

December 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

Dr Ravikumar Venkat Krishnan for being awarded the **Best Paper in *ISTFA 2018** for the paper *Pattern Search Automation for Combinational Logic Analysis*.

*International Symposium for Testing and Failure Analysis of electronic devices (ISTFA) is the top integrated circuits failure analysis conference in the world and held in the USA annually. This year the conference was held together with the International Test Conference (ITC) in Phoenix, Arizona during the last week of Oct. Our paper was presented at the Emerging concepts, which was the plenary session for the conference and stemmed out of a collaborative effort between Singapore University of Technology and design, Advanced Micro Devices (AMD) and SEMICAPS Pte Ltd.



Biological-Templating of a Segregating Binary Alloy for Nanowire-Like Phase-Change Materials and Memory
ACS Applied Nano Materials

SUTD Author: Desmond K. Loke and Tow-Chong Chong

"Researchers were able to make a version of biological patterning for tiny phase-change wires and memory using a M13 virus. This represents the overcoming of a major hurdle in speeding up time delays that come from the transfer and storage of information."

--- Desmond K. Loke



Digital Design and Nonlinear Simulation for Additive Manufacturing of Soft Lattice Structures
Additive Manufacturing

SUTD Author: Oliver Weegera and Gowri Narasimha Boddeti

"While 'stiff' lattice and micro-structures are common in additive manufacturing, e.g. for light-weighting, we developed a design and simulation approach for soft lattices with conformal geometries and subject to nonlinearities such as large deformations and instabilities. Applications for soft lattices in robotics, healthcare, protection and industrial design are rapidly emerging."

--- Oliver Weegera

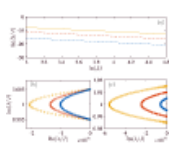


Evaluation of ferrocenyl phosphines as potent antimalarials targeting the Digestive vacuole Function of Plasmodium falciparum
Dalton Transactions

SUTD Author: Gowtham Subramanian, Kalyani Mukherjee, Renugah Naidu, Pallavi Tripathi, and Rajesh Chandramohanadas

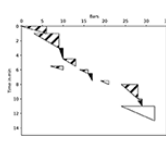
"For survival and multiplication, Malaria Parasites rely solely on import and degradation of human hemoglobin within an acidic compartment. In a recent discovery, SUTD researchers developed novel gold-complexed ferrocene-based small molecules that break the digestive vacuole resulting in rapid parasite death and clearance."

--- Rajesh Chandramohanadas



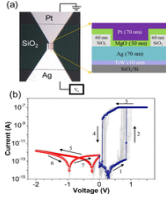
Analytical solutions for a boundary-driven XY chain
Physical Review A

SUTD Author: Dario Poletti



A Novel Interface for the Graphical Analysis of Music Practice Behaviors
Frontiers in Psychology

SUTD Author: Dorien Herremans



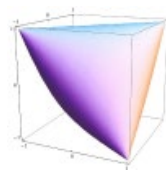
Emulating dynamic synaptic plasticity over broad timescales with memristive device
Applied Physics Letters

SUTD Author: Yishu Zhang, Shuai Zhong, Li Song, Xinglong Ji, and Rong Zhao



Evaluating the Efficiencies of Academic Research Groups: A Problem of Shared Outputs
Asia-Pacific Journal of Operational Research

SUTD Author: Francisco Benita



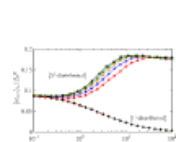
Geometry of quantum correlations in space-time
Physical Review A

SUTD Author: Zhikuan Zhao and Joseph F. Fitzsimons



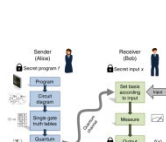
Guest Editorial for IRSP 2018 Conference
IEEE Transactions on Device and Materials Reliability

SUTD Author: Arief Suriadi Budiman and Kin-Leong Pey



Irreversible work reduction by disorder in many-body quantum systems
Physical Review E

SUTD Author: Dario Poletti



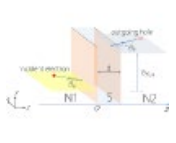
Quantum advantage for probabilistic one-time programs
Nature Communications

SUTD Author: Joshua A. Kettlewell, Tiago B. Batalhão, and Joseph F. Fitzsimons



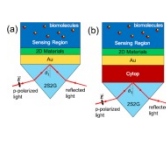
Trajectory Tracking Control of a Quadrotor Aerial Vehicle in the Presence of Input Constraints
International Journal of Control Automation and Systems

SUTD Author: Pham Luu-Trung-Duong



Transverse shift in crossed Andreev reflection
Physical Review B

SUTD Author: Ying Liu, Zhi-Ming Yu, and Shengyuan A. Yang



Two-dimensional transition metal dichalcogenides mediated long range surface plasmon resonance biosensors
Journal of Physics D-Applied Physics

SUTD Author: Yi Xu and Ang Lay Kee Ricky



Understanding Urban Human Mobility through Crowdsensed Data
IEEE Communications Magazine

SUTD Author: Yuren Zhou, Billy Pik Lik Lau, Chau Yuen, Bige Tuncer and Erik Wilhelm