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| Name | Saw Thuan Beng, PhD  Principal Investigator, Westlake University | Address | No. 600 Dunyu Road, Sandun Town,Xihu District, Hangzhou, Zhejiang PR China |
| Email | sawtb@westlake.edu.cn | Telephone | (+86) 13646849652 |

**Academic Appointment**

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| Westlake University, China  *Assistant Professor of School of Life Sciences*  *Associate Faculty of School of Engineering, Biomedical Engineering* | 2022 - present |
| National University of Singapore  *Research A*ssistant *Professor of Department of Biomedical Engineering* | 2021 - 2022 |

**Education/Training**

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| --- | --- |
| National University of Singapore (NUS)  *Lee Kuan Yew Fellow (postdoctoral)* | 2018 - 2022 |
| National University of Singapore (NUS)  *PhD in Graduate School for Integrative Sciences and Engineering (NGS)*  *Supervisors: Benoit Ladoux, Chwee Teck Lim* | 2013 - 2017 |
| National University of Singapore (NUS) & Ecole Polytechnique, France  *Double degree, BSc/Master’s in Physics, Ingénieur* | 2008 - 2013 |

**Awards/Honors**

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| Lee Kuan Yew Postdoctoral Fellowship, NUS, Singapore | 2018 |
| Wang Gungwu Medal and Prize, best thesis in Natural Sciences, NUS, Singapore | 2018 |
| Chua Toh Hua Memorial Gold Medal, best thesis in Life Sciences, NUS, Singapore | 2018 |
| Yamaguchi Medal, Asian-Pacific Association for Biomechanics | 2018 |
| Outstanding Poster Award, Biophysical Journal, Mechanobiology of Disease Conference, Singapore | 2016 |
| NGS PhD Scholarship, Singapore | 2013 - 2017 |
| Eiffel Scholarship, France | 2010 - 2012 |
| Outstanding Undergraduate Research Prize (OURP, Best Group), NUS, Singapore | 2010 |
| Dean’s List, Science Faculty, NUS, Singapore | 2009 |
| ASEAN Scholarship, NUS, Singapore | 2008 - 2012 |

**Teaching/Mentoring**

*Lectures*

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| Guest Lecturer, Ecole Polytechnique Invitation by Prof. Abdul Barakat, Bioengineering Fluids Course | 2022 |
| Guest Lecturer, DY Patil International University, Pune India, Invitation by Dr. Surabhi Sonam, Biological Physics Course | 2020 |
| Guest lecturer, NUS graduate course (MB5102)  Section on mechanobiology of epithelial tissues  Student feedback: 4.4 / 5 (overall faculty mark: 4.40.7, meanSD) | 2020 |
| Invited speaker, NUS course (GS5002) opening workshop | 2018, 2019 |

*Postdoctoral Fellow*

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| Muchun Li, PhD | 2022 - present |

*PhD*

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| Ping Xu, Changyi Shi | 2022 - present |

*Others*

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| Dingling Peng (School, Undergraduate Students (Visiting student))  Xinru Yu (School, Undergraduate Final Year Project)  Jialing Cheung (School, Undergraduate Final Year Project) | 2022 - present |
| 3 NUS High School students, 2 Final Year Project undergraduate students; Undergraduate research projects for Special Programme in Science, NUS (SP2171, SP3172) | 2013 – 2014  2019 - 2021 |

**Publications**

https://scholar.google.com.sg/citations?user=M46ycHAAAAAJ&hl=en

\*equal contributions, #corresponding authors

**Selected papers:**

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| --- | --- |
| Delanoë-Ayari, H., Hiraiwa, T., Marcq, P., Rieu, J. P., & **Saw, T. B.**. 2.5 D Traction Force Microscopy: Imaging three-dimensional cell forces at interfaces and biological applications. ***Int J Biochem Cell Biol***, *161*, p.106432. | 2023 |
| **Saw, T. B.\***,#, Gao, X. M.\*, …, Prost, J.#, Lim, C. T.,#, Transepithelial Potential Difference governs epithelial homeostasis through electromechanics. ***Nature Physics***, 18(9), pp.1122-1128. | 2022 |
| Teo, J.L., Lim, C.T., Yap, A.S. and **Saw, T.B.**#, A Biologist’s Guide to Traction Force Microscopy Using Polydimethylsiloxane Substrate for Two-Dimensional Cell Cultures. ***STAR protocols***, *1*(2), p.100098. | 2020 |
| Xi, W. \*, **Saw, T.B.** \*, Delacour, D., Lim, C.T. and Ladoux, B., Material approaches to active tissue mechanics. ***Nature Reviews Materials***, *4*(1), pp.23-44. | 2019 |
| **Saw, T.B.** \*, Xi, W. \*, Ladoux, B. and Lim, C.T., Biological tissues as active nematic liquid crystals. ***Advanced materials***, *30*(47), p.1802579. | 2018 |
| **Saw, T.B.** \*, Doostmohammadi, A. \*, …, Ladoux, B., Topological defects in epithelia govern cell death and extrusion. ***Nature***, *544*(7649), pp.212-216. | 2017 |
| Xi, W. \*, Sonam, S. \*, **Saw, T.B.** \*, Ladoux, B. and Lim, C.T., Emergent patterns of collective cell migration under tubular confinement. ***Nature communications***, *8*(1), pp.1-15. | 2017 |
| Kocgozlu, L. \*, **Saw, T.B.** \*, …, Ladoux, B., Epithelial cell packing induces distinct modes of cell extrusions. ***Current Biology***, *26*(21), pp.2942-2950. | 2016 |
| **Saw, T.B.**, Jain, S., Ladoux, B. and Lim, C.T., Mechanobiology of collective cell migration. ***Cellular and Molecular Bioengineering***, *8*(1), pp.3-13. | 2015 |

**Others:**

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| --- | --- |
| Glentis, A., Blanch-Mercader, C., Balasubramaniam, L., **Saw, T .B.,**…,Ladoux, B., The emergence of spontan-eous coordinated epithelial rotation on cylindrical curved surfaces. ***Science Advances*** 8 (37), eabn5406 | 2022 |
| Balasubramaniam, L., Doostmohammadi, A., **Saw, T. B.**, …, Ladoux, B., Investigating the nature of active forces in tissues reveals how contractile cells can form extensile monolayers. ***Nature Materials***, pp.1-11. | 2021 |
| Balasubramaniam, L., Doostmohammadi, A., **Saw, T.B.,** ..., Ladoux B., Nature of active forces in tissues: how contractile cells can form extensile monolayers. ***bioRxiv***, 2020.10. 28.358663 | 2020 |
| Liu, Y., Dong, X., Deng, X., **Saw, T.B.**, Lim, C.T., Liu, J. and Wang, W., January. Ultra-thin Parylene-C Deposition on PDMS. In ***2019 IEEE 32nd International Conference on Micro Electro Mechanical Systems (MEMS)*** (pp. 18-20). IEEE. | 2019 |
| Chen, T., **Saw, T.B.**, Mège, R.M. and Ladoux, B., Mechanical forces in cell monolayers. ***Journal of cell******science***, *131*(24). | 2018 |
| Doostmohammadi, A., Thampi, S.P., **Saw, T.B.**, Lim, C.T., Ladoux, B. and Yeomans, J.M., Celebrating Soft Matter's 10th Anniversary: Cell division: a source of active stress in cellular monolayers. ***Soft Matter***, *11*(37), pp.7328-7336. | 2015 |
| Ravasio, A., Le, A.P., **Saw, T.B.**, Tarle, V., Ong, H.T., Bertocchi, C., Mège, R.M., Lim, C.T., Gov, N.S. and Ladoux, B., Regulation of epithelial cell organization by tuning cell–substrate adhesion. ***Integrative******Biology***, *7*(10), pp.1228-1241. | 2015 |
| Mukhtar, M., Soh, W.T., **Saw, T.B.** and Gong, J., Protecting unknown two-qubit entangled states by nesting Uhrig’s dynamical decoupling sequences. ***Physical Review A***, *82*(5), p.052338. | 2010 |
| Mukhtar, M., **Saw, T.B.**, Soh, W.T. and Gong, J., Universal dynamical decoupling: Two-qubit states and beyond. ***Physical Review A***, *81*(1), p.012331. | 2010 |

**Funding**

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| Singapore MOE Tier 1 grant (180k sgd, 3 years)  *Electro-mechanical effects in epithelia homeostasis (My personal grant)* | 2018 –2021 |

**Invited Talks**

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| Invited speaker,The 13th National Conference on Soft Matter and Biological Physics, Xi’an, China (3/31-4/2) | 2024 |
| Invited speaker, Zhejiang University-University of Edinburgh Institute, China | 2023 |
| Invited speaker, Japan-Singapore Skin Webinar Series | 2021 |
| Invited speaker, Seminar, Department of Pharmacology, University of Melbourne, Australia | 2021 |
| Invited speaker, Fudan-Guanghua International Forum, Children’s Hospital Fudan University, China | 2020 |
| MBI international conference:  From Molecules to Organs, The Mechanobiology of Morphogenesis (selected short talk) | 2020 |
| Invited speaker, Singapore Microscopy Society AGM | 2019 |

**Service**

*University Service*

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| Biomedical Engineering Faculty Search Committee | 2022 - present |
| Life Sciences PhD Student Admission Committee | 2022 - present |

**Professional Activities**

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| Organizer, Westlake University International Workshop in Mechanobiology (Westlake University) | 2024 |
| Co-organizer, PEBBLE BioFusion Camp 2024 (Westlake Multidisciplinary Research Initiative Center, Westlake University) | 2024 |
| Co-organizer, international symposium (Materials, Mimics, and Microfluidics: Engineering Tools for Mechanobiology) | 2021 |
| Peer reviewer *(Molecular Biology of the Cell, Nature Physics, STAR protocols*, *Soft Matter)* | 2020 – present |
| Outreach: Talk at Malaysian high school, Chung Ling High School | 2018 |
| Special Program in Science (SPS, NUS) | 2008 – 2012 |