



November 2022

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.



Approaching the Intrinsic Threshold Breakdown Voltage and Ultrahigh Gain in a Graphite/InSe Schottky Photodetector
Advanced Materials

SUTD Author: Jeremy Lim, Wu Qingyun, Ang Lay Kee and Ang Yee Sin

"We develop a new model of avalanche breakdown for 2D semiconductor heterostructures, which successfully explains the experimentally observed anomalous electrical breakdown effect that could not be described using conventional 'textbook' theory. This work establishes a theory foundation for designing next-generation optoelectronic device technology based on 2D materials."

--- [Ang Yee Sin](#)



An Oily Endeavour: Teaching Excitation-Emission Matrix Using the Fluorescence Fingerprints of Olive Oils
Journal of Chemical Education

SUTD Author: Shen Tianruo, Bong Eng Ying and Liu Xiaogang

"We demonstrated the introduction of the excitation-emission-matrix (EEM) and how it can be used for monitoring the thermal treatment effect on different olive oils via the fluorescence fingerprinting method. The thermal effect on the fluorescent properties of the olive oils was discussed in a multidisciplinary approach that incorporates mathematical analyses. The acceptability and generalizability of this method were evaluated by the student's performance in a speeding-reading-based informative questionnaire survey."

--- [Shen Tianruo](#)

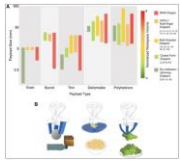


Fluorescent Janus Ring Siloxanes for Detection of Au(III) and L-Cysteine
Dyes and Pigments

SUTD Author: Chanmungkalakul Supphachok and Liu Xiaogang

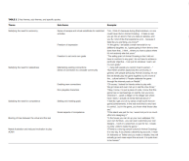
"Herein, we have synthesized two cyclic tetrasiloxanes, which can be used for detecting Au(III) ions in aqueous solutions. This sensing method exhibited high sensitivity, exceptional efficiency, and good recovery rate in the real water samples. Besides, the generated Au(III) complex can be further applied as the fluorescence turn-on sensor for L-cysteine.."

--- [Supphachok Chanmungkalakul](#)



A Multimodal, Reconfigurable Workspace Soft Gripper for Advanced Grasping Tasks v Soft Robotics

SUTD Author: Shehal Jain, Saikrishna Dontu, Joanne Ee Mei Teoh, and Pablo Valdivia Y Alvarado



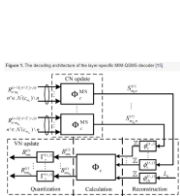
Animal Crossing and COVID-19: A Qualitative Study Examining How Video Games Satisfy Basic Psychological Needs During the Pandemic
Frontiers in Psychology

SUTD Author: Andrew Z. H. Yee



Comparison of Structural Performance and Environmental Impact of Epoxy Composites Modified by Glass and Flax Fabrics
Journal of Composites Science

SUTD Author: Georgios Koronis, Arlindo Silva and Michael Ong



Design of Mutual-Information-Maximizing Quantized Shuffled Min-Sum Decoder for Rate-Compatible Quasi-Cyclic LDPC Codes
Electronics

SUTD Author: Kang Peng and Cai Kui



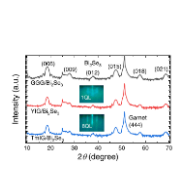
Federated Spectrum Learning for Reconfigurable Intelligent Surfaces-Aided Wireless Edge Networks
IEEE Transactions on Wireless Communications

SUTD Author: Cao Xuelin and Yuen Chau



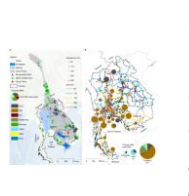
Feeling of Presence Maximization: mmWave-Enabled Virtual Reality Meets Deep Reinforcement Learning
IEEE Transactions on Wireless Communications

SUTD Author: Quek Tony and You Chaoqun



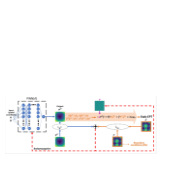
Observation of nonlinear planar Hall effect in magnetic-insulator-topological-insulator heterostructures
Physical Review B

SUTD Author: Huang Yue-Xin and Yang Shengyuan



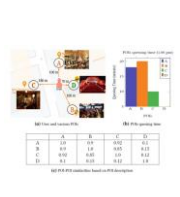
Opportunities to curb hydrological alterations via dam re-operation in the Mekong
Nature Sustainability

SUTD Author: Stefano Galelli, Thanh Duc Dang, Ng Jia Yi and A. F. M. Kamal Chowdhury



Physics Informed Neural Networks (PINN) for Low Snr Magnetic Resonance Electrical Properties Tomography (MREPT) Diagnostics

SUTD Author: Huang Shaoying



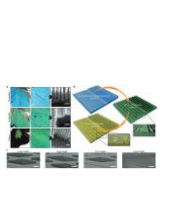
POI recommendation with queuing time and user interest awareness
Data Mining & Knowledge Discovery

SUTD Author: Lim Kwan Hui



Rate-compatible spatially coupled LDPC code ensembles by partial repetition extension
IET Communications

SUTD Author: Yuen Chau



The Height of Chitinous Ridges Alone Produces the Entire Structural Color Palette
Advanced Materials Interfaces

SUTD Author: Hemant Kumar Raut, Ruan Qifeng, Joel K.W. Yang and Javier G. Fernandez

Contact us at library@sutd.edu.sg
An SUTD Library Service©2022