

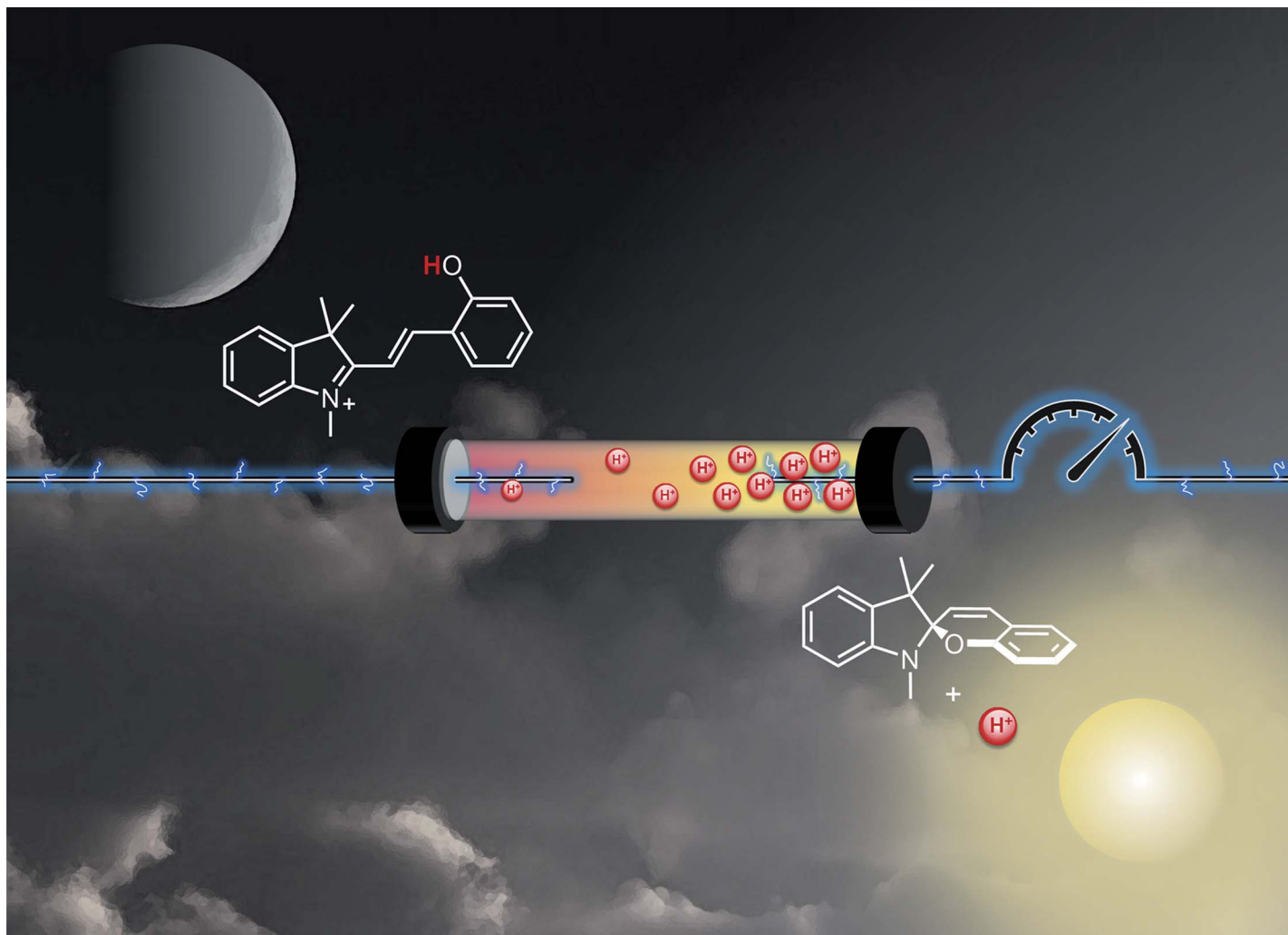
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Showcasing research from Professor Cristian Pezzato, Laboratory for Macromolecular and Organic Chemistry (MOC), Department of Chemical Sciences, University of Padova, Italy.

Wiring proton gradients for energy conversion

Photosynthetic organisms transduce sunlight into differences of protonic chemical potentials as high as 4 pH units. These proton gradients are of vital importance, as they are effectively used to activate the synthesis of adenosine triphosphate, the energy currency of life. Here, we report on a strategy based on spiropyran/merocyanine molecular switches for generating metastable proton gradients as large as those of natural systems. When interfaced between two electrodes, our photoactive solution mediates the transduction of light energy into open circuit voltages as high as 240 mV at steady-state.

As featured in:



See Dong Jun Kim, Cristian Pezzato *et al.*, *Chem. Sci.*, 2024, **15**, 19745.