



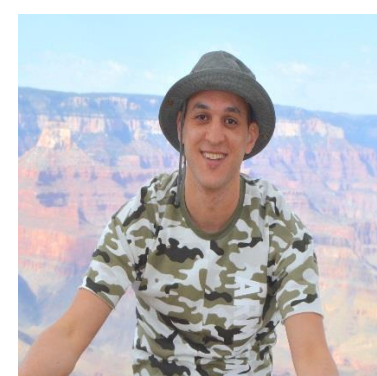
**Title**  
**Presenter**  
**Supervisor(s)**  
**Time & Venue**

**Advanced 2D Materials for Novel Electronic and Photonic Applications**

**Ibrahim Abdel Wahab**

**Professor Loh Kian Ping (NUS)**  
**Professor Stefan Maier (Imperial College)**

**Wednesday, 1 November 2017, 3pm – 4pm**  
**NGS Multi-Purpose Room (MPR)**  
**Centre for Life Sciences (CeLS), Level 1**



### **Abstract**

Two dimensional (2D) materials of which graphene is the most famous, are a class of nanomaterials with a thickness of a few nanometers or less. 2D materials have shown outstanding properties that differ from their bulk counterparts and are expected to lead to revolutionary applications in electronics, photonics, energy harvesting, chemistry, mechanics, etc. In this talk I will first review the general properties, applications and synthesis methods of 2D materials. Next, I will present our latest research efforts to explore several 2D materials beyond graphene, including 2D perovskites, transition metal dichalcogenides (TMDs) and black phosphorus. Using state-of-the-art characterization techniques, the electronic and optical properties of these materials have been deeply investigated in our labs. The results so far have revealed remarkable properties of these 2D materials making them exceptionally excellent candidates for novel quantum devices and linear/nonlinear optical applications.