

August 2021

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.



A Unified Fluorescence Quenching Mechanism of Tetrazine-Based Dyes: Energy Transfer to a Dark State

Materials Chemistry Frontiers

SUTD Author: Weijie Chi, Chao Wang, Davin Tan, Xiaogang Liu

"We described a generalized fluorescence quenching mechanism, coined as "Energy Transfer to a Dark State" (ETDS), to rationalize the fluorogenicity of tetrazine-based dyes."

--- Xiaogang Liu



Ternary FePSe₃ Atomic Layers with Competitive Temperature Coefficient of Resistance for Uncooled Infrared Bolometers

Advanced Materials Interfaces

SUTD Author: Shengyuan A. Yang

"Our result reveals a remarkable property of FePSe₃ atomic layers and paves the way toward new types of bolometers with high sensitivities."

--- Shengyuan A. Yang



Tunable Soft Lens of Large Focal Length Change

Soft Robotics

SUTD Author: Ujjaval Gupta

"This study demonstrates that transparent DEAs are capable of achieving focus-variation functions, and potentially useful in artificial robotic vision, visual prostheses, and adjustable glasses, which will induce significant effects on the future development of tunable optics."

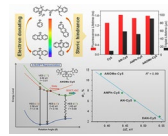
--- Ujjaval Gupta



A hybrid of genetic algorithm and particle swarm optimization for reducing material waste in extrusion-based additive manufacturing

Rapid Prototyping Journal

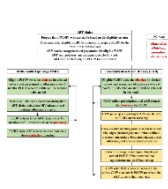
SUTD Author: Jingchao Jiang



An Approach to Developing Cyanines with Simultaneous Intersystem Crossing Enhancement and Excited-State Lifetime Elongation for Photodynamic Antitumor Metastasis

Journal of the American Chemical Society

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



Community-based model for the delivery of antiretroviral therapy in Cambodia: a quasi-experimental study protocol

BMC Infectious Diseases

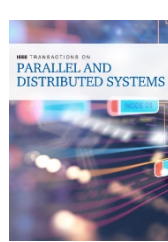
SUTD Author: Mengjeng Ung



Constructing Quasi-Site-Specific Multivariate Probability Distribution Using Hierarchical Bayesian Model

Journal of Engineering Mechanics

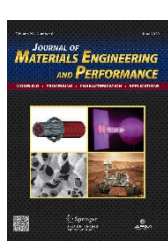
SUTD Author: Kok-Kwang Phoon



Decentralized Edge Intelligence: A Dynamic Resource Allocation Framework for Hierarchical Federated Learning

IEEE Transactions on Parallel and Distributed Systems

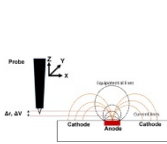
SUTD Author: Zehui Xiong



Design and Manufacturing Implications of Additive Manufacturing

Journal of Materials Engineering and Performance

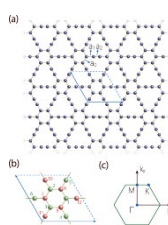
SUTD Author: Samyeon Kim



Electrochemical Modeling of Scanning Vibrating Electrode Technique on Scratched and Inclined Surfaces

Journal of the Electrochemical Society

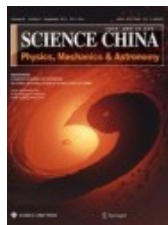
SUTD Author: Sareh Vafakhah



Graphyne as a second-order and real Chern topological insulator in two dimensions

Physical Review B

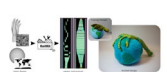
SUTD Author: Cong Chen, Weikang Wu, Zhi-Ming Yu, Xian-Lei Sheng and Shengyuan A. Yang



Hybrid quantum-classical convolutional neural networks

Science China-Physics, Mechanics & Astronomy

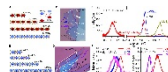
SUTD Author: Junhua Liu and Kwan Hui Lim



KnitKit: A flexible system for machine knitting of customizable textiles

ACM Transactions on Graphics

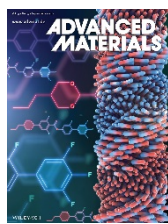
SUTD Author: Georges Nader, Yu Han Quek, Pei Zhi Chia, and Oliver Weeger



Layer-engineered interlayer excitons

Science Advances

SUTD Author: Si Li and Shengyuan A. Yang



Reproducible X-ray Imaging with a Perovskite Nanocrystal Scintillator Embedded in a Transparent Amorphous Network Structure

Advanced Materials

SUTD Author: Huiying Yang