

**NUS Graduate School for Integrative Sciences and Engineering
Research Project Write-up**

Title of Project : **Membranes for protein purification and separation**

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Short Description

Protein purification from a fermentation broth is in high demand. However, protein separation is a difficult process due to the complexity of proteins selves and their biological environments. To obtain a completely purified protein, many separation processes have been developed based on different protein properties, and they include chromatography, electrodialysis, electrophoresis, membrane chromatography and ultrafiltration. Ultrafiltration has become a preferred method due to its lower capital cost and steady-state operation, which allow an efficient transfer to the large-scale operation. Ultrafiltration membranes for the protein separation are in an infant stage because of the lack of optimal process design and suitable membrane materials with the desirable pore size, transport surface area and separation performance. Therefore, we aim to study the science and develop UF membranes for protein separation.