

Pharmacy

Department Seminar

Date: 2nd October
2017

Time: 5pm

Venue: S4A Level 3
Room A & B

MECHANISTIC STUDY ON THE INFLUENCE OF POLYMERS ON DRUG CRYSTALLIZATION INHIBITION AND SUPERSATURATION MAINTENANCE



Hong Shiqi graduated with a Bachelor degree (Hons.) in Applied Chemistry from the National University of Singapore. She has worked in the pharmaceutical industry for the past 9 years in the area of formulation sciences and analytical chemistry. She further persuaded her research interest by pursuing a part-time Ph.D. under the supervision of A/P Chan Lai Wah. Her research focuses on the mechanistic investigation into the effect polymer on the maintenance of supersaturation during drug release from amorphous solid dispersions.

Formulation of active pharmaceutical ingredients (API) in amorphous forms is a common strategy to enhance apparent solubility, dissolution rate and, consequently, oral bioavailability of poorly water-soluble drugs. Amorphous APIs are, however, thermodynamically unstable relative to the crystal form. To prevent crystallization of the amorphous phase, polymers are usually incorporated into the matrix to stabilize the amorphous form and also to serve as crystallization inhibitors during dissolution. However, there is a lack of fundamental understanding on the mechanisms behind crystallization inhibition. Currently, selection of crystallization inhibitors for amorphous solid dispersions remains largely empirical. Therefore, this project aims to gain a better fundamental understanding of the important contributing factors that govern the crystallization inhibition properties of polymers and to develop a predictive tool using appropriate parameters for the selection of polymers used in the development of amorphous solid dispersions.