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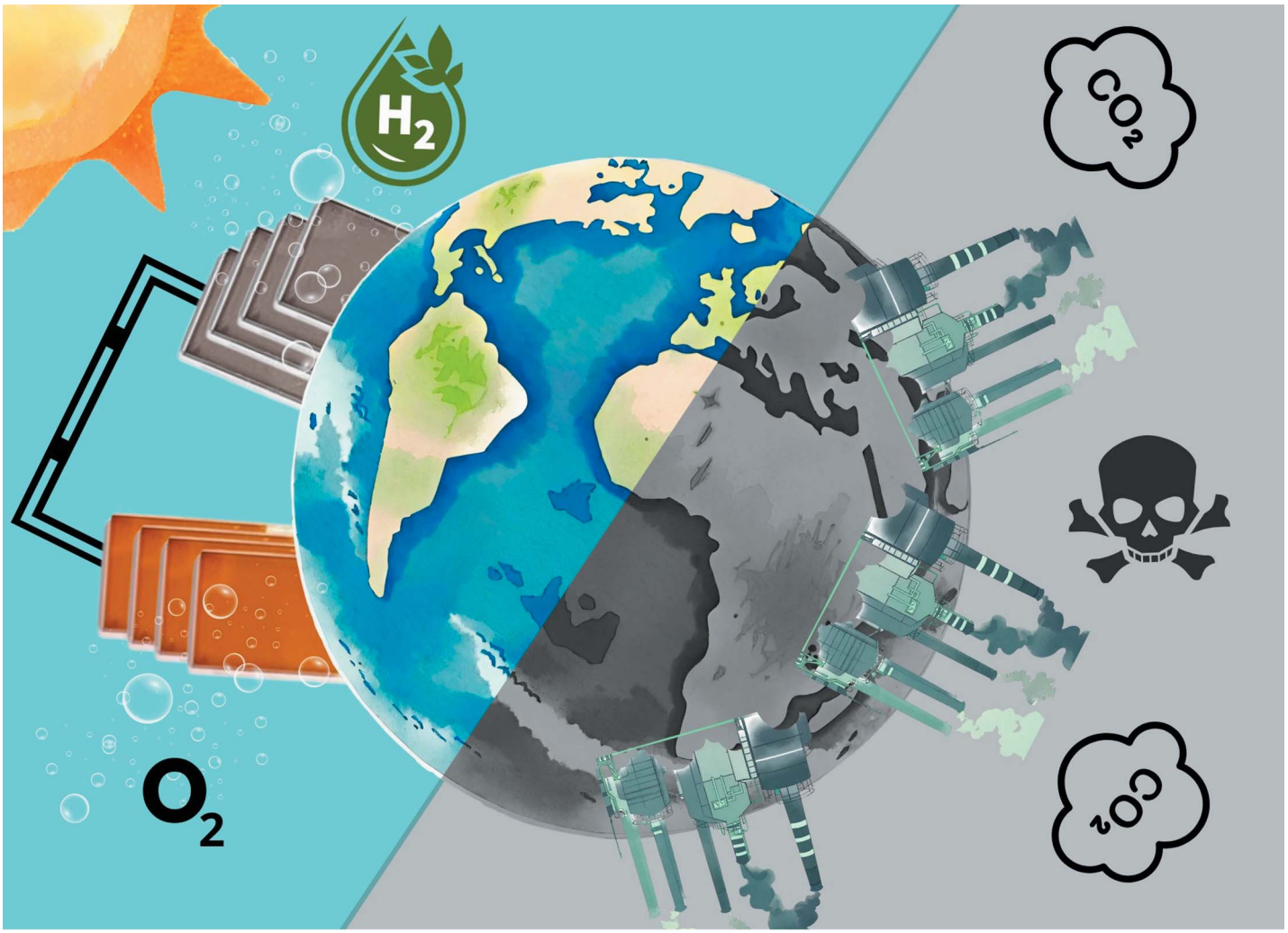

Featuring a study on hematite photoanodes engineered by a polymeric precursor solution method carried out by a group of researchers led by Dr Flavio L. Souza at the Brazilian Nanotechnology National Laboratory.

Dual modification on hematite to minimize small polaron effects and charge recombination for sustainable solar water splitting

A novel synthetic strategy was developed to leverage earth-abundant Al^{3+} and Zr^{4+} in a dual-chemical modification to synergistically minimize small polaron effects and interfacial charge recombination on hematite nanostructure. The polymer precursor solution method simultaneously induces Al^{3+} doping of hematite crystal lattice while Zr^{4+} forms interfacial excess, creating a single-phased homogenous nanostructured thin film. The engineered photoanode increased solar conversion efficiency by 6.5 times when compared to pristine hematite.

As featured in:

See Flavio L. Souza *et al.*, *J. Mater. Chem. A*, 2024, **12**, 6280.

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