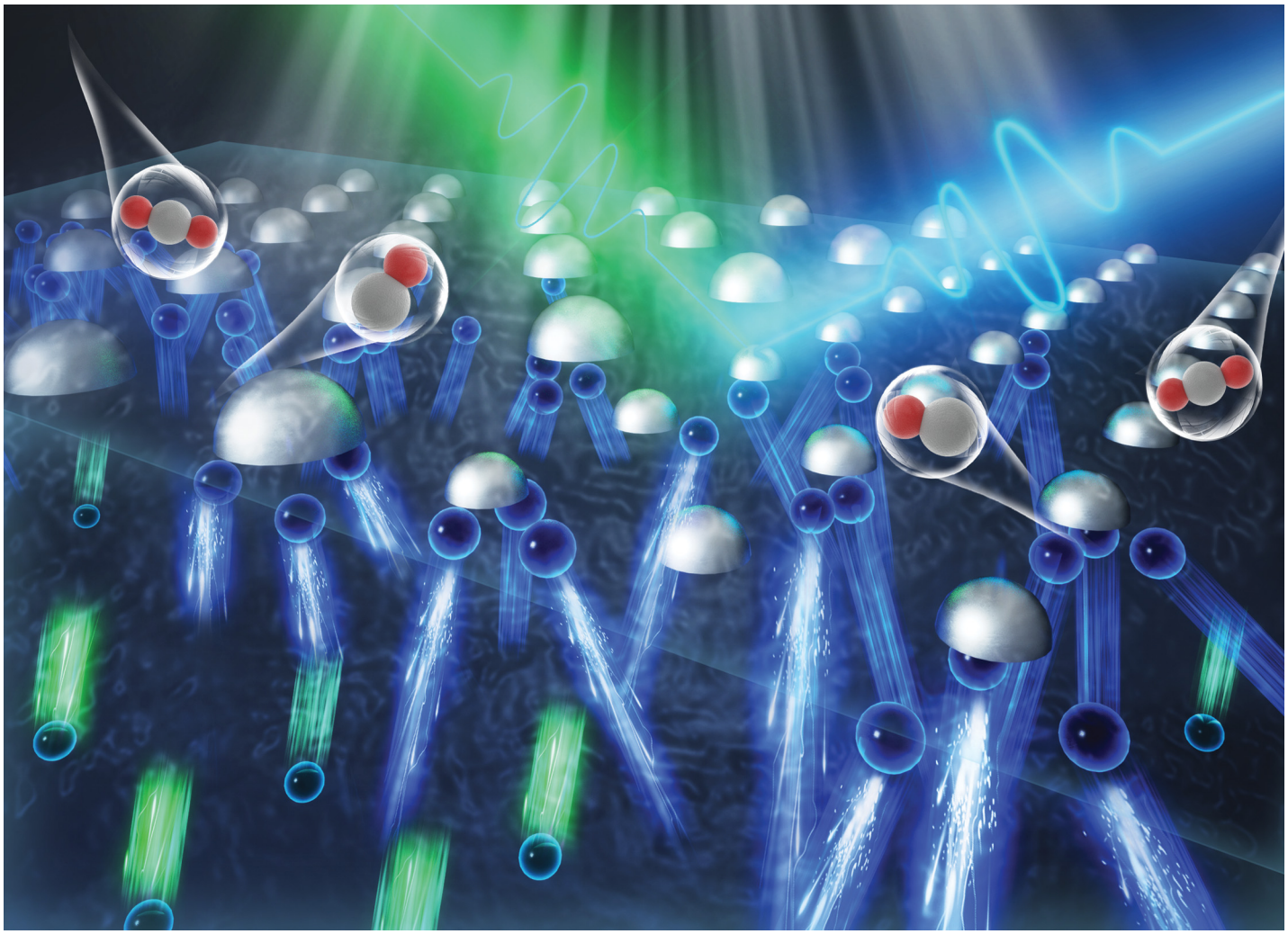
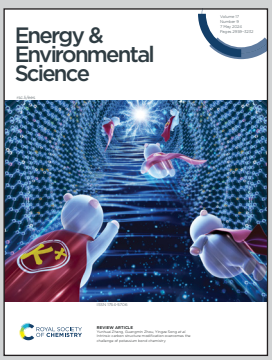


Showcasing research from Professor Lin's laboratory, Department of Mechanical and Energy Engineering, Southern University of Science and Technology, Shenzhen, China.

Performance assessment of photoelectrochemical CO_2 reduction photocathodes with patterned electrocatalysts: a multi-physical model-based approach

This work introduces a multi-physical model-based framework to quantitatively analyze the interplay among optical propagation, charge transport, mass transfer, and electrochemical reactions in a PEC CO_2R photocathode with patterned catalysts. Insights have been provided for engineering high-performance CO_2R photocathodes by delicately balancing optical reduction and catalyst area to optimize energy efficiencies while leveraging the pinch-off effect to reduce the onset potential for CO_2R.

As featured in:



See Meng Lin *et al.*, *Energy Environ. Sci.*, 2024, **17**, 3032.

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