


CURRICULUM VITAE – DAN DANIEL

PERSONAL PARTICULARS	Dan <u>Daniel</u> Institute of Materials Research and Engineering Agency for Science, Technology and Research (A*STAR) 2 Fusionopolis Way, Singapore 138634 ✉ daniel@imre.a-star.edu.sg 📄 https://dandaniel.me	
AREAS OF SPECIALIZATION	fluid mechanics, wetting and adhesion, atomic force microscopy, functional/superhydrophobic/lubricated surfaces, biofouling	
EDUCATION	MSc/Ph.D in Applied Physics, 2011-2017 University of Harvard (USA) BA in Physics (Hons, 1st Class), 2007-2010 Cambridge University (UK)	
EMPLOYMENT	Group Leader, Institute of Materials Research and Engineering (Singapore), 2020-present Research Scientist, Institute of Materials Research and Engineering (Singapore), 2017-2020 Research Engineer, Institute of Microelectronics (Singapore), 2010-2011	
AWARDS/GRANTS	A*STAR NSS(BS/PhD) scholarship, 2007–2017 A*STAR SERC Career Development Award 2018 : ~ 150K grant for independent research <i>“Ultra-sensitive, high-resolution chemical force mapping of surfaces for wetting applications”</i> Developing a novel AFM technique for ultra-sensitive surface characterization Selected to attend the Lindau Nobel Laureate Meeting 2019	
INVENTION DISCLOSURES	<i>“Microscopic spectroscopic reflectometry for local film thickness measurements in wetting applications”</i> Contributors : <u>D. Daniel</u> , submitted on 12 Dec 2018	
INVITED TALKS	<i>“Bioinspired liquid repellent surfaces”</i> BIGHEART Seminar hosted by Prof. Luke P. Lee National University of Singapore, Singapore (February 16, 2017) <i>“All SLIPS are slippery ; some SLIPS are more slippery than others”</i> Adaptive Surface Technologies Inc, MA, USA (May 05, 2017) <i>“Nearly-zero contact angle hysteresis on lubricated surfaces”</i> Institute of Mathematical Sciences, National University of Singapore, Singapore (May 15, 2018) <i>“Hydration lubrication of polyzwitterionic brushes”</i> Satellite meeting at Droplet 2019, hosted by Prof. Halim Kusummatmaja Durham University, UK (September 15, 2019)	
TEACHING/SUPERVISION	Teaching Assistant for AP235 (Harvard University), 2012–2013 : Graduate class in “Chemistry in Materials Science and Engineering” Supervised 3 undergraduate students from University of Waterloo (Canada), 1 master student from the University of Twente, 1 PhD student from the Nanyang Technological University (Singapore). Led to 4 publications in <i>Nat. Phys.</i> , <i>Phys. Rev. Lett.</i> , <i>Phys. Rev. X</i> , and <i>Comm. Phys.</i>	

COMMUNITY
SERVICE

Reviewer for *Soft Matter*, *Chem. Soc. Rev.*, *Phys. Rev. Fluids*, *Phys. Rev. Lett.*, *Phys. Rev. X*, and *Sci. Adv.*

Reviewer (with PhD supervisor) for *Nat. Comm.* and *Nat. Phys.*

PUBLICATION
LIST

S.K. Arya, K.C. Lee, B.D. Dahalan, [Daniel](#) and A.R.A. Rahman, "Breast tumor cell detection at single cell resolution using an electrochemical impedance technique." *Lab Chip* **12**, 2362–2368 (2012). (IF : 6.0, citation : 70)

[D. Daniel](#), M.N. Mankin, R.A. Belisle, T.-S. Wong and J. Aizenberg, "Lubricant-infused micro/nano-structured surfaces with tunable dynamic omniphobicity at high temperatures." *Appl. Phys. Lett.* **102**, 231603 (2013). (IF : 3.5, citation : 98)

J. Cui, [D. Daniel](#), A. Grinthal, K. Lin and J. Aizenberg, "Dynamic polymer systems with self-regulated secretion for the control of surface properties and material healing." *Nat. Mat.* **14**, 790–795 (2015). (IF : 39.7, citation : 135)

S. Sunny, G. Cheng, [D. Daniel](#), P. Lo, S. Ochoa, C. Howell, N. Vogel, A. Majid and J. Aizenberg, "Transparent antifouling material for improved operative field visibility in endoscopy." *Proc. Natl. Acad. Sci. USA* **113**, 11676–11681 (2016). (IF : 9.7, citation : 59)

[D. Daniel](#), J.V.I. Timonen, R. Li, S.J. Velling, and J. Aizenberg, "Oleoplaning droplets on lubricated surfaces." *Nat. Phys.* **13**, 1020–1025 (2017). (IF : 22.8, citation : 77)

[D. Daniel](#)*, X. Yao and J. Aizenberg*, "Stable liquid jets bouncing off soft gels." *Phys. Rev. Lett.* **120**, 028006 (2018) ***co-corresponding author** (IF : 8.8, citation : 2)

[D. Daniel](#)*, J.V.I. Timonen, R. Li, S.J. Velling, M.J. Kreder, A. Tetreault and J. Aizenberg* "Origins of extreme liquid repellency on structured, flat, and lubricated surfaces" *Phys. Rev. Lett.* **120**, 244503 (2018) ***co-corresponding author** (IF : 8.8, citation : 23)

M.J. Kreder*, [D. Daniel](#)*, A. Tetreault, Z. Cao, B. Lemaire, J.V.I. Timonen and J. Aizenberg "Film dynamics and lubricant depletion by droplets moving on lubricated surfaces" *Phys. Rev. X* **8**, 031053 (2018) ***contributes equally** (IF : 14.4, citation : 33)

J. Jiang, J. Gao, H. Zhang, W. He, J. Zhang, [D. Daniel](#) and X. Yao, "Directional Pumping of Water and Oil Microdroplets on Slippery Surface," *Proc. Natl. Acad. Sci. USA* (2019). (IF : 9.7, citation : 21).

[D. Daniel](#)*, A. Chia, L. Moh, X.Q. Koh, R.R. Liu, X. Zhang, and N. Tomczak*, "Hydration lubrication of polyzwitterionic brushes leads to nearly adhesion- and friction-free droplet motion," *Comm. Phys.* (2019). (citation : 2) ***co-corresponding author**

[D. Daniel](#)*, C. L. Lay, A. Sng, I. Y. Phang, X. Y. Ling, and N. Tomczak, "Mapping micron-scale wetting properties of superhydrophobic surfaces," *Proc. Natl. Acad. Sci. USA* (2019). (IF : 9.7). ***corresponding author**

S. Basu, B. M. Hanh, J. I. Chua, [D. Daniel](#), M. H. Ismail, M. Marchioro, ... and A. Miserez, "Green biolubricant infused slippery surfaces to combat marine biofouling." *J. Colloid Interface Sci.* (2020). (IF : 6.4, citation : 2)

V. Y. Tan, E. Z. Zhang, [D. Daniel](#), A. Sadovoy, N. W. Teo, ... and H.W. Yuen, "Respiratory droplet generation and dispersal during nasoendoscopy and upper respiratory swab testing," *Head Neck* (2020). (IF : 2.5)

h-index : 8, citation count > 500

PUBLICATION
UNDER REVIEW

D. Daniel*, Y. Florida, C. L. Lay, X. Q. Koh, A. Sng, and N. Tomczak, [Quantifying surface wetting properties using droplet probe AFM](#), ACS Appl. Mater. Interfaces (2020)
***corresponding author**

D. Daniel*, S. S. Goh, T. N. B. Tran, X. Q. Koh and N. Tomczak. [Origin of underwater oil-repellence in polyelectrolyte brush surfaces](#). Adv. Mater. Interfaces (2020).
***corresponding author, invited article**

REFERENCES

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Additional references available upon request