

March 2018

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!

Associate Professor Yang Hui Ying was awarded the IPS Nanotechnology Medal* 2018

*IPS (Institute of Physics Singapore) Awards and Medals are given to local physicists who have made significant contributions in the field of physics.



Enantioselective 1,2-Anionotropic Rearrangement of Acylsilane through a Bisguanidinium Silicate Ion Pair
Journal of the American Chemical Society

SUTD Author: Davin Tan and Richmond Lee

"This pioneering work details the stereoselective organosilicon chemistry involving Brook rearrangement process, turning acylsilane to optically pure secondary alcohol. Experimental and computational studies were carried out to elucidate the mechanism of the process revealing chemical intermediates and rationalizing the origin of stereochemistry."

--- Richmond Lee



Numerical Simulation of the Evolution of Stress in Solar Cells During the Entire Manufacturing Cycle of a Conventional Silicon Wafer Based Photovoltaic Laminate
IEEE Journal of Photovoltaics

SUTD Author: Song Wenjian M Ridhuan, Sasi Kumar Tippabhotla, Andrew A.O. Tay and Arief Suriadi Budiman

"The manufacturing cycle of a c-Si photovoltaic (PV) laminate induces stresses in a cell which can lead to fracture and failure. In this study, the evolution of such stresses are simulated sequentially and the critical instances in the manufacturing cycle are identified. This allows us to better quantify the stresses developed in the cells and improve the yield of PV laminates."

--- Song Wenjian and Arief Suriadi Budiman

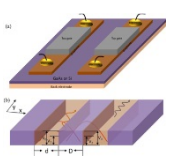


Second Beginnings - Senior Living Redefined
Lien Foundation

SUTD Author: Chong Keng Hua and Kang Fong Ing

"How could underused spaces in land-scarce Singapore be re-purposed into thriving communities for our ageing population? Commissioned by Lien Foundation, we propose 10 new architectural typologies to enable seniors to pursue passions, initiate activities, operate small businesses, exercise and, when the time comes, be cared for within the community."

--- Chong Keng Hua



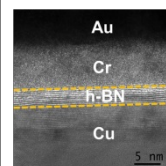
A new coupling mechanism between two graphene electron waveguides for ultrafast switching
Semiconductor Science and Technology

SUTD Author: Wei Huang, Shi-Jun Liang, and Lay Kee Ang



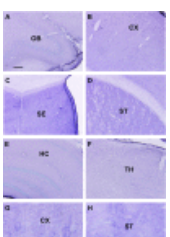
A Randomized Distributed Ellipsoid Algorithm for Uncertain Feasibility Problems
IEEE 56th Annual Conference on Decision and Control

SUTD Author: Roland Bouffanais



Conductive Atomic Force Microscope Study of Bipolar and Threshold Resistive Switching in 2D Hexagonal Boron Nitride Films
Scientific Reports

SUTD Author: Alok Ranjan, Nagarajan Raghavan, Sen Mei, Shubhakar Kalya and Kin Leong Pey



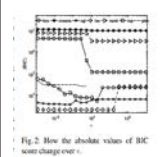
Distribution of Alox15 in the Rat Brain and Its Role in Prefrontal Cortical Resolvin D1 Formation and Spatial Working Memory
Molecular Neurobiology

SUTD Author: Ong Eng Shi



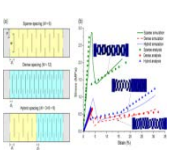
InDeaTe-A Computer-Based Platform with a Systematic Design Template and a Database of Methods and Tools
Research into Design for Communities

SUTD Author: Srinivasan Venkataraman



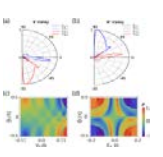
Should We Learn Probabilistic Models for Model Checking? A New Approach and An Empirical Study
Fundamental Approaches to Software Engineering

SUTD Author: Jingyi Wang and Jun Sun



Stretchable Kirigami Polyvinylidene Difluoride Thin Films for Energy Harvesting: Design, Analysis, and Performance
Physical Review Applied

SUTD Author: Dong Wang



Trigonal warping induced unusual spin texture and strong spin polarization in graphene with the Rashba effect
Physical Review B

SUTD Author: Zhi-Ming Yu



Why is STEM Unattractive to Women? A Comparison of STEM Education in Japan and the United States
Heinz Journal of Public Policy

SUTD Author: Raghunath Nilanjan