

June 2020

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



Dr. Alok Ranjan, Asst. Prof. Nagarajan Raghavan and Prof. Pey Kin Leong

being awarded **IRPS 2019 Best Paper*** for their research paper *'Spatio-Temporal Defect Generation Process in Irradiated HfO2 MOS Stacks: Correlated Versus Uncorrelated Mechanisms'*

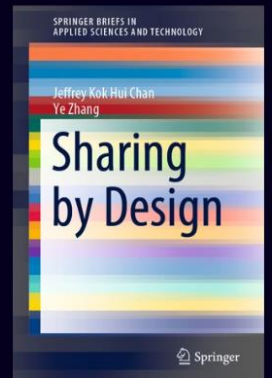
*IRPS is one of the top tier reliability conferences in semiconductor physics and devices.



CONGRATULATIONS! Assistant Professor Jeffrey Kok Hui Chan

for publishing the book, 'Sharing by Design' with Springer

This book answers the question of how to design a sharing system that can reinforce sustained, meaningful and socially constructive sharing practices in the contemporary city. It does so by building a scaffold of practical inquiry into the design of sharing systems.



Spatio-Temporal Defect Generation Process in Irradiated HfO2 MOS Stacks: Correlated Versus Uncorrelated Mechanisms

2019 IEEE International Reliability Physics Symposium (IRPS)

SUTD Author: Alok Ranjan, Nagarajan Raghavan and Pey Kin Leong

"High- κ gate dielectrics (e.g. Hafnium dioxide) form the heart of existing advanced CMOS logic and memory technologies and its reliability is of paramount importance. By combining the state-of-art experiments and multi-physics-based simulations, this work provides evidence for the defect clustering theory in dielectric breakdown to explain the observed shallow Weibull slope dependence on oxide thickness for ultra-thin dielectrics contradicting conventional percolation model predictions."

--- Alok Ranjan



Using spatially explicit commodity flow and truck activity data to map urban material flows

Journal of Industrial Ecology

SUTD Author: Lynette Cheah and Yeoh Lih Wei

"Understanding urban material flows and resource use allows us to identify opportunities for conservation and promote resource efficiency. In this work, we use commodity flow and GPS-based truck activity data to map urban material flows in Singapore in high resolution, in turn uncovering the internal processes that drive them."

--- Lynette Cheah



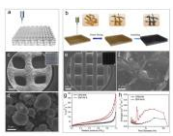
Cross-sectional associations of neighborhood third places with social health among community-dwelling older adults

Social Science & Medicine

SUTD Author: Anna Lane, Hou Yuting, Belinda Yuen

"Places located within neighborhoods and outside the home have a social function. We explored whether associations between neighbourhood third places and social health among community dwelling older adults differ by gender. We found older women, but not men, living closer to a wet market reported better social health."

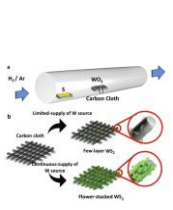
--- Anna Lane



3D-printed functional electrodes towards Zn-Air batteries

Materials Today Energy

SUTD Author: Jian Zhang, Xue Liang Li, Shuang Fan, Shaozhan Huang, Dong Yan, Pablo Valdivia y Alvarado and Hui Ying Yang



Interface engineering by atomically thin layer tungsten disulfide catalyst for high performance Li-S battery

Materials Today Energy

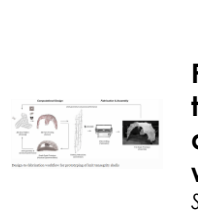
SUTD Author: Mei Er Pam, Shaozhan Huang, Shuang Fan, Dechao Geng, Dezhi Kong, Song Chen, Meng Ding, Lu Guo, Lay Kee Ang and Hui Ying Yang



Analyzing correlation of urban functionality and spatial configuration

Environment and Planning B-Urban Analytics and City Science

SUTD Author: I-Ting Chuang



Prototyping knit tensegrity shells: a design-to-fabrication workflow

Sn Applied Sciences

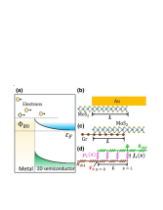
SUTD Author: Sachin Sean Gupta, Ying Yi Tan, Pei Zhi Chia, Christyasto P. Pambudi, Yu Han Quek, Christine Yogiarnan and Kenneth J. Tracy



Effect of process parameters on polyamide-6 carbon fibre prepreg laminated by IR-assisted automated fibre placement

International Journal of Advanced Manufacturing Technology

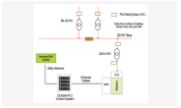
SUTD Author: Chadurvedi Venkatesan, Rajkumar Velu, Nahaad Vaheed, Felix Raspall and Arlindo Silva



Reducing Contact Resistance in Two-Dimensional-Material-Based Electrical Contacts by Roughness Engineering

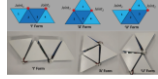
Physical Review Applied

SUTD Author: Liemao Cao, Yee Sin Ang and L.K. Ang



Smart Distribution Boards (Smart DB), Non-Intrusive Load Monitoring (NILM) for Load Device Appliance Signature Identification and Smart Sockets for Grid Demand Management
Sensors

SUTD Author: See Gim Kerk and Chau Yuen



System Level Modeling and Control Design of hTetrakis & x2013;A Polyiamond Inspired Self-Reconfigurable Floor Tiling Robot
IEEE Access

SUTD Author: Rizuwana Parween, Anh Vu Le, Yuyao Shi and Mohan Rajesh Elara

Category	Value
Environment	10.0
Culture	10.0
Education	10.0

The diversity of divestment in Singapore: Junk commodities, charity gifts, and recycling bins

Environment and Planning E: Nature and Space

SUTD Author: Lyle Fearnley

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