



Keynote Speaker 1

Materials for the Future

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Short Abstract:

Graphene and 2D materials, despite being relatively fresh materials, have already taken a firm place in research, development and applications. A number of exciting phenomena have been discovered in these crystals and they continue bringing exciting results on a regular basis. However, probably the most important characteristic about 2D materials is that they offer a possibility to form on-demand van der Waals heterostructures, where individual 2D crystals are stacked together, forming a novel, 3D structure, whose composition (and thus, their properties) can be controlled with atomic precision. This has opened new directions of research of materials on demand. Furthermore, since individual components in such heterostructures interact through a number of channels (elastic, van der Waals, electronic, etc.) – a degenerate energy landscape is formed, leading to a number of competing phases, which opens a way to engineer particular phase transitions between different states and, thus, study also the out-of-equilibrium phenomena in such structures.

Short Bio:

Prof Sir Konstantin ‘Kostya’ Novoselov FRS was born in Russia in August 1974. He has both British and Russian citizenship. He is best known for isolating graphene at The University of Manchester in 2004, and is an expert in condensed matter physics, mesoscopic physics and nanotechnology. Every year since 2014 Kostya Novoselov is included in the list of the most highly cited researchers in the world. He was awarded the Nobel Prize for Physics in 2010 for his achievements with graphene. Kostya holds positions of Langworthy Professor of Physics and the Royal Society Research Professor at The University of Manchester.

He graduated from the Moscow Institute of Physics and Technology, and undertook his PhD studies at the University of Nijmegen in the Netherlands before moving to The University of Manchester in 2001. Professor Novoselov has published more than 250 peer-reviewed research papers. He was awarded with numerous prizes, including Nicholas Kurti Prize (2007), International Union of Pure and Applied Science Prize (2008), MIT Technology Review young innovator (2008), Europhysics Prize (2008), Bragg Lecture Prize from the Union of Crystallography (2011), the Kohn Award Lecture (2012), Leverhulme Medal from the Royal Society (2013), Onsager medal (2014), Carbon medal (2016), Dalton medal (2016) among many others. He was knighted in the 2012 New Year Honours.