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Showcasing research from Professor Wang Baoguo's laboratory, Department of Chemical Engineering, Tsinghua University, Beijing, China.

Zr-doped heterostructure interface to tune the electronic structure of bi-functional electrocatalysts for water splitting

Fossil fuels remain the dominant energy source, while green hydrogen production via water splitting using electrocatalysts lags behind global demands. To address this critical challenge and promote sustainability, developing cost-effective and highly active electrocatalysts is imperative. Electrocatalysts based on non-precious metals, particularly those doped with high-valence zirconium (Zr), offer a promising alternative. This Zr-doped Zr-NiFeLDH@NiCoP/NF 3D heterostructure bi-functional electrocatalyst mimics the performance of precious metals by tuning the electronic structure and surface catalytic morphology, thereby enhancing green hydrogen production and potentially reducing carbon dioxide emissions.

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See Baoguo Wang *et al.*,
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