



BAMI Seminar – July 2016

Zhiyong He, PhD Student, BioPRIA/Department of Chemical Engineering

Friday 29th July 2016, 12.30PM to 1.30PM

Room G03, BioPRIA, 15 Alliance Lane (Building 59), Clayton Campus

Moderator: Llyza Mendoza, PhD Student, BioPRIA/Department of Chemical Engineering Monash University

Oil/water separation using cellulose hydrogel

Abstract:

Separating oil/water emulsion is of worldwide urgency due to frequent oil spills and increasing oil pollution from the industrial wastewater. A number of technologies have been developed for oil/water separation. However, many of these technologies are costly to operate, difficult to scale, and most importantly not environmental friendly. The aim of this research is to develop a strategy for oil/water separation using environmentally friendly, renewable material. In the first stage of this research, a cellulose nanofiber aerogel filter has been fabricated and showed excellent separation efficiency to both oil/water mixture and oil/water surfactant-free emulsion. However, this filter was not suitable for oil/water surfactant-stabilized emulsion due to its relatively large pore sizes within the structure. Therefore, there is still room for improvement, which leads to further studies. A cellulose aerogel with double layer was developed to address this challenge. It was fabricated by simply filtering dilute cellulose suspension through the prepared cellulose aerogel aforementioned. This presentation reviews the current progress of this study, including characterization of the aerogel structure, fabrication method, performance testing results and proposed mechanism. In addition, future work will be discussed.

Presentation and Q&A session will be from 12.30PM – 1.00PM. Lunch will be served at 1.00PM.

Enquires: BAMI Student Chapter coordinators Anurag Parihar or Jinhua Dai.