SOPHIA CHAN

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PROFILE

Singaporean PhD graduate with a strong background in chemistry and biochemistry fields focused on improving biosensor sensitivity and therapeutic efficiency. Extensive experience in integrating highly specialised fields such as chemistry, biology and bioinformatics for multidisciplinary research projects.

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 4 research projects to improve the detection of cancer cells with high sensitivity, resolving issues and providing creative solutions
- Condensed and organised research findings into weekly progress reports, 2 first-author peer-reviewed manuscripts and presented our work at 3 international conferences
- Maintained mammalian cell lines and creatively developed and executed experimental protocols, and analysed results with 99% accuracy, while keeping accurate and detailed documentation and complying with health and safety regulations
- Trained and guided 2 junior PhD candidates and proactively collaborated with internal and external researchers in different research fields
- Managed the lab and kept detailed records of inventory (chemicals and consumables)

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

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

University of Edinburgh (Lusby Group), 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 and improve the 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 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 (Word, Excel, Powerpoint) and computer literate, good presentation skills, lab maintenance, lab management and organisation, mentoring, highly motivated