



PETER LEE

PROFESSOR OF MATERIALS SCIENCE



PETER LEE | UNIVERSITY COLLEGE LONDON

Professor Lee studies Materials Design and Advanced Manufacturing, with a particular focus on the x-ray imaging and computational simulation of materials at a microstructural level. He has pioneered the development of in situ and operando techniques, enabling the design of new materials for processes ranging from the additive manufacturing of aeroengine components to making ice cream.

He also pioneered multi-scale and through process modelling (now termed Integrated Computational Materials Engineering or ICME), working with companies such as Rolls-Royce, Ford and Unilever.

Being based in the Research Complex at Harwell, his group focusses on developing nano-precision rigs that simulate the processing of materials on a synchrotron beamline, enabling us to see inside materials in 3D as they change in time (termed 4D imaging). This work is revealing how microstructures evolve in aerospace and automotive materials, as well as biological and geological systems. The resulting insights and open-source codes (including uMatIC, which simulates three phase flow to predict solidification microstructures) have been exploited internationally by aerospace, automotive, energy and biomedical companies to solve important engineering challenges – from developing additive manufactured human joint replacements to producing light-alloy automotive components.