

January 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.

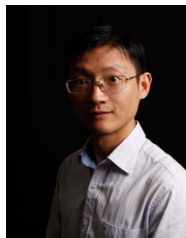


**Global Perspectives on Children's Digital Opportunities: An Emerging Research and Policy Agenda**  
*Pediatrics*

SUTD Author: Sun Sun Lim

"Access to digital technology cannot be seen as an unalloyed blessing for children because with opportunities, come risks. We discuss how cultural, demographic, technological, socioeconomic, geographic, and political differences shape children's lives and we articulate a multidimensional research and policy agenda to help children optimise digital opportunities, while not exacerbating existing disparities."

--- Sun Sun Lim



**Hourglass Dirac Chain Metal in Rhenium Dioxide**  
*Nature Communications*

SUTD Authors: Shan-Shan Wang, Ying Liu, Zhi-Ming Yu, Xian-Lei Sheng, and Shengyuan A. Yang

"Topological materials with nontrivial band structures have been a focus in current research. We propose a new topological phase, a metal with hourglass chain type band crossings dictated by crystalline symmetries, and we predict its realization in ReO<sub>2</sub>. Our results open the door to an unknown class of topological matters."

--- Shengyuan A. Yang

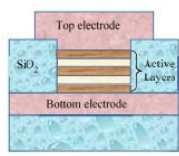


**Indoor Sound Source Localization with Probabilistic Neural Network**  
*IEEE Transactions on Industrial Electronics*

SUTD Authors: Yingxiang Sun, Jiajia Chen, and Chau Yuen

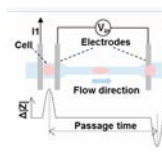
"Indoor sound source localization (SSL) has important applications including smart factory, security and smart robot. We proposed a new SSL algorithm based on probabilistic neural network. Experimental results showed that the proposed method has significantly increased the accuracy by 60.0% to 81.1% when comparing with other recently published algorithms."

--- Jiajia Chen



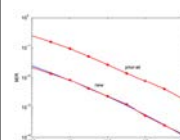
**A Two-Step Sensing Circuit for the Hysteresis Loop Selector-Based Resistive Non-Volatile Memory Arrays**  
*IEEE Transactions on Circuits and Systems II-Express Briefs*

SUTD Authors: He Wei and Zhao Rong



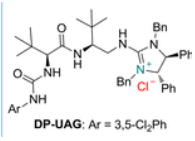
**Characterizing Deformability and Electrical Impedance of Cancer Cells in a Microfluidic Device**  
*Analytical Chemistry*

SUTD Authors: Yang Dahou, Zhou Yinning, and Ai Ye



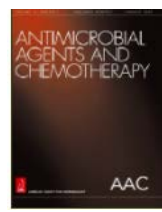
**Composition Check Codes**  
*IEEE Transactions on Information Theory*

SUTD Author: Kui Cai



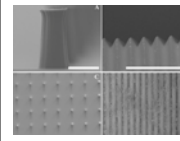
**Enantioselective Vinylogous Amination of 5-Alkyl-4-nitroisoxazoles with a Dipeptide-Based Guanidinium Phase-Transfer Catalyst**  
*Organic Letters*

SUTD Author: Richmond Lee



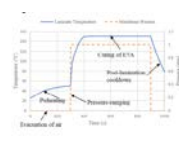
**High-Content Screening of MMV Pathogen Box for Plasmodium falciparum Digestive Vacuole Disrupting Molecules Reveals Valuable Starting Points for Drug Discovery**  
*Antimicrobial Agents & Chemotherapy*

SUTD Author: Rajesh Chandramohanadas



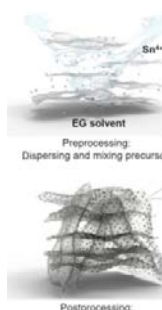
**Micro-textured films for reducing microbial colonization in a clinical setting**  
*Journal of Hospital Infection*

SUTD Authors: Mendez, A. R., Hong Yee Low, Katja Holtta-Otto and Xiaojuan Khoo



**Numerical Simulation of the Evolution of Stress in Solar Cells During the Entire Manufacturing Cycle of a Conventional Silicon Wafer Based Photovoltaic Laminate**  
*IEEE Journal of Photovoltaics*

SUTD Authors: W. J. R. Song, Sasi Kumar Tippabhotla, Andrew A.O. Tay, and Arief Suriadi Budiman



**SnSe<sub>2</sub> Quantum Dot/rGO composite as high performing lithium anode Energy Storage Materials**

SUTD Authors: Zhi Xiang Huang, Bo Liu, Dezhi Kong, Ye Wang, and Hui Ying Yang

**"Every science begins as philosophy and ends as art."**

---Will Durant