

HKIAS Distinguished Lecture Series

Materials that move faster than light

Professor Sir John Pendry

Imperial College London
HKIAS Senior Fellow



Date: 23 October 2024 (Wednesday)

Time: 11:00am-12:00nn

Venue: HKIAS Lecture Theatre,
LG/F, Academic Exchange Building, City University of Hong Kong

Abstract Einstein's theory of relatively sets a limit to the speed of an object: no faster than light. But there is more than one sort of motion: here we are concerned with virtual motion where a material changes its properties in time but nothing materials moves: think of a wave on the ocean which moves but without transporting any water.

When things move that fast they strongly influence the way light moves through them. They break time reversal symmetry, they can capture light and amplify it, they can spontaneously emit radiation. I shall talk about the theory behind these processes and review the current state of experiments that are realising this vision.

Biography John Pendry is known for his work on metamaterials, electromagnetic materials that owe their properties more to their internal micro-structure, than to their chemical composition. He has worked at Imperial College London since 1981 where he served as Dean, Head of Physics, and Principal Faculty of Physical Sciences. He is a Fellow of the Royal Society, Foreign Associate of the US Academy of Sciences, and a Foreign Member of the Norwegian Academy of Sciences. Amongst his several awards are the UNESCO Niels Bohr Gold Medal, the Kavli prize for nanotechnology, the Dan David Prize for nanotechnology, and the Kyoto Prize laureate in Advanced Technology.

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