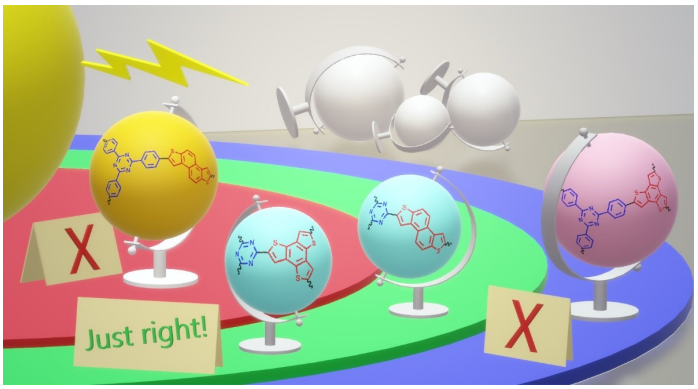
SCIENTIFIC HIGHLIGHT

Exploring the "Goldilocks Zone" of Semiconducting Polymer Photocatalysts via Donor-Acceptor Interactions

A team of researchers from Germany and Chechia has developed a polymer catalyst that can split hydrogen from water using sun light.

Hydrogen is regarded as the energy source of the future because its combustion e.g. as a car propellant proceeds cleanly to water without the generation of greenhouse gases like carbon dioxide. The novel design principle of these polymer catalysts is not only that they consist of abundant elements like carbon, nitrogen and sulphur. Notably, the researchers realised that the electron interactions between the electron-donor sulphur and the electron acceptor nitrogen can be used for particularly efficient charge separation in photo catalysis. This leads to materials that achieve – without the need for further chemical or physical modifications – the highest hitherto reported hydrogen evolution rate of 3158 mmol h^{-1} g^{-1}. The lead-author of this work, Dr. Michael J. Bojdys, is a junior member of the **IRIS Adlershof** since 2018.



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