FLEET
ARC CENTRE OF EXCELLENCE IN FUTURE LOW-ENERGY ELECTRONICS TECHNOLOGIES

Monash Centre for Atomically Thin Materials

FLEET & MCATM SEMINAR

Capacitive pressure and touch sensors with suspended graphene-polymer heterostructure membranes

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Abstract: Single layer chemical vapor deposited (CVD) graphene has shown great promise in enabling Micro and Nano-electromechanical Systems (MEMS/NEMS) that can outperform current state of the art. However, existing methods in forming single layer graphene electromechanical devices result in low yields during the graphene device fabrication process and the resulting membranes often suffer from a distorted topography and poor device reproducibility.

I will present the fabrication and characterization of a suspended graphene/polymer heterostructure membrane that aims to tackle the prevailing challenge of constructing high yield, environmentally robust suspended graphene devices whilst preserving the mechanical and electronics properties. Further, I will describe the fabrication and characterization of capacitive pressure sensors formed by such heterostructures and present the operation of these devices as air pressure, water pressure and force-touch sensors.

About the Speaker: ***Dr Aravind Vijayaraghavan*** is a Reader in Nanomaterials in the School of Materials and the National Graphene Institute at The University of Manchester. He leads the Nano-functional Materials Group and his research involves the science and technology of graphene and 2-dimensional materials, particularly for applications in composites, sensors and biotechnology.

He has published over 70 papers in international peer reviewed journals and delivered over 60 presentations at international conferences. Dr. Vijayaraghavan is also a leader in public engagement and science communication and won the 2013 Joshua Phillips Award for Innovation in Science Engagement and was Science Communicator in Residence at the 2013 Manchester Science Festival.

DATE: Thursday 5 April 2018
TIME: 11:00AM–12:00midday
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