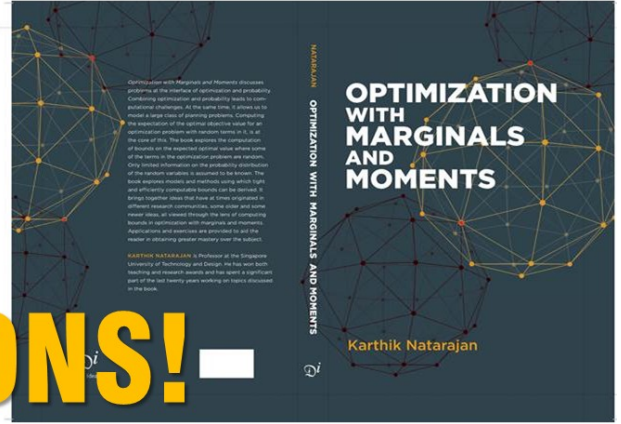


November 2021

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.



Professor Karthik Natarajan completed a graduate level research book titled **'Optimization with Marginals and Moments'** and this will be published in Fall 2021 by Dynamic Ideas LLC, Belmont, Massachusetts.



CONGRATULATIONS!



A scheme for simulating multi-level phase change photonics materials
NPJ Computational Materials



Concentrated thermionic solar cells using graphene as the collector: theoretical efficiency limit and design rules
Nanotechnology



Distributed seeing: Algorithms and the reconfiguration of the workplace, a case of 'automated' trading
Information and Organization

SUTD Author: Yunzheng Wang, Jing Ning, Li Lu and Robert E. Simpson

"We describe an approach that accurately predicts the microstructure and optical response of phase change materials during laser induced heating. The method is particularly important for predicting the multi-level optical response of PCMs, which is important for all-optical neural networks and PCM-programmable perceptrons."

--- Robert E. Simpson

SUTD Author: Yee Sin Ang and Lay Kee Ang

"We propose an updated design on concentrated thermionic emission solar cells, which demonstrates a high solar-to-electricity energy conversion efficiency larger than 10% under 600 suns, by harnessing the exceptional electrical, thermal, and radiative properties of the graphene as a collector electrode."

--- Lay Kee Ang

SUTD Author: Thijs Willems

"The paper shows how algorithms transform work practices, and how knowledge and expertise become spatiotemporally distributed. Algorithms introduce new ways of seeing into the workplace which need to be aligned."

--- Thijs Willems

Accelerating evaluation of the mobility of ionic liquid-modulated PEDOT flexible electronics using machine learning
Journal of Materials Chemistry A

SUTD Author: Weijie Chi

Decoupling the sequence of dielectric breakdown in single device bilayer stacks by radiation-controlled, spatially localized creation of oxide defects
Applied Physics Express

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

Maximal terahertz emission in high harmonic generation from 3D Dirac semimetals
Communications Physics

SUTD Author: Jeremy Lim, Yee Sin Ang, and Lay Kee Ang

Plasmonic O₂ dissociation and spillover expedite selective oxidation of primary C-H bonds
Chemical Science

SUTD Author: Qifeng Ruan

Skeleton-based relational reasoning for group activity analysis
Pattern Recognition

SUTD Author: Jun Liu

Spatial Warped Gaussian Processes: Estimation and Efficient Field Reconstruction
Entropy

SUTD Author: Sai Ganesh Nagarajan

Takagi topological insulator with odd PT pairs of corner states
Physical Review B

SUTD Author: Shengyuan A. Yang

Tuning response amplitude in nanoimprinted thermoresponsive polymer blend
Journal of Applied Polymer Science

SUTD Author: Anupama Sargur Ranganath, Suganya Vellingiri, and Hong Yee Low

Uniform hydro blasting for ship hull maintenance: A multi-objective optimization framework
Ocean Engineering

SUTD Author: Sriharsha Ghantaab, Madan Mohan Rayguruca, Thejus Pathmakumara, Manivannan Kalimuthua, and Mohan Rajesh Elara