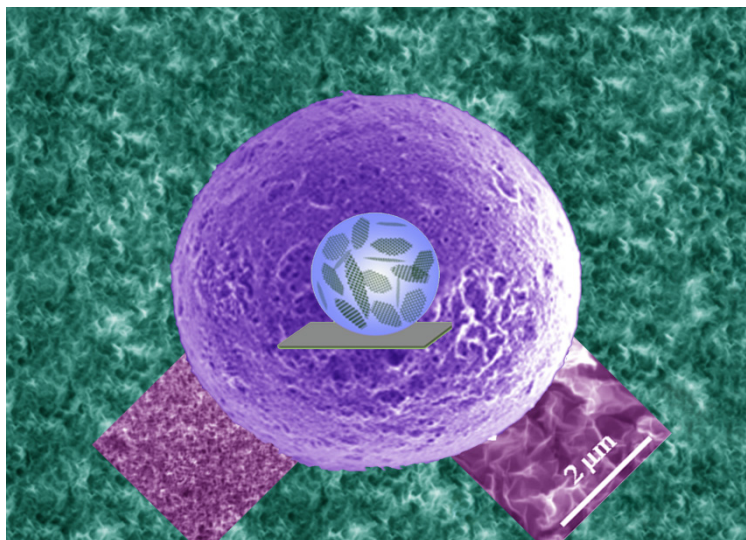


Engineering nanosheet-based novel structures



Snowball-like structures of self-assembled graphene oxide

Supervisors: Dr Xuehua Zhang (University of Melbourne)

Dual PhD option: It is possible to conduct part of the PhD thesis at University of Kyoto in Japan

Project description: The significant feature of two-dimensional nanosheets, which enables their wide-ranging applications, is their extremely large surface area. Solution processing of nanosheets is a low-cost and scalable method, which also permits facile functionalisation. The main challenge is to maintain the large surface area while preparing their dry structures. This project aims to understand and control the morphology and assembly of nanosheets and to develop novel processes for the production of their dry forms. The engineered novel structures have potential applications for sensing, catalysis, gas separation, and energy harvesting and storage.

Student performance requirement: GPA of 8.5/10 or better. Applicants must belong to the top 25% of the student cohort.

Please note: the applicant must discuss with the nominated supervisors before finalising the project proposal to be submitted to the University of Melbourne. This proposal is dedicated to IIT Kanpur educated students only. The scholarship covers tuition and living expenses to work on the project. Applicants are not required to do any teaching. Duration of the PhD is 3-3.5 years and applicants can be admitted to the PhD candidature after the completion of a Masters degree or 4 year Bachelors degree from IIT Kanpur.

Rankings: The Melbourne School of Engineering is Australia's No. 1 engineering and technology school and No. 25 in the world.*

Website: www.eng.unimelb.edu.au