

MQ Photonics Research Centre Seminar

Wednesday, 8 September 2021, 4:00 pm (Sydney time) (Online via the zoom link below)

Bio-inspired photonics for a sustainable future

Dr Changxu Liu

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Abstract:

With millions of years of evolution, Nature itself has developed unparalleled optimisation on its own. In this talk, I will provide some examples to show how we can learn the fancy physics embedded in natural creatures and apply it to nanophotonic devices capturing/utilising energy in a sustainable way. More specifically, you will see how the inspiration from chloroplasts and white beetles can help broadband energy harvesting and a lesson from fireflies for light-emitting diodes with better efficiency.

Speaker biography:

Dr Changxu Liu is a lecturer in the Faculty of Engineering and Environment at Northumbria University, Newcastle, UK. He got his PhD from King Abdullah University of Science and Technology in 2016. Before joining Northumbria in 2021, he worked as a research fellow at the University of Birmingham and a Humboldt Fellow in LMU Munich. His research interests are in the areas of metamaterials, nanophotonics and plasmonics, with a special focus on complex systems, including disordered and hybrid material structures. His (co) first-author papers have appeared in several high-impact journals, including *Nature Nanotechnology, Nature Photonics, Nature Physics, Physical Review Letters, Physical Review X, Nature Communications, Advanced Materials, ACS Nano and Light Science & Applications.*

