

January 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.

CONGRATULATIONS!

Associate Professor Arlindo Silva
(Program Director for Master's of Innovation by Design (MIBD) & Director of the NAMIC Hub @ SUTD, EPD)



For being awarded the Distinguished Paper Award at the 8th International Conference on Research in Design (iCoRD 21) for their paper "*Innovation by Design - A new post-graduate program at SUTD*".

**This paper describes our experience in implementing and running the new Master program in Innovation by Design.*

Professor Luciënne T.M. Blessing
(Co-Director of IDC, EPD)



Addressing uncertainty and ambiguity in policymaking: advancements and dilemmas
A Modern Guide to Public Policy

SUTD Author: Nair Sreeja

"Policies are affected by uncertainty with limited or no knowledge about how current conditions for policymaking might change in future. Designing solutions to appropriately match the policy problem, curating combinations of tools and approaches to address uncertainty, balancing science and politics and increasing stakeholder collaboration can help address this challenge."

--- Nair Sreeja



SUTD Author: Divya Padmanabhan, Chee Chin Lim and Karthik Natarajan

"We propose a distributionally robust model for the influence maximization problem. Unlike the classic independent cascade model, this model's diffusion process is adversarially adapted to the choice of seed set. Hence, instead of optimizing under the assumption that all influence relationships in the network are independent, we seek a seed set whose expected influence under the worst correlation is maximized."

--- Divya Padmanabhan, Chee Chin Lim and Karthik Natarajan

Development of strong and tough electrospun fiber reinforced composites
Electrospun Polymers and Composites: Ultrafine Materials, High-Performance Fibers and Wearables

SUTD Author: Komal Agarwal and Rahul Sahay

"This article focuses on techniques of embedding electrospun fibers in a polymer matrix for producing mechanically strong and stiff composites. In addition, this article reports a novel method of generating helicoidal fibrous structures using electrospinning for polymer matrix reinforcement purposes to generate tough and high-performance composites."

--- Komal Agarwal

A review on spacers and membranes: Conventional or hybrid additive manufacturing?
Water Research

SUTD Author: Chee Kai Chua

Distributed Attack Detection in a Water Treatment Plant: Method and Case Study



IEEE Transactions on Dependable and Secure Computing

SUTD Author: Sridhar Adepu and Aditya Mathur

Enabling isolation and recovery in PLC redundancy framework of metro train systems
International Journal of Information Security

SUTD Author: Edwin Franco Myloth Josephlal, Sridhar Adepu, Zheng Yang and Jianying Zhou



Fake eggs: from counter-qualification to popular certification in China's food safety crisis
Biosocieties

SUTD Author: Lyle Fearnley

Identifying Service Opportunities Based on Outcome-Driven Innovation Framework and Deep Learning: A Case Study of Hotel Service
Sustainability

SUTD Author: Nagarajan Raghavan

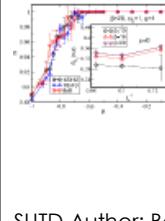
Optimal Customer Behavior in Observable and Unobservable Discrete-Time Queues
Journal of Industrial and Management Optimization

SUTD Author: Gopinath Panda



Peer-to-peer energy systems for connected communities: A review of recent advances and emerging challenges
Applied Energy

SUTD Author: Chau Yuen



Quantum Monte Carlo Simulations of the 2D Su-Schrieffer-Heeger Model
Physical Review Letters

SUTD Author: Bo Xing and Dario Poletti

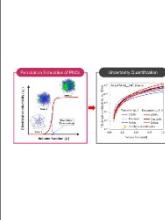
Thermoelectric generation of orbital magnetization in metals
Physical Review B

SUTD Author: Huiying Liu, Jianzhou Zhao and Shengyuan A. Yang



Toward complete area coverage of a reconfigurable tiling robot by following obstacle shape
Complex & Intelligent Systems

SUTD Author: S. M. Bhagya P. Samarakoon, M. A. Viraj J. Muthugala, Anh Vu Le and Mohan Rajesh Elara



Uncertainty quantification of percolating electrical conductance for wavy carbon nanotube-filled polymer nanocomposites using Bayesian inference
Carbon

SUTD Author: Jaehyeok Doh and Nagarajan Raghavan

Voxel design of additively manufactured digital material with customized thermomechanical properties
Materials & Design

SUTD Author: Chao Yuan, Fangfang Wang and David W. Rosen