

RSC Applied Interfaces

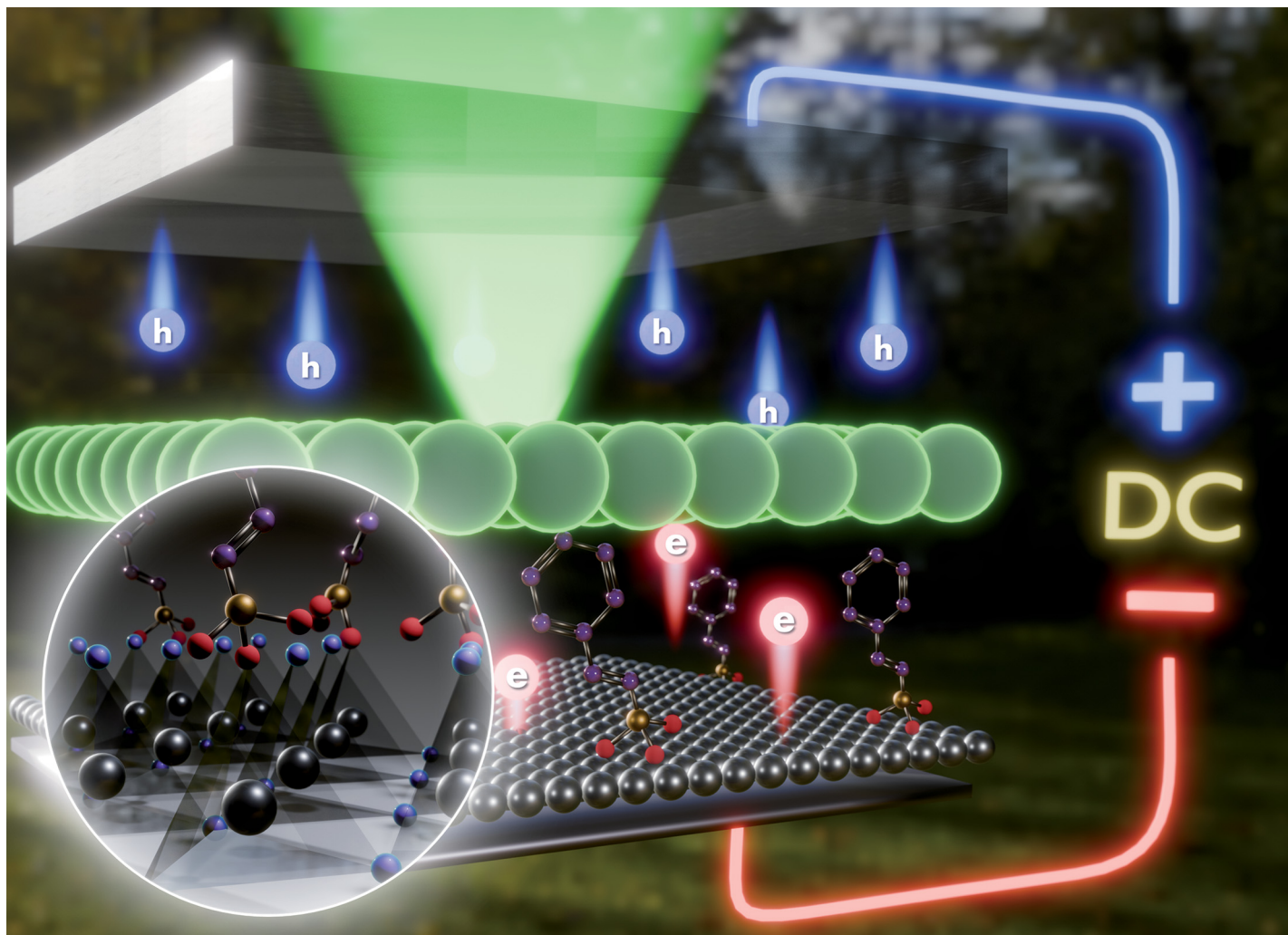
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**Interfacial and surface research
with an applied focus**

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**Fundamental questions
Elemental answers**



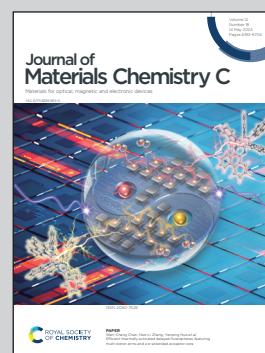
Showing research from Dr Sheng-Hsiung Yang's group,
Institute of Lighting and Energy Photonics,
National Yang Ming Chiao Tung University, Taiwan.

Surface functionalization of ZnO nanoparticles with
sulfonate molecules as the electron transport layer
in quantum dot light-emitting diodes

Phenylated ligand sodium beta-styrenesulfonate (S β SS)
was introduced onto ZnO nanoparticles to passivate surface
defects while up-shifting the energy levels of the ZnO to
prevent excess electron injection. The optimized quantum
dot light-emitting diode based on the S β SS-modified ZnO
exhibited a highly improved current efficiency and prolonged
device lifetime.

Artwork by Mr Zong-Xuan She.

As featured in:



See Sheng-Hsiung Yang *et al.*,
J. Mater. Chem. C, 2024, **12**, 6423.