## PhD Project: Complete

## **Freeze-Thaw PVA Hydrogels**

PhD Candidate: Bor Shin Chee

## Development of novel freeze-thawing poly (vinyl alcohol) hydrogels for biomedical applications

Dr. Bor Shin Chee investigated the physically cross-linked polyvinyl alcohol (PVA) hydrogels with different sizes range from centi- to micro- to nano- meter in macroscopic, microscopic and nanoscopic viewpoint for drug delivery applications. Water-soluble drugs and poorly water-soluble drugs were incorporated into these PVA hydrogels to study their drug release kinetics for wound healing application and cancer treatment. One significant success in this project is the utilization of electrospinning technology to fabricate nanofibers with a high surface area, which facilitate a more controlled and sustained release of the pharmaceutical components. All these novel hydrogels have the potential to be produced as new commercialise products in biomedical area mainly in drug delivery applications. This is due to their tunable hydrogel preparation process, intrinsic biocompatible and non-toxic characteristics.