SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
FACULTY OF ENGINEERING
Website: https://cde.nus.edu.sg/ece

Area: Microwave & Radio Frequency

Host: Assoc Prof Qiu Chengwei

TOPIC	**:**	**Twisted Interfacial Thermal Metadevice**
SPEAKER	**:**	**Mr Li Huagen** **Graduate Student, ECE Dept, NUS**
DATE	**:**	**Wednesday, 29 December 2021**
TIME	**:**	**2:00 PM to 2:30 PM**
WEBINAR	**:**	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/9483870935?pwd=S2pBaG14aitGR29kTjJRbm0xWGJNUT09** **Meeting ID：948 387 0935** **Passcode: 927511**

ABSTRACT

Thermal metamaterials or metadevices with a convective component which can actively tune heat flux at will have demonstrated the potential application advantages in transforming thermodynamics. However, thermal modulations are usually confined to in-plane operations. Recently, the out-of-plane modulation are both quite hot, especially the precise control of the twisted bilayers in photonics. Thereby, we propose a twisted interfacial thermal metadevice, flexibly modulating the heat flux just via the change of the twisted angle which is one of the so-called out-plane thermal operations. Interestingly, we just need to quickly modulate the twisted angle rather than renewing component or rotating some parts to realize the thermal multifunction again, which is quite more feasible for the rapid deployment of multifunctional thermal metadevices. Meanwhile, the thermal Janus effect via the twisted thermal operation is also shown in simulations. It also opens more out-plane thermal modulation methods for designing novel twisted interfacial thermal metadevices.

BIOGRAPHY

Li Huagen received his B.Eng. degree and Master degree at HUST and BUAA in 2015 and 2018, respectively. He is now a Ph.D. candidate at ECE of NUS. His research interests mainly focus on Thermal Metamaterial.