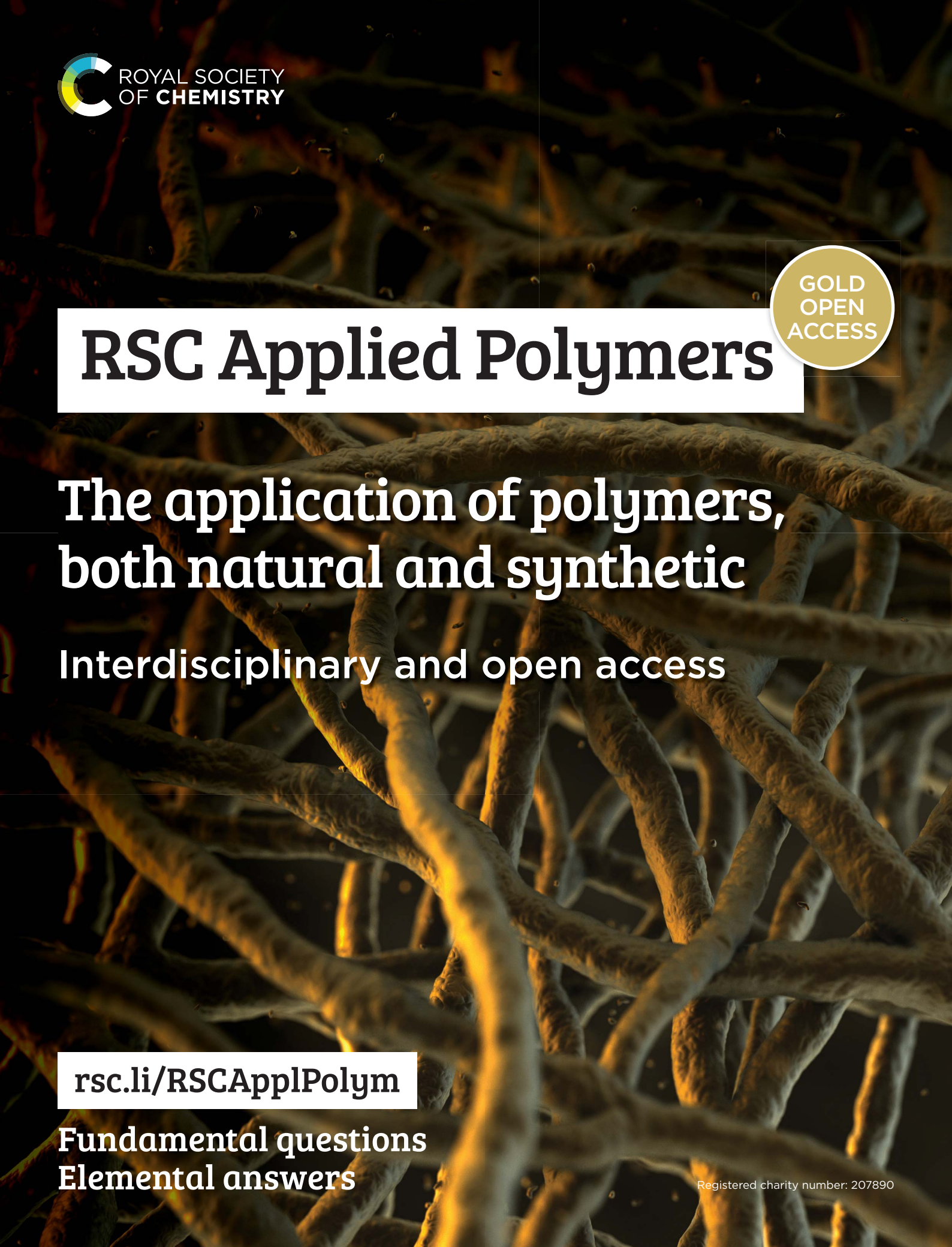
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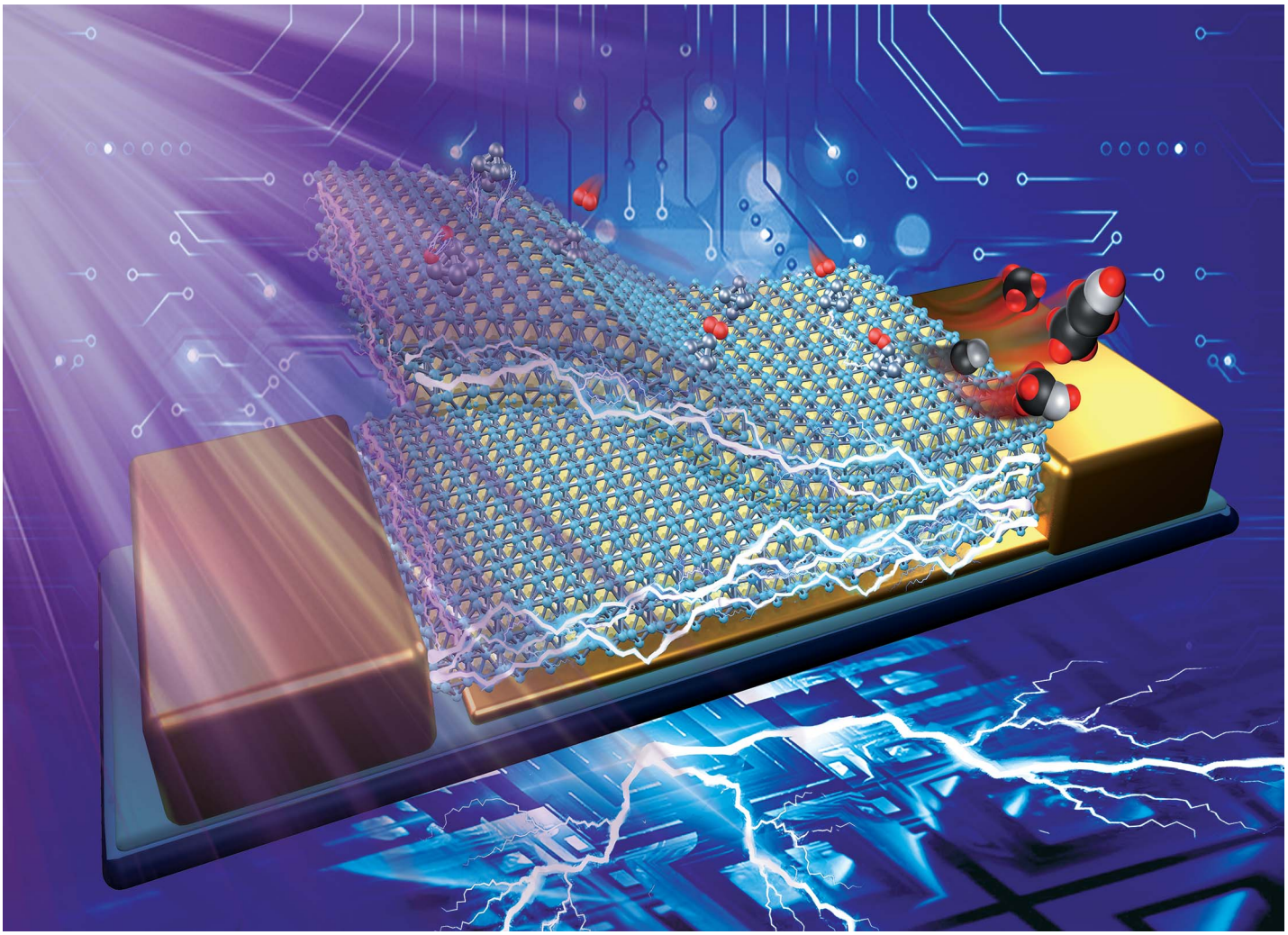

Highlighting a study on effective gas discrimination based on photoexcited Pd@MOF-derived nanocomposites from Prof. Jinhua Sun's laboratory, State Key Laboratory of Fire Science, University of Science and Technology of China, Hefei, China.

Ultra-effective room temperature gas discrimination based on monolithic Pd@MOF-derived porous nanocomposites: an exclusive scheme with photoexcitation

A high-selectivity reversed response to H_2 is discovered from the monolithic MOF-derived nanocomposites under UV photoexcitation at room-temperature, which is different from the typical n-type response of other flammable gases. The distinct response enables the ultra-effective gas discrimination. DFT calculations elaborated the mechanism of the different combinations of Pd and ZnO on the adsorption of gas molecules in detail, and confirmed the reaction process that produced the unique reverse response. This work provides a feasible reference for the design of photoexcited high-selectivity room temperature sensors.

As featured in:

See Kaiqiang Jin, Jinhua Sun *et al.*, *J. Mater. Chem. A*, 2024, **12**, 3896.

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