

October 2019

IMPact@SUTD is a regular update featuring works by SUTD Faculty, Researchers, Students and Research Centres/Labs. We hope to create awareness of the Research by SUTD within the SUTD community and beyond. Share with us your SUTD works today so that we can include it in our next update.

CONGRATULATIONS!

Professor Lim Sun Sun

Head of Humanities, Arts and Social Sciences at SUTD
Nominated Member of Parliament



Professor Lim Sun Sun For publishing the book
*'Transcendent Parenting: Raising Children in the Digital Age'**
with Oxford University Press.

*The book focuses on the phenomenon of transcendent parenting, where parents actively use technology to go beyond traditional, physical practices of parenting. In drawing on the experiences of intensely digitally-connected families in Singapore to tell a global story, Sun Sun Lim argues how transcendent parenting can embody and convey, intentionally or not, the parenting priorities in these households.

Scan to read!



Computerized Electronic Features Direct Children's Attention to Print in Single- and Dual-Language e-Books
AERA Open

SUTD Author: Yow Wei Quin and Sridhar Priyashri

"Dual-language books may impose extra cognitive load on our information processing capacity. We found that enhancing electronic features with synchronized dual-channel inputs and attention-guiding cues in e-books effectively directed attention to print in the target languages. These findings provide important implications on how e-books can support the development of literacy."

--- Yow Wei Quin



Self-selective van der Waals heterostructure for terabit-scale memory integration
Nature Communications

SUTD Author: Yishu Zhang and Zhao Rong

"This work reports a novel self-selective memory based on hexagonal boron nitride and graphene combining non-volatile and volatile memory operations. It exhibits an ultra-high self-selectivity of 10^{10} with an on/off resistance ratio larger than 10^3 . This self-selective memory minimizes sneak currents, paving a way for terabit-scale and energy-efficient memory integration."

--- Zhao Rong

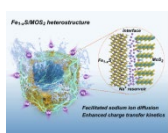


Quaternary Piperazine-Substituted Rhodamines with Enhanced Brightness for Super-Resolution Imaging
Journal of American Chemical Society

SUTD Author: Chao Wang, Weijie Chi, and Xiaogang Liu

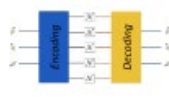
"We have demonstrated a generalizable strategy to greatly improve the brightness of organic fluorophores for super-resolution fluorescence imaging."

--- Xiaogang Liu



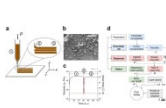
Boosting Sodium Storage of Fe_{1-x}S/MoS₂ Composite via Heterointerface Engineering
Nano-Micro Letters

SUTD Author: Song Chen, Shaozhan Huang, Junping Hu, Shuang Fan, Yang Shang, Mei Er Pam, Xiaoxia Li and Yang Hui Ying



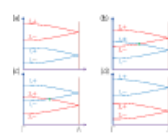
Causal Limit on Quantum Communication
Physical Review Letters

SUTD Author: Zhikuan Zhao, Yingkai Ouyang and Joseph F. Fitzsimons



Chocolate-based Ink Three-dimensional Printing (Ci3DP)
Scientific Reports

SUTD Author: Rahul Karyappa and Michinao Hashimoto



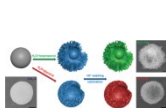
Composite Dirac semimetals
Physical Review B

SUTD Author: Ziming Zhu, Zhi-Ming Yu, Weikang Wu and Shengyuan A. Yang



Deep artifact-free residual network for single-image super-resolution
Signal Image and Video Processing

SUTD Author: Milad Abdollahzadeh



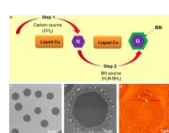
Heterostructured TiO₂ Spheres with Tunable Interiors and Shells toward Improved Packing Density and Pseudocapacitive Sodium Storage
Advanced Materials

SUTD Author: Junping Hu and Shengyuan A. Yang



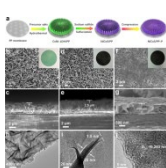
Hybrid microfluidic sorting of rare cells based on high throughput inertial focusing and high accuracy acoustic manipulation
RSC Advances

SUTD Author: Yinning Zhou, Zhichao Ma and Ye Ai



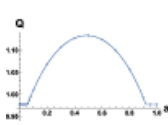
In situ epitaxial engineering of graphene and h-BN lateral heterostructure with a tunable morphology comprising h-BN domains
Npg Asia Materials

SUTD Author: Dechao Geng, Lay Kee Ang and Hui Ying Yang



In situ-grown compressed NiCo₂S₄ barrier layer for efficient and durable polysulfide entrapment
Npg Asia Materials

SUTD Author: Shao zhan Huang, Ye Wang, Junping Hu, Yew Von Lim, Dezhi Kong, Lu Guo, and Hui Ying Yang



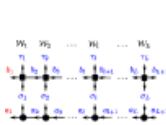
Key role of recombination in evolutionary processes with migration between two habitats
Physical Review E

SUTD Author: Kang Hao Cheong



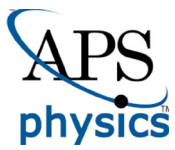
Liquid biopsy: one cell at a time
Npj Precision Oncology

SUTD Author: Jyothsna Vasudevan



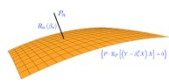
Matrix product states with adaptive global symmetries
Physical Review B

SUTD Author: Dario Poletti



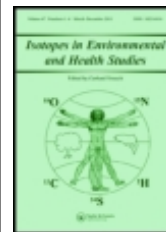
Measurement-driven analog of adiabatic quantum computation for frustration-free Hamiltonians
Physical Review A

SUTD Author: Liming Zhao and Joseph F. Fitzsimons



Robust wasserstein profile inference and applications to machine learning
Journal of Applied Probability

SUTD Author: Karthyek Murthy



Stable isotope characteristics of water resources in the coastal area of the Vietnamese Mekong Delta
Isotopes in Environmental and Health Studies

SUTD Author: Thanh Duc Dang

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