

**DEPARTMENT OF MECHANICAL ENGINEERING****SEMINAR****Online**

**Title:** Design of Frequency Dependent Beam Steering Antennas Based on Waveguide Feeding

**Speaker:** Mr. Jianwen Zhong (PhD candidate)  
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**Date:** 3 May, 2022 (Tuesday)

**Time:** 10:00 a.m. (Hong Kong Time)

**Zoom meeting:** 1) Link to join the meeting:

<https://hku.zoom.us/j/93866035887?pwd=MTgxbXBRMTdUb0hiZDVaL3dBd29vUT09>

2) Meeting ID: 938 6603 5887

3) Password: 20220503

**Abstract:**

In the last decade, the application of beam steering antennas and arrays to microwave and millimeter wave imaging for breast cancer detection, contactless security check and brain stroke monitoring has become important. Due to its non-ionizing radiation nature, low cost and potential for fast reconstruction imaging, scientist and engineers have made more efforts on developing hardware and software this kind sensing systems. The straightforward method to the design of frequency beam steering antennas is based on the leaky wave antenna. However, traditional leaky wave antennas suffer from narrow scanning angular range, wide frequency scanning range and degradation in the broadside direction. These drawbacks greatly restrict potential applications of leaky wave antennas for use in frequency beam scanning. In here, we propose an all-in-one leaky wave antenna design, which features high scanning rate, continuous scanning capability across the broadside, 45 degrees linear polarization or circularly polarization, single-layer configuration, and single-side radiation. Also, we try to design optical antennas, which go beyond the existing technology of leaky-wave antennas by using periodic structures.

**ALL INTERESTED ARE WELCOME**

For further information, please contact Dr. W.D. Li at 3917 8982.

**Research area: Energy**