SEMINAR ANNOUNCEMENT

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

Area: Microwave & Radio Frequency

Host: Asst Prof Ho S Y, John

TOPIC	**:**	**High-Efficiency Selective Wireless Power Transfer Achieved by A Bistable Circuit**
SPEAKER	**:**	**Mr Cui Hongjian** **Graduate Student, ECE Dept, NUS**
DATE	**:**	**Friday, 14 January 2022**
TIME	**:**	**2.00PM to 3.00PM**
WEBINAR	**:**	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/89452702229?pwd=VmgyMThVUG4yY1pGbW40THJjMEQrZz09** **Meeting ID: 894 5270 2229** **Passcode: 114999**

ABSTRACT

The study of wireless power transfer (WPT) is boosting with the expanding market of electronics such as mobile phones, electric vehicles, and wearable devices. Whereas most studies focus on single-transmitter, single-receiver model, selective WPT with multiple receivers has attracted scientific interest. In the conventional magnet resonant power transfer system, precise frequency tuning and coupling coefficient tuning are needed to optimize the WPT efficiency. To avoid such need, Parity-Time (PT) Symmetric electronics with carefully designed gain and loss profiles have been introduced in 2-level WPT. Such system is claimed to be efficient and robust for power delivery to a moving distance in previous research. In our study, to achieve high-efficiency selective WPT with multiple receivers, we utilize a strong coupled PT-Symmetric circuit working at the boundary in the bistable region. The experiment shows a WPT efficiency of 65% to the object receiver can be achieved without dynamic frequency tuning when 3 receivers are presented.

BIOGRAPHY

Cui Hongjian received his bachelor's degree from department of Mechanical Engineering in National University of Singapore (NUS) in 2018. He is currently pursuing Ph. D degree in Department of Electrical and Computer Engineering in NUS. His research focuses on physics and math behind wireless devices.

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