SOPHIA CHAN

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EDUCATION

Singapore University of Technology and Design
Doctor of Philosophy (Science and Math Cluster), GPA: 4.67/5.00 — Jan 2017 – Present

The University of Edinburgh
Master's of Science (Chemistry with Industrial Experience), First Class Honours — Sep 2011 – Jun 2016

RESEARCH EXPERIENCE

Singapore University of Technology and Design, Singapore
PhD Research — Jan 2017 – Present

- Led a team of 4 to harness conductive nanomaterials and conventional electrical methods to selectively detect and efficiently treat cells for 4 separate projects
- Condensed research findings into 3 conference presentations and 2 published peer-review manuscripts and 2 manuscripts under review
- Established and maintained 3 different cell lines, analysing results with 99% accuracy
- Collaborated with 5 lab members to creatively design and execute experiments while complying with safety regulations, and consolidated insights into 1 published peer-review manuscripts, 1 conference presentation and 3 manuscripts under review
- Managed and acquired laboratory chemicals and consumables with 3 other lab members

A*STAR (Bioinformatics Institute), Singapore
PhD Research Project — Sep 2017 – Dec 2017

- Collaborated as a team of 3 to design a molecular dynamics simulation protocol to understand the molecular interactions between 2D materials and different lipid bilayers
- Results were consolidated into 2 published peer-review manuscripts and 1 manuscript under review
- Learned and utilised GROMACS and visual molecular dynamics (VMD) software to analyse the interactions

University of Edinburgh, Scotland, UK
Master's Research Project — Sep 2015 – Feb 2016

- Conceptualised a new experimental protocol to synthesise an organic ligand for pH-stable supramolecular cages for drug delivery
- Partnered with a team of 4 researchers to analyse the ligand and troubleshoot the experimental protocol
- Experimental protocol and insights were submitted as a Master's Thesis

Nippon Telegraph and Telecommunications (NTT) Basic Research Laboratories, Japan
Internship Project — Jun 2014 – Jun 2015

- Collaborated with a team of 6 Japanese and English speaking researchers to analyse artificial lipid behaviour to realise a neural lab-on-chip device
- Findings were consolidated into a submitted Project Report

SELECTED PUBLICATIONS

Chan, S. S. Y. Chan, Lee, D., Meivita, M. P., Li, L., Tan, Y. S., Bajalovic, N., Loke, D. K., Ultrasensitive Two-Dimensional Material-Based MCF-7 Cancer Cell Sensor Driven By Perturbation Processes, *Nanoscale Adv.,* **3**, 6974-6983 (2021)

Chan, S. S. Y. Chan, Tan, Y. S., Wu, K. X., Cheung, C., D. K., Ultra-High Signal Detection of Human Embryonic Stem Cells Driven by Two-Dimensional Materials, *ACS Appl. Bio Mater,* **1**, 210-215 (2018)

SELECTED CONFERENCES

Chan, S. S. Y. Chan, Lee, D., Meivita, M. P., Li, L., Tan, Y. S., Cheung, C., Bajalovic, N., Loke, D. K., Highly Sensitive One-dimensional Material-based Biosensor for Residual Cancer Cell Detection, *2021 MRS Fall Meeting and Exhibit,* Boston, MA, USA/Virtual, Dec 2021

Chan, S. S. Y., The Road Towards Safer Stem Cell Therapies, *Research Fest 2019,* Singapore SG, Jan 2019

Chan, S. S. Y. Chan, Tan, Y. S., Wu, K. X., Cheung, C., Loke, D. K., Two-dimensional Materials that Enhance Human Embryonic Stem Cell-signal Detection, *ACS Spring 2019 National Meeting and Exposition,* Orlando, FL USA, Apr 2019

SCHOLARSHIPS AND AWARDS

Best Flash Talk, Research Fest (Top speaker for a 3 min presentation out of 20 participants) — 2019
Rigel Technology Graduate Research Competition Award, FIRST Industry Workshop (Top 10 posters presented) — 2017
President's Graduate Fellowship, SUTD (Limited scholarships awarded annually) — 2017
Best International Student Award, University of Edinburgh (Top 2 students of the cohort) — 2016

SKILLS

Cell culture (stem cells, cancer cells), material fabrication and characterisation, electrical characterisation, conductive polymer film fabrication, analytical techniques (SEM, UV-vis spectra, FTIR, immunostaining, cell viability assays), data analysis, Python3, GROMACS, visual molecular dynamics (VMD), teaching, MS office and computer literate, good presentation skills, lab maintenance and management, mentoring