



Department of Materials Science and Engineering Seminar Series 2023

FUNCTIONAL COMPOSITES BASED ON GRAPHENE OXIDE AND MACROMOLECULES FOR SMART MEMBRANES AND SCAFFOLDS

Chen Siyu

Date and time: 05 Dec 2023, Friday at 12:30 pm

Venue: S9 L9 meeting room

Abstract

Functional composites based on 2D materials, especially graphene oxide (GO), have gained enormous attention in recent years due to their superior properties, such as tailored structures and functions, mechanical robustness, large surface area, and responsiveness toward environmental stimuli. The functional GO composite can be assembled in the 2D membrane or 3D scaffold structures depending on the application features. The ease and variety of surface modification for GO composites make these functional materials have been explored extensively in separation membrane technology, biomedical engineering, and wearable sensors. However, there still exist many concerns in the aspects of permeability-selectivity trade-off, long-term stability, and controllable microstructure when designing different structures of functional composites based on GO. This work aims to develop functional composites based on GO and macromolecules and dive into the mechanism to address the encountered problems in the fields of separation membrane technologies and sensors.

Biography

Chen Siyu received her B. Sc degree from Soochow University in 2019. She is currently a Ph.D. candidate under the supervision of Assoc. Prof. Daria Andreeva-Baeumler and Prof. Sir Konstantin Sergeevich Novoselov. Her research focuses on the design of functional membranes and scaffolds based on 2D materials for diverse applications.

Please join us!

HOST: Prof. Ding Jun