

EES Catalysis

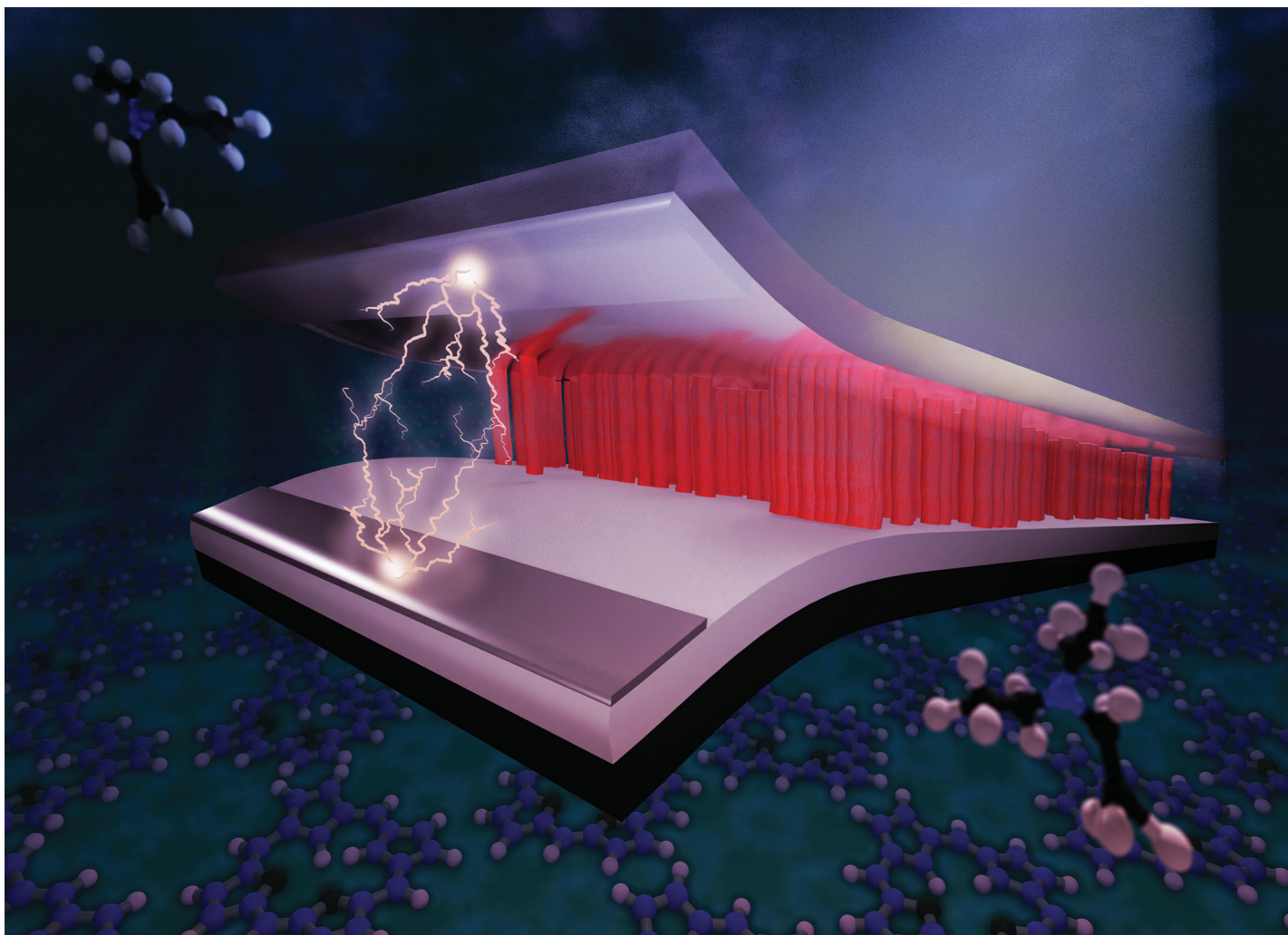
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Elemental answers

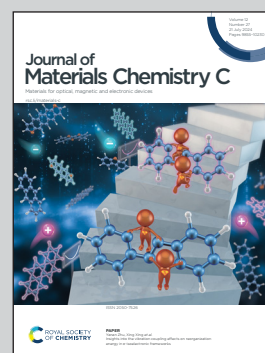


Showing research from SRM Institute of Science and Technology, India, and University of Rome Tor Vergata, Italy

A self-powered photoactive room temperature gas sensor based on a porphyrin-functionalized ZnO nanorod/p-Si heterostructure

Combining the heterojunction of p-Si with ZnO nanorods and leveraging the high extinction coefficient and gas sensitivity of porphyrins, the authors demonstrate a visible light-powered gas sensor. The device achieved a maximum open-circuit voltage of 0.1 V and a short-circuit current of 12.16 μA , exhibiting excellent sensitivity to triethylamine vapors. These findings pave the way for the development of autonomous sensor nodes with potential applications in environmental control.

As featured in:



See Yuvaraj Sivalingam, Corrado Di Natale *et al.*, *J. Mater. Chem. C*, 2024, **12**, 9968.