

# The Application of Conjugated Photocatalysts in Sustainable Solar Fuels Generation

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**Date** May 18, 2026 (Monday)

**Time** 3:30 – 4:30 pm

**Venue** Room 4580, Academic Building, (Lifts 27-28), HKUST,  
[\(Location\)](#)

## Abstract

There is an urgent need for sustainable energy and chemical feedstocks. Here, I will present our work on the application of conjugated materials, namely conjugated microporous polymers, unbranched conjugated polymers and covalent organic frameworks, in photocatalytic hydrogen production to provide clean fuel,<sup>1-5</sup> carbon dioxide reduction to provide essential chemicals from a greenhouse gas,<sup>6,7</sup> and hydrogen peroxide generation.<sup>8</sup> The talk will provide a broad overview of the area of photocatalysis and the application of conjugated polymers in this area showcasing new opportunities, such as preparing photoactive films and 3D printing photoactive composites.

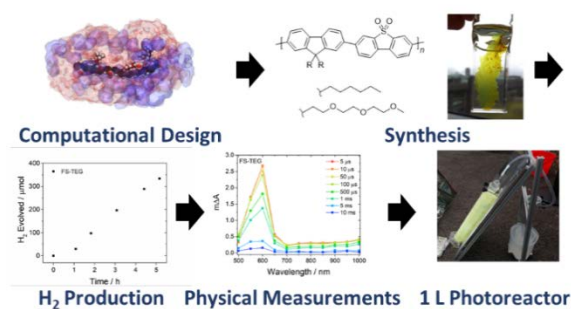


Figure 1: Approach used in the design and synthesis of polymer photocatalysts.

## References:

- [1] Sprick *et al. Chem. Mater.* **2019**, *31*, 305.
- [2] Sachs *et al. Nat. Commun.* **2018**, *9*, 4968.
- [3] Woods *et al. Energy Environ. Sci.* **2020**, *13*, 1843-1855.
- [4] Lyons *et al. Adv. Energy Mater.* **2025**, *14*, 2303680.
- [5] Lyons *et al. Adv. Funct. Mater.* **2025**, e13025
- [6] McQueen *et al. Chem. Sci.* **2024**, *15*, 18146-18160.
- [7] Sakakibara *et al. Bull. Chem. Soc. Jpn.* **2025**, *98*, uoaf017.
- [8] Lou *et al. Sci. China Mater.* **2026**, DOI: 10.1007/s40843-026-4111-4.

## About the Speaker

Seb obtained his PhD in 2013 from The University of Manchester developing catalytic systems and their application in the synthesis of organic field-effect transistors in particular polytrarylamines. He moved to the University of Liverpool to pursue postdoctoral work in the area of conjugated microporous polymers initially working on solution processible materials. He then focused on using the extended conjugation of these materials by studying their ability to act as photocatalysts for water splitting. He was promoted to a Research Lead position within the same group leading a team that worked on solar water splitting used a range of organic photocatalysts. He joined the Department of Pure and Applied Chemistry at the University of Strathclyde in June 2020 as an independent researcher with the goal of developing scalable systems for environmental applications initially particularly focusing on solar fuels generation and was promoted to senior lecturer (associate professor) in 2024. Seb has published 79 peer-reviewed publications and given over 90 invited seminars. He is the secretary of the RSC Photophysics & Photochemistry Special Interest Group and an advisory board member of the Solar Chemicals Network UK.

**All are Welcome**