

In the spotlight

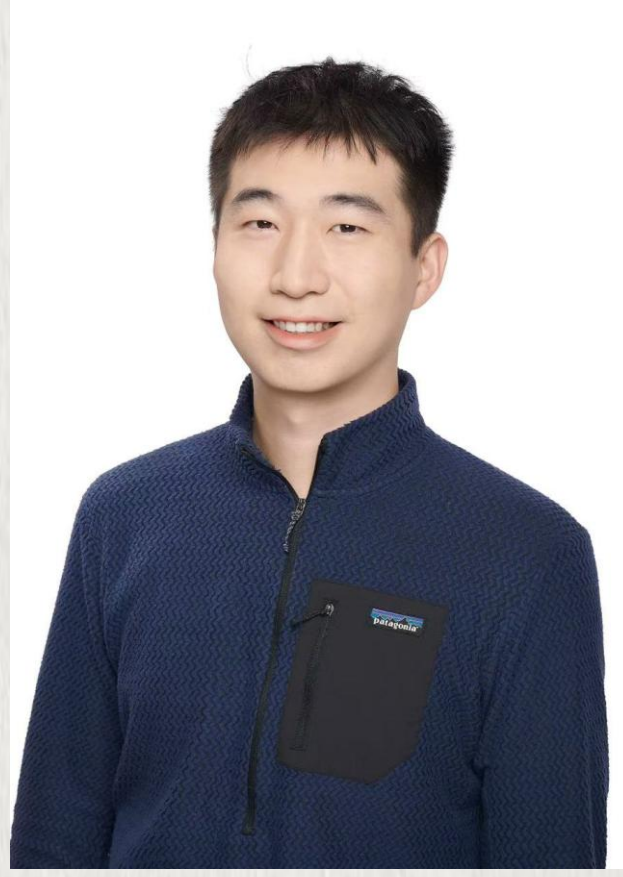
Non-Terrestrial Networking for 6G: Evolution, Opportunities, and Future Directions

Engineering

SUTD Authors: Feng Wang, Shengyu Zhang, Huiting Yang, Tony Q.S. Quek

The ability to manage tens of thousands of satellites is essential for the long-term success of satellite internet following its launch. The fundamental challenge is that low-orbit-Earth (LEO) satellites moves extremely fast overhead (around 7.6 km/s at a 550 km altitude), resulting in unstable and dynamic communication quality. In our article, we review the technological evolution of satellite connectivity management and present new solution directions towards the growing scale of satellite networks. We highlight the opportunities to leverage generative AI models and graph-based inference to enable effective and rapid connectivity scheduling for satellite systems and, ultimately, for a collaborative terrestrial and non-terrestrial 6G network.

This work seeks to identify a new pathway for managing modern satellite Internet systems. In support of the 6G vision, where smartphones can directly connect to satellites and experience seamless services from ground to satellites, our goal is to enable a smart, intelligent, and powerful network operator behind the vastness of space.



"In support of the 6G vision, where smartphones can directly connect to satellites and experience seamless services from ground to satellites, our goal is to enable a smart, intelligent, and powerful network operator behind the vastness of space."

- Feng Wang

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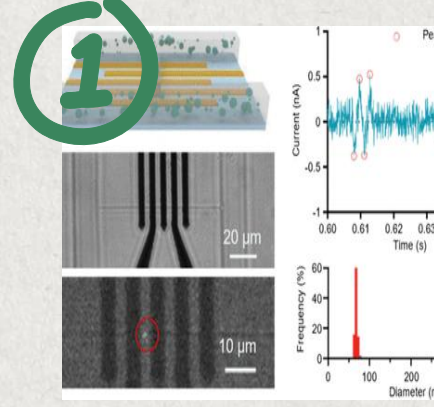
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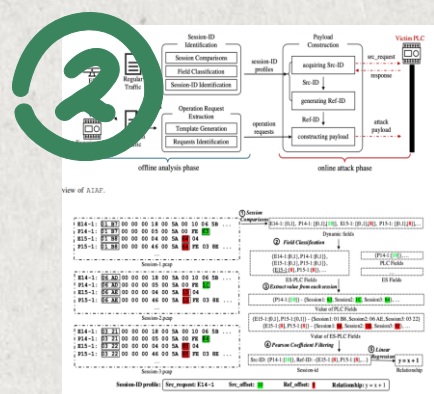


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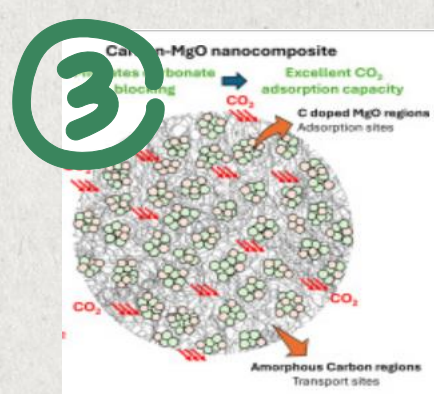
Label-Free Nanoparticle Characterization via Electrical Impedance-Based Submicrofluidic Analysis

Nano Letters
SUTD Authors: Zhao Qiang, Ye Ai
EPD



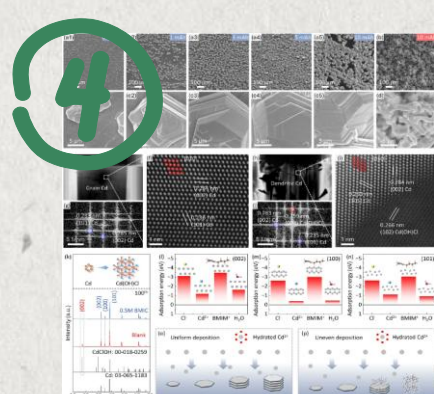
AIAF: An Automated ICP-Based Attack Framework for Industrial Control Systems

IEEE Internet Of Things Journal
SUTD Authors: Yang Zeyu, Zhou Jianying
iTrust



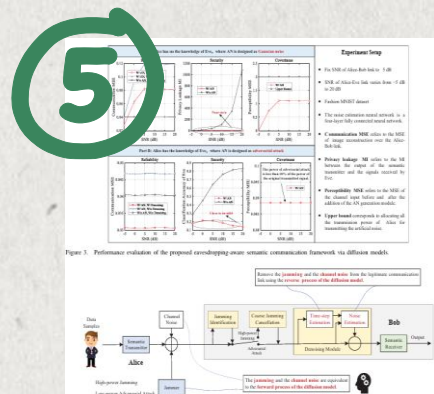
Glucose-assisted carbon-MgO nanocomposites overcome carbonate blocking for flue-gas CO2 capture

Chemical Engineering Journal
SUTD Authors: Hashan N. Thenuwara, Wu Shunnian, Wu Ping
Entrop Interface Grp.



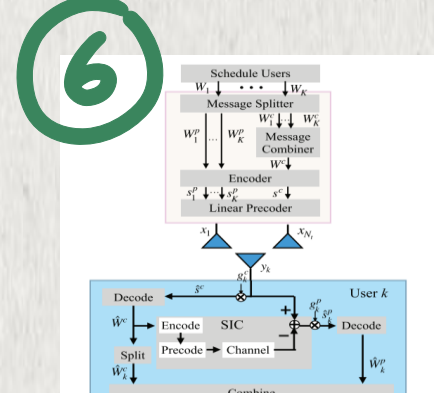
Imidazolium Cation-Stabilized Interfacial Chemistry for Durable Aqueous Cadmium-Iodine Batteries

Angewandte Chemie-International Edition
SUTD Authors: Li Wenjing, Song Haobin, Zhao Nan, Wong Han Sheng
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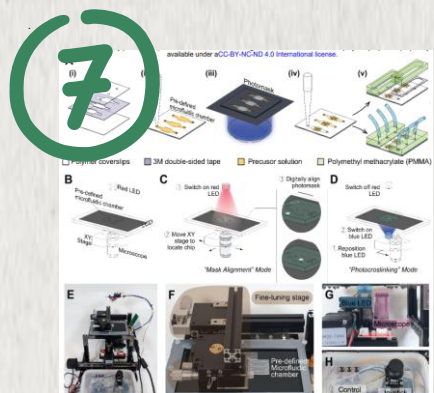
Toward Secure Semantic Transmission in the Era of GenAI: A Diffusion-Based Framework

IEEE Communications Magazine
SUTD Authors: Chen Zihan, Park Jihong, Quek, Tony Q. S.
ISTD



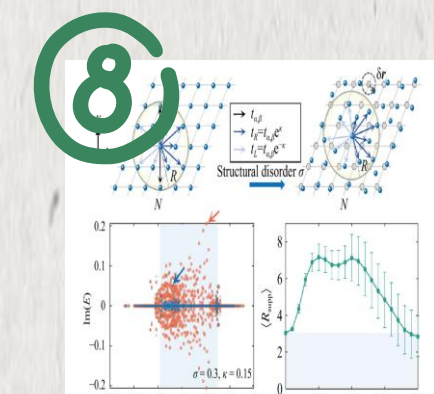
Altermagnetic Flatband-Driven Fermi Surface Geometry for Giant Tunneling Magnetoresistance

Advanced Functional Materials
SUTD Authors: Yang Xingyue, Fang Shibo, Yang Zongmeng, Ang Yee Sin
SMT



Organ-on-a-Chip Fabrication Using Dynamic Photomask

Small Methods
SUTD Authors: Terry Ching, Chang Shu-yung, Takanobu Takenouchi, Michinao Hashimoto
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Non-Hermitian effective PT-symmetry restoration from structural disorder

Frontiers Of Physics
SUTD Authors: Ang Yee Sin.
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