

Inaugural Lecture Professor Mayank Jain

Geophotonics: Tracing Landscapes Through Time

May 16th, 2025, 14:30-17:00 Building 101 - Meeting Room 1, 1st Floor



Abstract

Earth surface processes shape landscapes, disperse nutrients, and influence climate and ecosystems. Quantifying the rates of these processes is fundamental to understanding and predicting landscape evolution, yet measuring them across decadal to millennial time scales remains a major challenge. The resulting knowledge gap introduces biases in our understanding of how Earth's surface has evolved in its recent past, limiting our ability to develop technologies for sustainable land use and resource management in a rapidly changing world. This inaugural lecture will highlight the potential of luminescence physics to provide unprecedented quantitative measurements of Earth surface process rates through a new understanding of the charge transport mechanisms that record these rates in natural minerals.

Mayank Jain is a newly appointed Professor of Luminescence Physics and Applications in Earth Sciences. He holds an MSc degree in Applied Geology (1995) and a PhD in interdisciplinary Quaternary research (2001) from University of Delhi. Mayank has pioneered several breakthroughs in luminescence geochronology and solid-state dosimetry, advancing the field through fundamental research on optically active defects in crystals, innovative instrumentation, and charge transport modelling.



At DTU, Mayank has secured significant external research funding, including large grants from the European Research Council (ERC advanced) and the European Space Agency. He is currently the Head of the Section for Luminescence Physics and Technologies at DTU Physics. He also serves as Senior Associate Editor of Radiation Measurements, amongst other editorial roles.

