

In the spotlight

1,2-BF₂ Shift and Photoisomerization Induced Multichromatic Response

SUTD Authors: Liu Xiaogang
Science, Math & Technology (SMT)



Imagine a material that can switch colors when heated or exposed to light — think of it as a man-made chameleon skin for objects. In collaboration with scientists from Dartmouth College (USA), Associate Professor Liu Xiaogang and co-workers have developed just that, a special kind of material that can go from one color to another with a simple trigger. This is possible because of a unique reaction where a light-sensitive molecule changes into a glowing version when heated.

“At SUTD, we explore the fascinating world of molecular design interacting with light through quantum chemical calculations.”

– Liu Xiaogang

This research shows that this color change happens easily at room temperature for the trans-form of the molecule, but not for the cis-form, showcasing the selectivity of their method. By applying this knowledge, they have created a material that can display a spectrum of colors either with light or heat stimulus. This breakthrough opens exciting possibilities, like creating smart wallpapers that change designs with the weather, or secure tags for products that can't be faked. It's a peek into the future of materials that can adapt and change, offering numerous possibilities for technology and design.

Congratulations, Dr. Karthyek Murthy & Dr. Nuno Ribeiro!

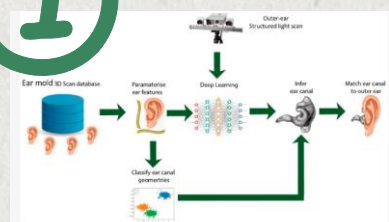
The IISE M&S Awards committee has unanimously selected **Dr. Karthyek Murthy** and **Dr. Nuno Ribeiro** for the **2024 Teaching Award**. Their joint efforts in developing and continually refining the course content with innovative pedagogical elements were found to be unique. This award recognizes excellence in teaching Modeling & Simulation (M&S) courses globally.

The award is given based on various aspects including course design, innovation, applied learning, student satisfaction, and leadership in the profession.



TRAILBLAZERS

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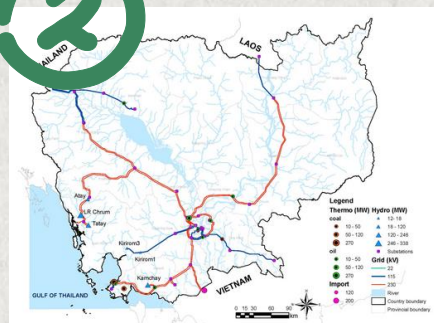


A Novel Ear Impression-Taking Method Using Structured Light Imaging and Machine Learning: A Pilot Proof of Concept Study with Patients' Feedback on Prototype

Journal of Clinical Medicine

SUTD Authors: Charmaine Kai Ling, Martinez, Jose C.; Goh Zhi Hwee, Stylianos Dritsas, Simpson, Robert E.
ASD, EPD

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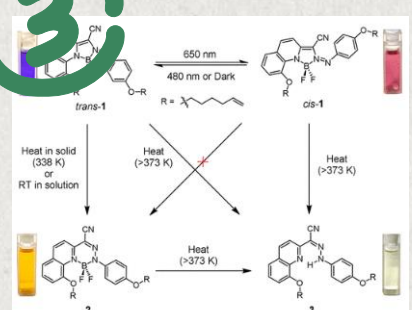


Evaluating Streamflow Forecasts in Hydro-Dominated Power Systems-When and Why They Matter

Water Resources Research

SUTD Authors: Galelli, Stefano
ESD

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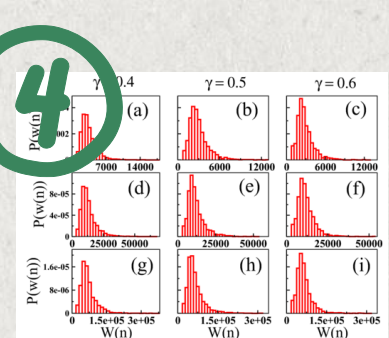


A survey on transactional stream processing

VLDB Journal

SUTD Authors: Zhang Shuhao
ISTD

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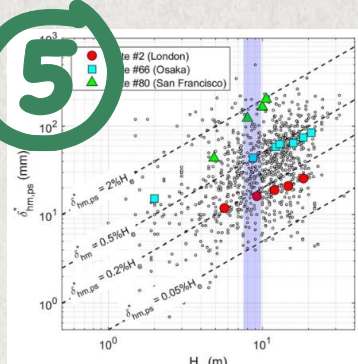


Parrondo's paradox in network communication: A routing strategy

Physical Review Research

SUTD Authors: Mishra, Ankit
SMT

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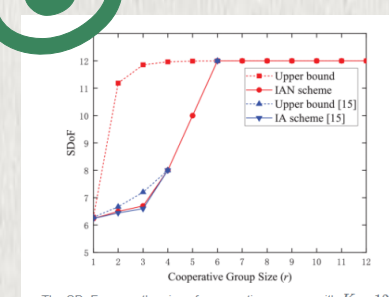


Data-driven hierarchical Bayesian model for predicting wall deflections in deep excavations in clay

Computers and Geotechnics

SUTD Authors: Phoon Kok-Kwang
Provost Office, ISTD, ASD

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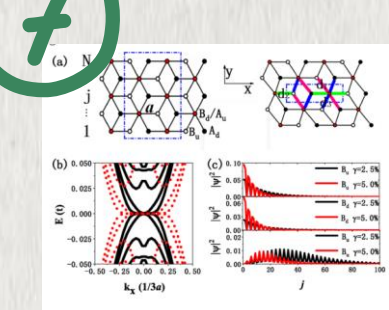


Wireless Distributed Computing Networks With Interference Alignment and Neutralization

IEEE Transactions on Communications

SUTD Authors: Quek Tony Q. S.
ISTD

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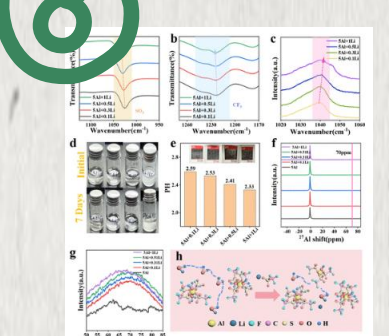


Armchair edge states in shear-strained graphene: Magnetic properties and quantum valley Hall edge states

Physical Review B

SUTD Authors: Fu Pei-Hao
SMT

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Dual-Salt Mixed Electrolyte for High Performance Aqueous Aluminum Batteries

ACS Applied Materials & Interfaces

SUTD Authors: Hui Ying Yang
EPD