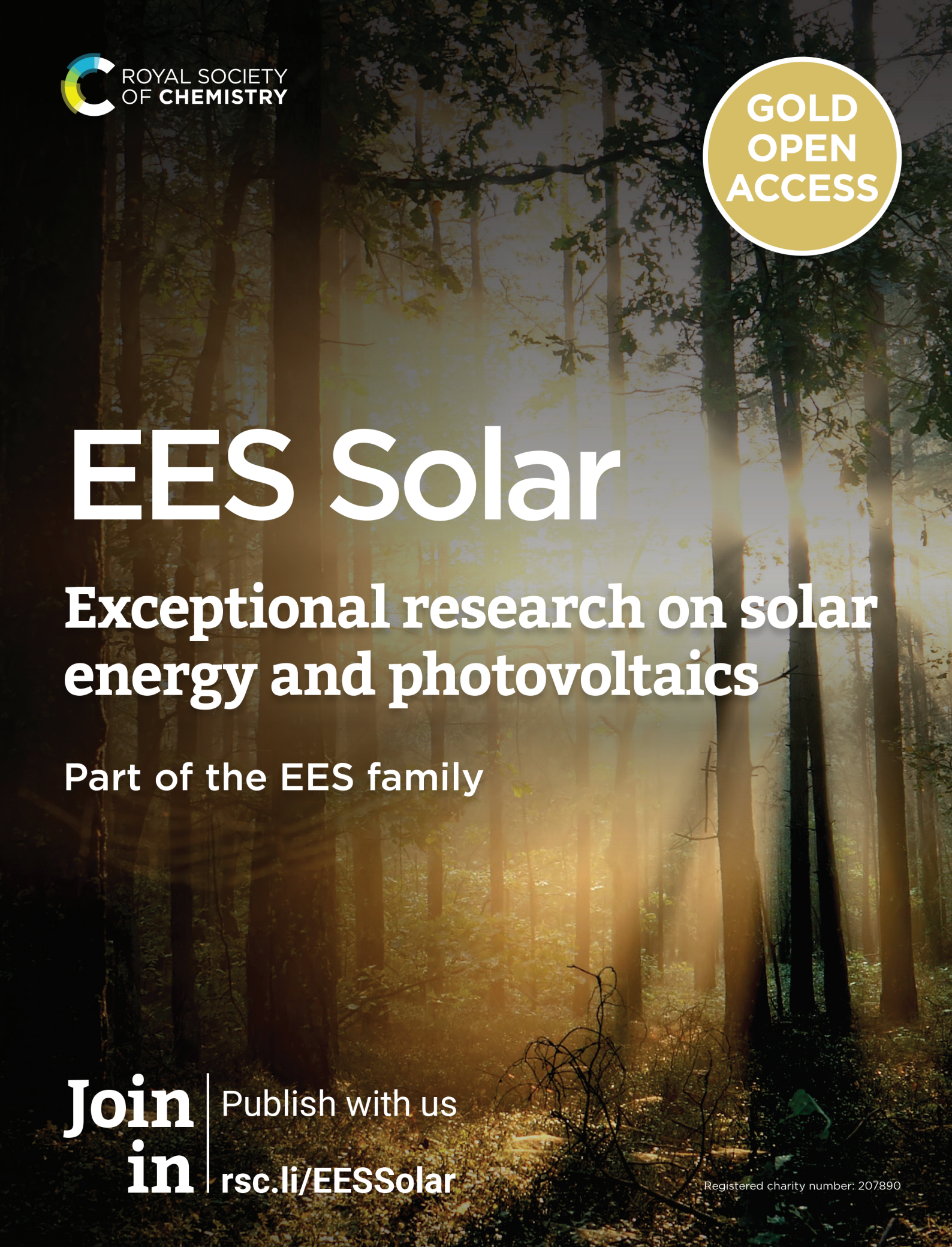
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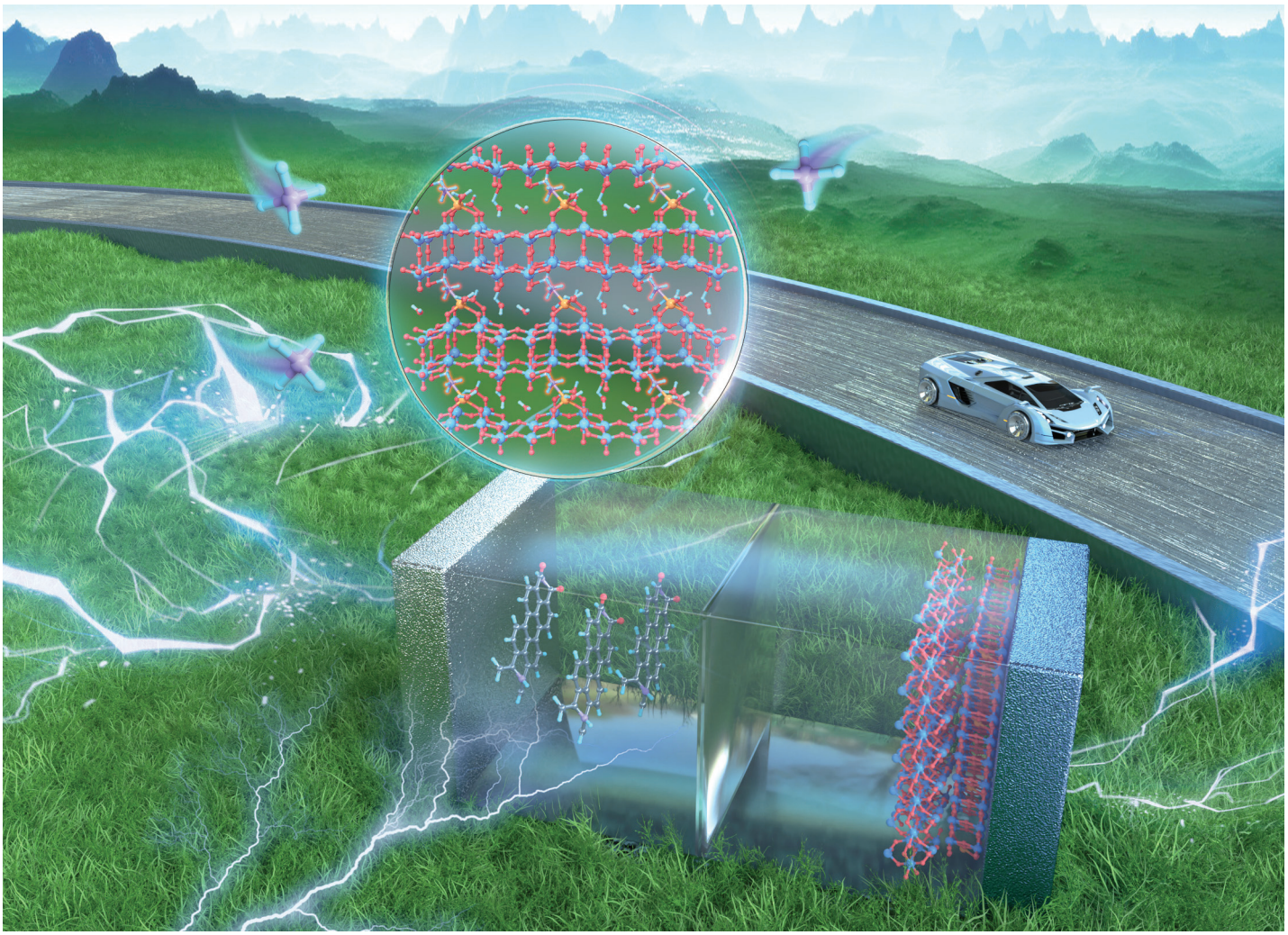
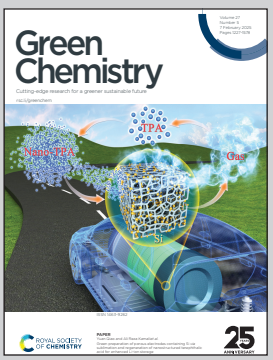


Showcasing research from Associate Professor Miaomiao Liang's laboratory, School of Materials Science and Engineering, Xi'an Polytechnic University, Xi'an, China.

Heterogeneous structure engineering and optimizing the electronic band structure of the $VO_2(B)/V_3O_5$ cathode: toward low-cost, long life span and green aqueous ammonium ion battery

An iron-doped heterogeneous structured $VO_2(B)/V_3O_5$ with rich heterojunction interface was developed through heterojunction engineering and ion doping strategy. DFT calculations reveal that iron ion doping can adjust electronic band structure and promote phase transition by inducing fast catalytic coupling and NH_4^+ insertion process. The assembled $Fe_{0.1}VO_2(B)/V_3O_5$//PTCDI full cell exhibits high capacity of 143.8 mAh g^{-1} at 0.5 A g^{-1} and energy density of 115.1 Wh kg^{-1}.

As featured in:



See Haiyang Wang, Zongcheng Miao, Chong Fu *et al.*, *Green Chem.*, 2025, **27**, 1397.

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