

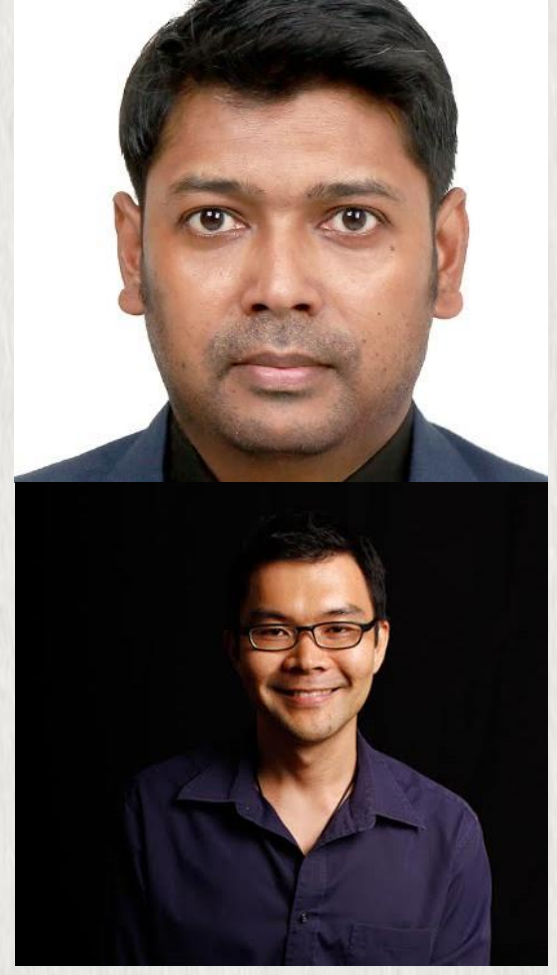
In the spotlight

Scaling up multispectral color filters with binary lithography and reflow (BLR)

Nanophotonics

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Spectral sensors are an integral part in digital cameras and mobile phones. To exhibit color sensitivity, color filters are fabricated above photodiodes. However, processes that rely on the sequential fabrication of each filter are cost ineffective. In collaboration with LiteOn Semiconductor, we introduce an approach to produce at least 16 distinct filters based on a single low-resolution lithographic step with a minimum feature size of 0.6 μm . Distinct from grayscale lithography that requires multiple steps for fabrication, we employ standard binary lithography but achieve height variations in polymeric resist through a post-development reflow process. The resulting transparent polymeric films were incorporated in Fabry-Perot cavity structures with cavity thickness ranging 90–230 nm to produce transmittance across the visible spectrum. This process demonstrates control of the dielectric layer thickness down to ~ 15 nm. This new process provides a cost-effective alternative to traditional techniques but not limited to fabricating transmission and reflective spectral filters.



"This new process provides a cost-effective alternative to traditional techniques but not limited to fabricating transmission and reflective spectral filters."

- Md Abdur Rahman



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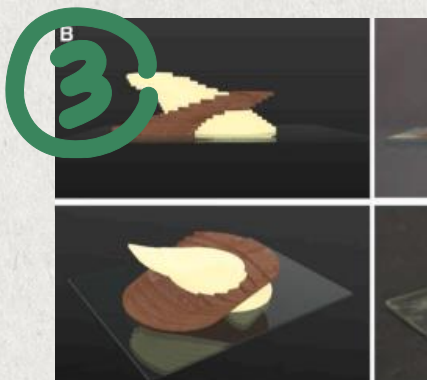
SUTD Authors: Elissa Hartanto, Ashley Chen, Immanuel Koh
Architecture and Sustainable Design (ASD)



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SUTD Author: Rhema Hokama
Humanities, Arts and Social Sciences (HASS)



Multi-material Direct Ink Writing 3D Food Printing using Multi-channel Nozzle

Future Foods

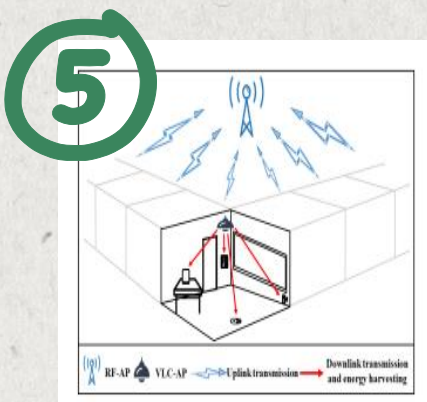
SUTD Authors: Lee Cheng Pau, Mervin Ng Jian Yi, Nicole Chian Min Yu, Michinao Hashimoto
SUTD-MIT International Design Centre (IDC)



A STEAM X D Workshop For Pre-University Students: Preparing Students For Transdisciplinary Applications

Proceedings Of The International Conference On Engineering And Product Design Education, E&PDE 2023

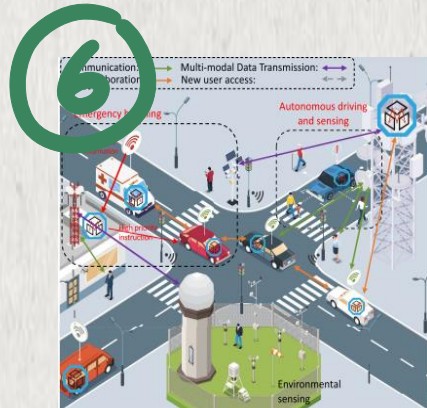
SUTD Authors: Foong Shaohui, Shravya Thandlam Sudhindra, Lyle Fearnley, Setsuko Yokohama, Lee Chee Huei, Cheah Chin Wei, Wong Wei Pin, Tan Mei Xuan, Tan Da Yang, Ang Lay Kee, Franklin Anariba
Engineering Product Development (EPD), Humanities, Arts and Social Sciences (HASS), Science, Mathematics and Technology (SMT)



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IEEE Wireless Communications Letters

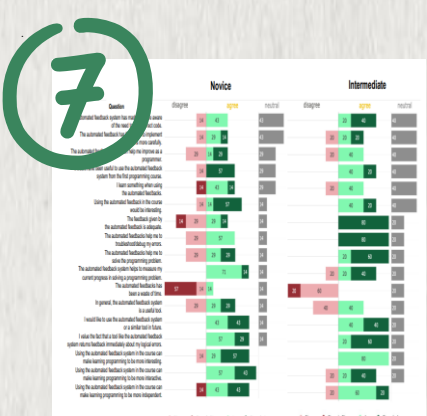
SUTD Author: Xiong Zehui
Information Systems Technology and Design (ISTD)



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IEEE Wireless Communications

SUTD Authors: Chen Zihan, Tay Y. C., Chong Kai Fong Ernest, Tony Q. S. Quek
Information Systems Technology and Design (ISTD)



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2023 IEEE International Conference On Teaching, Assessment And Learning For Engineering, TALE

SUTD Authors: Oka Kurniawan, Ismam Al Hoque, Norman Lee
Tiong Seng, Cyrille Jegourel, Nachamma Sockalingam
Information Systems Technology and Design (ISTD)



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2023 IEEE International Conference On Teaching, Assessment And Learning For Engineering, TALE

SUTD Authors: Huang Qian, Ameek Kaur, Thijs Willems, Poon King Wang, Mohan Rajesh Elara, Bhagya Samarakoon
Lee Kuan Yew Centre for Innovative Cities (LKYCIC), Engineering Product Development (EPD)