

EES Catalysis

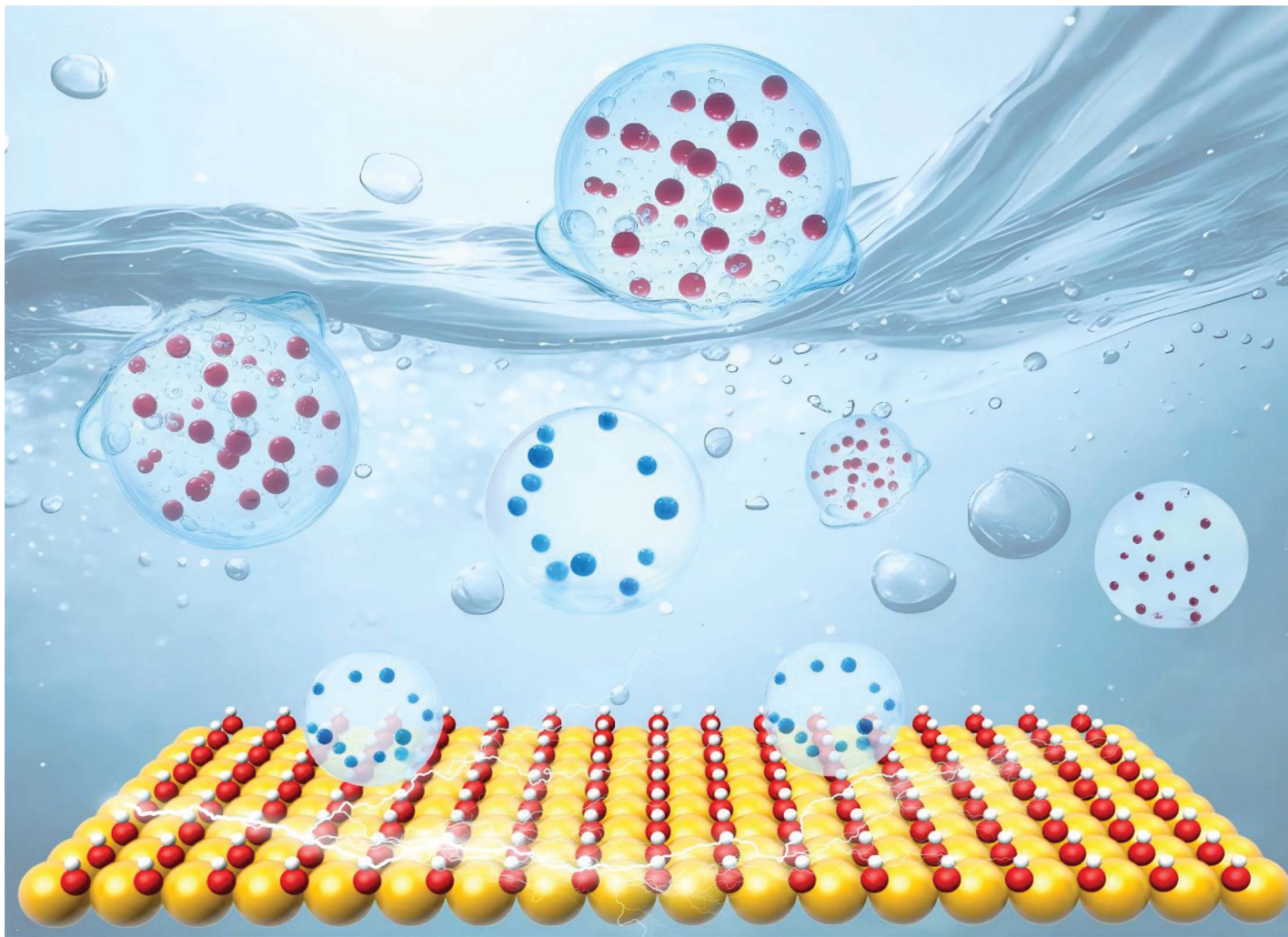
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Highlighting a study on hydrogen bond network effect at the electrode-electrolyte interface by a group of researchers led by Prof. Hui PAN from University of Macao.

Revealing the hydrogen bond network effect at the electrode-electrolyte interface during the hydrogen evolution reaction

The hydrogen bond network (HBN) in the electrical double layer (EDL) at the electrode-electrolyte interface governs water migration, impacting hydrogen evolution reaction efficiency. We developed an Aermet100 steel-derived catalyst with a 307 mV overpotential at 500 mA cm⁻². In KOH solutions, water migration is inhibited in 1 M due to a stronger HBN, but enhanced in 3 M and 6 M, offering insights into water transport kinetics and optimization for industrial electrolysis.

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As featured in:



See Yuxuan Xiao, Shuangpeng Wang, Hui Pan *et al.*, *J. Mater. Chem. A*, 2025, **13**, 9049.