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, bioengineering and bioinformatics for multi-disciplinary research projects.

EDUCATION

Singapore University of Technology and Design
Doctor of Philosophy (Science and Math Cluster), GPA: 4.67/5.00 — Jan 2017 – Jan 2022

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

EXPERIENCE

NovogeneAIT, Singapore
Scientific Application Specialist — Mar 2021 – *Present*

- Responsible for processing customer samples on and off site, and validating new methods of DNA and RNA extraction
- Communicating, contributing and collaborating with Marketing and Sales departments locally and globally to increase revenue and awareness of services
- Kept detailed records of experimental protocols and inventory

Singapore University of Technology and Design, Singapore
PhD Research — Jan 2017 – Jan 2022

- Led 4 research projects concurrently to develop a sensitive electrical-based cancer biosensor, identifying and optimising issues by adopting creative solutions within tight deadlines
- Consolidated and organised research findings into internal weekly progress reports, 2 first-author peer-reviewed manuscripts and communicating research work at 3 international conferences
- Maintained various mammalian cell cultures, developed experimental protocols, analysed results with 99% accuracy, while keeping accurate records and complying with health and safety regulations
- Supervised 2 junior PhD candidates, contributed to and supported internal projects and collaborated with external researchers across different fields
- Managed and maintained lab equipment and consumables, updating records of inventory in a detailed manner

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

- Designed and developed a new 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, troubleshooting issues to 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 multi-functional 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, Go, S. X., Meivita, M. P., Lee, D., Bajalovic, N., Loke, D. K., Ultra-efficient highly-selective MCF-7 cancer cell therapy enabled by combined electric-pulse carbon 1D-nanomaterials platforms, *Mater. Adv.,* (2022) DOI: 10.1039/D1MA01118A

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 8 posters out of 58 posters) — 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

Experimental: Mammalian cell culture (stem cells, cancer cells, epithelial cells), nanomaterial fabrication and characterisation (SEM, UV-vis spectra, FTIR, IR), electrical characterisation, conductive polymer film fabrication, analytical characterisation (immunostaining, cell viability assays),
Computational: Data analysis, Python3, GROMACS, visual molecular dynamics (VMD), modelling, MS Office (Word, Excel, Powerpoint) and computer literate,
General: Scientific writing, scientific presentation, good presentation skills, lab maintenance, management and organisation, teaching, mentoring, highly motivated, great collaborator, multi-task