SEMINAR ANNOUNCEMENT

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

Area: Microwave & Radio Frequency (MWRF)

Host: Prof Qiu Cheng Wei

TOPIC	:	**Full Phase Manipulation Enabled by All-Dielectric Metasurface Resonances**
SPEAKER	:	**Mr Wei Heng** **Graduate Student, ECE Dept, NUS**
DATE	:	**Monday, 10 November 2025**
TIME	:	**10:00AM to 10:30AM**
VENUE	:	**Join Zoom Meeting:** **https://nus-sg.zoom.us/j/85213591916?pwd=UdbtJsZeHdcujrDK7G5wlGhgtjF6NM.1** **Meeting ID: 852 1359 1916** **Passcode: 526938**

ABSTRACT

A novel model for unlocking a full 2π phase modulation in the co-polarized transmission channel is proposed. Based on the temporal coupled-mode theory, we unveil a unified condition for systems to achieve complete phase manipulation and uncover a new tuning knob for it. Guided by this model, we provide an all-dielectric metasurface design at the near-infrared range, achieving excellent agreements between theory and simulation results. We further combine this mechanism with the Pancharatnam-Berry phase and realize individual phase manipulation for two orthogonal polarized transmission channels.

BIOGRAPHY

Wei Heng received his Bachelor's degree from The Hong Kong Polytechnic University in 2015 and his Master's degree from UCLA in 2020. He is currently a Ph.D. candidate in Prof. Qiu Cheng Wei's group. His research interests include photonic crystals, bound states in the continuum, exceptional points, and metasurfaces.

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