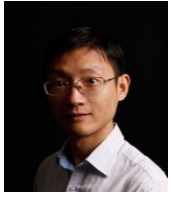


January 2019

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.



Electric-field-tuned topological phase transition in ultrathin Na₃Bi
Nature

SUTD Author: Weikang Wu and Shengyuan A. Yang

"Together with our experimental friends, we demonstrate for the first time a gate controlled topological phase transition, which was originally predicted by my group three years ago. This offers the crucial step towards the ultimate realization of a topological transistor, a promising candidate for the next-generation electronics."

--- Shengyuan A. Yang



Fabrication of complex 3D composites by fusing automated fiber placement (AFP) and additive manufacturing (AM) technologies
Advanced Manufacturing: Polymer & Composites Science

SUTD Author: Felix Raspall, Rajkumar Velu, and Nahaad Mohammed Vaheed

"Globally, there is an increasing demand for composite 3D components for various applications. We developed the design and robotic manufacturing of 3D composite components, which improve the design and production workflow of composite parts, covering the development of an effective design environment for fiber layout, a functional fiber-placement work-cell and a robust machine control system."

--- Rajkumar Velu



Mecca of Myths: Melaka in Two Hikayats
Moving Worlds

SUTD Author: Nazry Bahrawi

"This article positions the precolonial Melaka kingdom of the fifteenth century as an exemplary postcolonial city in Southeast Asia. Referencing the two classical Malay manuscripts of *Sejarah Melayu* and *Hikayat Abdullah*, it argues that these, and not colonial intervention, form the basis of Malay modernity."

--- Nazry Bahrawi

Directly anchoring 2D NiCo metal-organic frameworks on few-layer black phosphorus for advanced lithium-ion batteries
Journal of Materials Chemistry A

SUTD Author: Shao-zhuan Huang

Holographic colour prints for enhanced optical security by combined phase and amplitude control
Nature Communications

SUTD Author: Kevin T.P. Lim, Hailong Liu, Yejing Liu, and Joel K.W. Yang

Hough Transform Implementation For Event-Based Systems: Concepts and Challenges
Frontiers in Computational Neuroscience

SUTD Author: Hossein Nejati

Many-body open quantum systems beyond Lindblad master equations
Physical Review A

SUTD Author: Xiansong Xu and Dario Poletti

Noninterleaved Metasurface for (2(6)-1) Spin- and Wavelength-Encoded Holograms
Nano Letters

SUTD Author: Joel K. W. Yang

Quasiparticle spectra of supersolid lattice gases at near-resonant Rydberg dressing
Physical Review A

SUTD Author: Ulf Bissbort

Rapid prototyping of fluoropolymer microchannels by xurography for improved solvent resistance
Biomicrofluidics

SUTD Author: Takuma Hizawa, Atsushi Takano, Pravien Parthiban, and Michinao Hashimoto

Structural transition in interdependent networks with regular interconnections
Physical Review E

SUTD Author: Robert E. Kooij

Ultrafast Nanoscale Phase-Change Memory Enabled By Single-Pulse Conditioning
ACS Applied Materials & Interfaces

SUTD Author: Desmond K. Loke, Rong Zhao, and Tow-Chong Chong

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