Department of Physics
THE UNIVERSITY OF HONG KONG

Physics Colloquium

Topological Metamaterials: New Physics and Applications

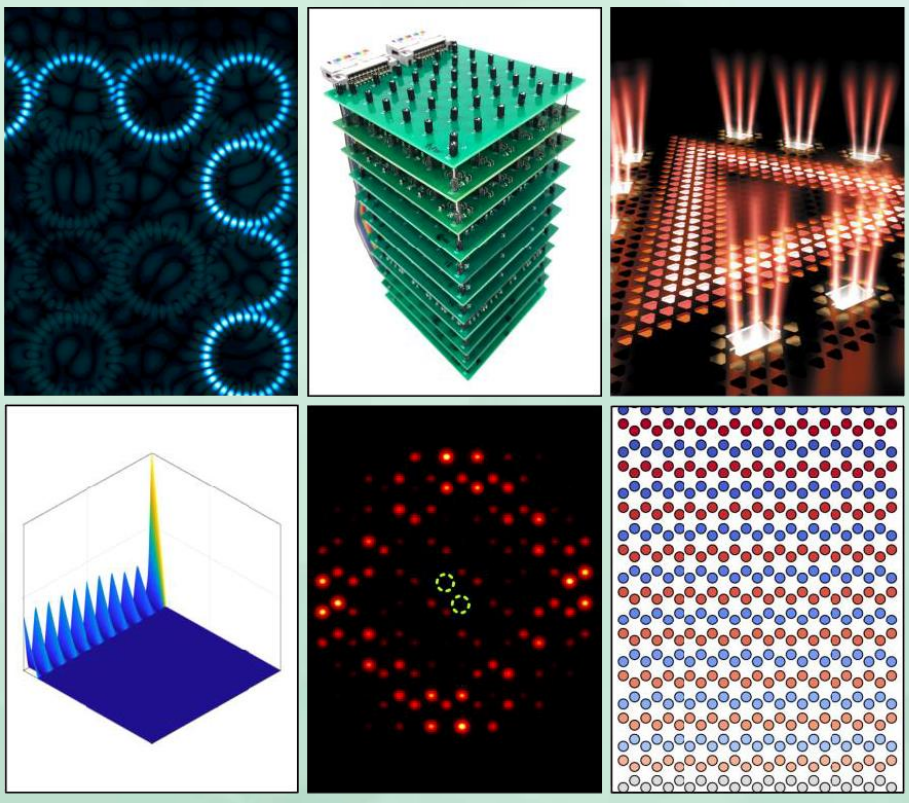
Date: November 24, 2021 (Wednesday)
Time: 10:00 a.m.
Zoom Online Lecture: https://bit.ly/3jpUBBI
Meeting ID: 988 1637 4807
Password: 2859

Dr. Yidong Chong
Nanyang Technological University

Abstract:
Topological phases of matter, such as topological insulators and Weyl semimetals, originated in the study of quantum materials. Over the past decade, the special features of topological phases have been reproduced using various specially designed metamaterials, in which electromagnetic, acoustic, or electrical waves take over the role of the electronic wave function. In this talk, I will describe how these synthetic structures provide exciting new playgrounds for testing our theoretical understanding of topological phases.

I will survey the possibilities for using topological metamaterials to realize phenomena that are challenging or impossible to access in real quantum materials, including engineered disorder, high spatial dimensions, nonlinearity, and non-Hermiticity. The talk will conclude with a discussion of the prospects for new technological applications, such as disorder-resistant waveguides, topological lasers, and efficient photon sources.

Biography:
Yidong Chong graduated with a BSc (Physics) from Stanford University in 2003, and received a PhD (Physics) from MIT in 2008. From 2008-2012, he worked at Yale University as a postdoctoral researcher. In 2012, he joined Nanyang Technological University as faculty member. His research interests span a variety of topics in theoretical photonics and condensed matter physics, including topological photonics and non-Hermitian photonics.



Anyone interested is welcome to attend!

Phone: 28592360 Fax: 25599152