

September 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!

Assistant Professor Rajesh Chandramohanadas

For being featured in the documentary* by the German national television broadcaster *Zweites Deutsches Fernsehen* for his research in antimalarial drug discovery and development.

*The documentary is on how open distribution and sharing of molecules by Medicines for Malaria Venture (MMV) is furthering discovery of novel antimalarial drugs, towards improving lives in the developing world, with a specific focus on India.

High-Performance Membrane Capacitive Deionization Based on Metal-Organic Framework-Derived Hierarchical Carbon Structures
ACS Omega



SUTD Author: Meng Ding and Huiying Yang

"Membrane Capacitive Deionization (MCDI) is a promising desalination technique. We designed a carbon structures for MCDI electrodes by integrating the three-dimensional graphene networks and porous carbon rods derived from metal-organic frameworks. The novel carbon structure exhibits an enhanced desalination performance due to the hierarchical porous structure and good electrical conductivity."

--- Meng Ding and Huiying Yang



MDCT-based finite element analysis of vertebral fracture risk: how much dose is needed?

Clinical Neuroradiology

SUTD Author: D. Anitha and Karupppasamy Subburaj

"Finite element model developed from MDCT images acquired with at least 75% reduced radiation dose, compared to standard radiation dose, reliably predicts vertebral bone fractures. This study allowed us to develop a routine MDCT-based patient monitoring protocol for osteoporotic fracture risk without the effective radiation dose reaching unsafe levels."

--- Karupppasamy Subburaj



Ultra-High Signal Detection of Human Embryonic Stem Cells Driven by Two-Dimensional Materials

ACS Applied Bio Materials

SUTD Author: Sophia S.Y. Chan and Desmond K. Loke

"Researchers have developed a way to achieve an ultra-high bioelectric signal from human embryonic stem cells using direct current-voltage measurements facilitated by few-layered 2D molybdenum disulfide sheets. This method, which produces cell signals 2 orders of magnitude higher than previous electrical-based detection methods, paves the way for the development of a broadly applicable, fast, and damage-free stem cell detection method."

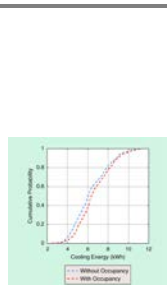
--- Desmond K. Loke



A space-time integral minimisation method for the reconstruction of velocity fields from measured scalar fields

Journal of Fluid Mechanics

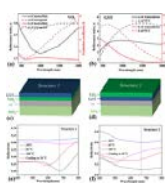
SUTD Author: Roland Bouffanais



Internet of Things for Green Building Management Disruptive innovations through low-cost sensor technology and artificial intelligence

IEEE Signal Processing Magazine

SUTD Author: Wen-Tai Li, Chau Yuen, Kristin L. Wood



Design of a 4-level active photonics phase change switch using VO₂ and Ge₂Sb₂Te₅

Applied Physics Letters

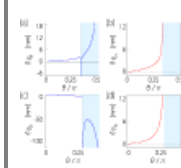
SUTD Author: Yun Meng, Jitendra K. Behera, Litian Chew and Robert E. Simpson



Multiagent approach to temporal and punctual urban redevelopment in dynamic, informal contexts

International Journal of Architectural Computing

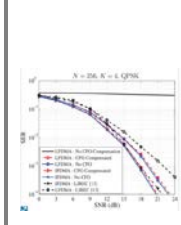
SUTD Author: Trevor Ryan Patt



Goos-Hanchen-like shifts at a metal/superconduct or interface

Physical Review B

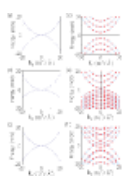
SUTD Author: Ying Liu¹, Zhi-Ming Yu and Shengyuan A. Yang



Multi-User CFOs Estimation for SC-FDMA System Over Frequency Selective Fading Channels

IEEE Access

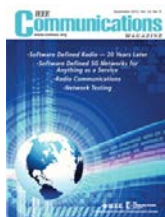
SUTD Author: Chau Yuen



Quadratic contact point semimetal: Theory and material realization

Physical Review B

SUTD Author: Ziming Zhu, Ying Liu, Zhi-Ming Yu, Shan-Shan Wang and Shengyuan A. Yang



Traffic Matching in 5G Ultra-Dense Networks

IEEE Communications Magazine

SUTD Author: Howard H. Yang

Research is to see what everybody else has seen, and to think what nobody else has thought.

---Albert Szent-Gyorgyi