



HiLASE Centre is pleased to invite you to attend the seminar:

Laser-Induced Forward-Transfer; Printing of 2D nanomaterials

Dr. Nathan Goodfriend

Laser-induced forward-transfer (LIFT) is a printing technique that has advanced from printing of liquefied metal nanodroplets and gel suspension to fragile objects such as living cells. The work presented in this seminar will be on the adaptation of this technique to allow the direct write printing of 2D materials such as graphene (conductor), hexagonal Boron Nitride (insulator) and a variety of transition metal dichalcogenides (bandgap semiconductors). These 2D materials are under intense scrutiny as components in sensors, diodes, transistors, optoelectronics and a long list of other potential applications alongside studies of fundamental physics. A major source of difficulty amongst this research is precise, clean, and gentle positioning in a reproducible manner. Therefore, we worked with two world-renowned universities to overcome this obstacle. In collaboration with Nagoya University we researched 2D material growth direct to the LIFT transfer substrate alongside current methodologies. Whilst at the University of Edinburgh we developed novel transfer substrates and conducted some initial transfer experiments with variation in transfer and receiver substrate separation distance and laser pulse duration. This work has shown initial success and provided a path forward for further research into the application of this technique.

When: Tuesday, **18/02/2020 at 14:00** Where: Seminar room, HiLASE Centre









