



Indian Institute of Technology Kharagpur Cryogenic Engineering Centre



An SGRIP Lecture series on

Applied Superconductivity and Quantum Technologies

March 10-13, 2025

by

Prof. Christopher Bell

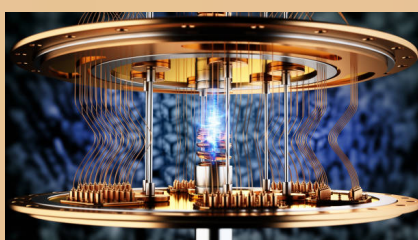
School of Physics, University of Bristol, United Kingdom



"Superconductivity is more than 100 years old and is a macroscopic quantum phenomenon in which electrons in a solid can flow without electrical resistance. Because of the quantum phase coherence in the material, superconductors can be used to create a range of devices with unique properties. Central among these devices is the Josephson junction, a quantum device used in an array of applications, from defining the volt, measuring tiny magnetic fluxes in the brain, to creating state of the art quantum computers."

"In this series of lectures, I will build up from the basics of superconductivity to the current uses of superconducting junctions, as well as mentioning some more recent ideas about using superconductivity for efficient conventional computing"

Dr. Bell has been at the University of Bristol since 2013. His research career for the last 25 years has been focused on various aspects of superconductivity, from fundamental physics to devices, especially using thin films and nanofabrication techniques. He has published over 100 papers and is particularly interested in devices combining superconductors and magnetic materials. He has worked in a range of locations around the world, from Cambridge, UK to Leiden, Netherlands (the home of superconductivity) as well as at the Universities of Tokyo and Stanford (USA)



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**Gargi Seminar Room,
Vikramshila, IIT Kharagpur**



5 PM -7 PM

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* Online Google meet link will be provided for students outside IIT Kharagpur