



# THE UNIVERSITY of EDINBURGH

## School of Engineering

### IMP seminar

13:00-14:00 on 8<sup>th</sup> Nov

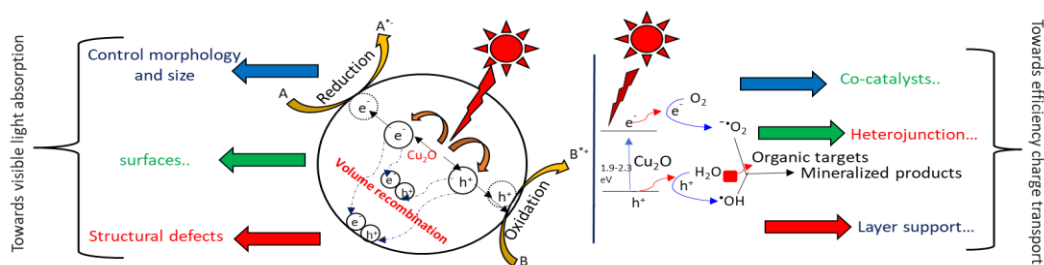
Sanderson Classroom 3

Design strategy: well-defined Cu<sub>2</sub>O-based materials for visible light photocatalytic applications. (Dr Karthikeyan Sekar)



### ABSTRACT

Solar photocatalytic processes offer a promising approach to renewable energy and environmental remediation; nevertheless, their application demands advancements in visible light harvesting and conversion, a particular focus on low-cost, earth-abundant materials. Semiconducting copper oxides show promise as visible light photocatalysts for solar fuels production and water depollution. In this talk, I'll speak about the Cu<sub>2</sub>O based materials design strategy (i.e. mild, hydrothermal, template and template-free synthesis) of core-shell, hierarchical, cubic, and well-defined structures/sizes for visible light photocatalytic energy and environmental applications.



### SPEAKER

Dr. Karthikeyan Sekar is a Research Assistant Professor at SRM Institute of Science and Technology in Chennai, India. He was a Special Researcher at the University of Tokyo before joining SRM. Previously, he was awarded the Japan Society for the Promotion of Science (JSPS) invitational scholarship (2021) and a JSPS postdoctoral fellowship (2018 to 2020), as well as a prestigious Royal Society Newton International Fellowship at Aston University in the United Kingdom (2016 to 2018). He was recognised as a Fellow of the Higher Education Academy in the United Kingdom in 2018. His research interests are on the engineering of nanomaterials based on earth abundant resources (e.g copper oxides, biomass) that can be used as a catalyst for renewable energy and environmental remediation. He is the author of 120 research articles, three book chapters, and four patents, and his work has influenced various industries in India and around the world.