Department of Physics
Condensed Matter Physics
Clarendon Laboratory, Parks Road, Oxford OX1 3PU

UNIVERSITY OF OXFORD

CONDENSED MATTER PHYSICS SPECIAL SEMINAR

Thursday 9 July at 14:30
Simpkins Lee Seminar Room, Department of Physics
(https://maps.app.goo.gl/WjG71uLF2D48n85B6)

Beam shaping and polarisation control of THz waves with metasurfaces

Professor Ilya Shadrivov
Australian National University

Efficient polarisation control in the terahertz frequency range is required for many applications, including material characterisation, imaging, and polarimetry. In this presentation, we will provide an overview of our recent developments in metal-based and dielectric gratings that enable polarisation control in the terahertz regime. For metallic gratings acting as linear polarisers, we investigate the effect of wire geometry on the achievable transmission and extinction ratio. We further demonstrate quarter-wave plates based on high-index dielectric gratings and metallic metasurfaces. Finally, we present a translationally invariant metasurface capable of generating circularly polarised vortex beams.

Host: Professor Michael Johnston