



2016 Rheology Lecture Series

In 2016 the Australian Society of Rheology is presenting a national series of lectures, which is open to anyone interested in the flow and deformation of matter. The next lecture in the series will be held in Sydney.

Calendar details

Date:	Monday, 11 April 2016
Time:	17:30 to 19:00
Venue:	The University of Sydney <i>School of Aerospace, Mechanical and Mechatronic Engineering</i> <i>Building J07, Ground Level, Mechanical Engineering Lecture Theatre (see map)</i>

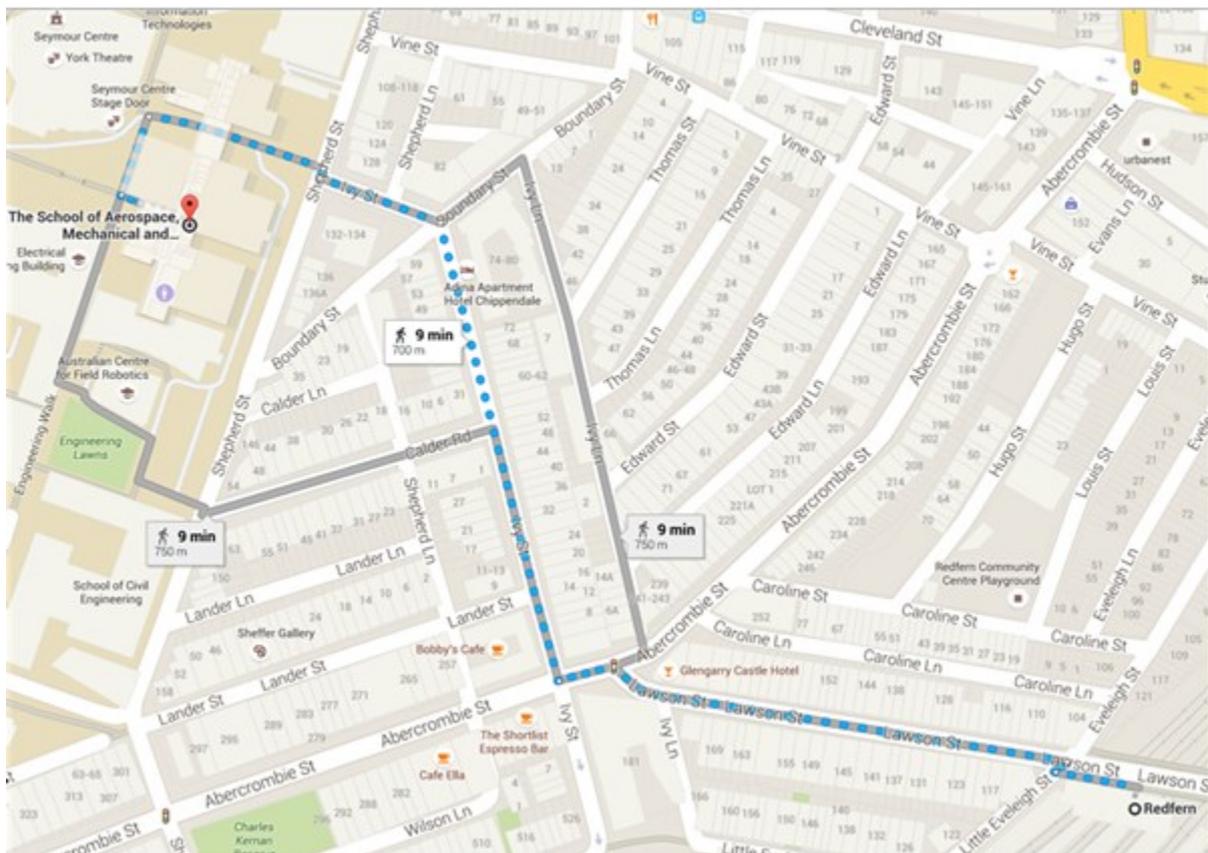
Seminars

Ms. Jasmine Pour (Duromer Products Pty. Ltd.)

“Microstructure and Rheology of Reinforced Nylon 6”

Dr. Pierre Rognon (School of Civil Engineering, The University of Sydney)

“How rheology can help mitigating landslide and snow avalanche hazards”





Seminar 1:

Ms. Jasmine Pour (Duromer Products Pty. Ltd.)

“Microstructure and Rheology of Reinforced Nylon 6”

Relationships between the rheological and mechanical properties of Nylon 6/Wollastonite were examined. The aim of this study was to determine the optimum twin-screw extruder operational conditions to achieve desired mechanical properties controlled by Microstructure. The results showed that the operational conditions had a strong influence on final properties of the composite, which were attributed to mineral features and aspect ratio before and after compounding and, also, the existence of hindered polymer chains and the physical co-continuous structure formed between particles. The observed low frequency liquid-like to solid-like transition and apparent yield stress in simple shear flows, along with nonzero values in stress relaxation after the cessation of flow experiments, were found to be consistent with formation of a physical network in quiescent conditions.

Speaker's biography:

Ms. Jasmine Pour is a Polymer Engineer with experience across a number of research and manufacturing sections. She obtained a Master of Science in Polymer Engineering from Amirkabir University of Technology - Tehran Polytechnic, and received an Iran President student award for her novel research, which resulted in several publications, along with a dissertation on nanocomposites.

Ms. Pour has worked as the Product Development Manager at Duromer Products for 6 years. Duromer Products was established in Sydney in 1988, and manufactures and distributes a range of Nylon 6 and PET engineering plastics, as well as of long-fibre thermoplastics, in Australia, New Zealand, and other defined markets.

Seminar 2:

Dr. Pierre Rognon (School of Civil Engineering, The University of Sydney)

“How rheology can help mitigating landslide and snow avalanche hazards”

How does soil and snow flow? Answering this question is essential to predict landslide and snow avalanche pathways, and thus to mitigate these hazards effectively.

This talk will introduce some key rheological properties of flowing soils and snow avalanches observed in field experiments, laboratory experiments and DEM simulations that I have been conducting over the last ten years. The discussion will focus on establishing constitutive models capable of capturing and predicting these properties, and on the crucial role played by the granular microstructure of these materials.

Speaker's biography:

Dr. Pierre Rognon is a Senior Lecturer in the School of Civil Engineering at The University of Sydney. Dr. Rognon discovered mountains as a boy, hiking and skiing in the French Alps, and developed a fascination with avalanches. He obtained a Ph.D. from École Nationale des Ponts et Chaussées in France, with an award-winning thesis entitled “Rhéologie des matériaux granulaires cohésifs — application aux avalanches de neige dense” [Rheology of cohesive granular materials — application to dense-snow avalanches].