

[Professor Michael Yu](#)

Silica biomaterial for dental treatment

Project duration: Masters Coursework Project (26 weeks).

Description:

Silica nanomaterials has been widely used in biomedical application due to their excellent biocompatibility, tuneable structure, easily functionalization, etc. The application of silica nanomaterials in dental treatment (e.g. hypersensitivity treatment) has great value in both clinic and industry.

Learning Objectives:

Elisa, nanomaterial synthesis, FTIR, nitrogen adsorption, DLS, data analysis, academic writing

Expected outcomes and deliverables:

Scholars may gain skills in data collection, data analysis, academic writing, experience on industrial collaboration and have an opportunity to generate publications from their research. Students may also be asked to produce a report or oral presentation at the end of their project.

Applicant Requirements:

This project is open to applications from students with a background in chemistry or biological or medical or pharmacy, master or honours students.

Primary Supervisor:

Dr. Chang Lei and Prof. Chengzhong Yu

A Nano-platform for Affordable and Ultra-sensitive Bio-marker Detection

Project duration: Masters Coursework Project (26 weeks).

Description:

Biomolecules with clinical significance are most often various forms of proteins or peptides at very low concentrations in biological systems. Quantitative analysis of them is a big challenge due to the complexity of bio-samples, but essential for diagnosis and clinical applications. In this project, we focus on developing novel approaches for the sensitive detection of trace amount biomolecules using state-of-the-art nanotechnology.

Learning Objectives:

Elisa, nanomaterial synthesis, FTIR, nitrogen adsorption, DLS, mass spectrometry, data analysis, academic writing

Expected outcomes and deliverables:

Scholars may gain skills in data collection, data analysis, academic writing, experience on industrial collaboration and have an opportunity to generate publications from their research. Students may also be asked to produce a report or oral presentation at the end of their project.

Applicant Requirements:

This project is open to applications from students with a background in chemistry or biological or medical or pharmacy, master or honours students.

Primary Supervisor:

Dr. Chang Lei and Prof. Chengzhong Yu