

# 3-D, fluid-permeable structures for energy, sensing, and catalytic applications

## *Seminar*

Monday

Sept. 16 2024

3:00 – 4:00 p.m.

Beaupre Center,  
Room 105

This seminar will describe new methodologies that use flow permeable structures for energy, sensing and catalytic applications and will highlight the benefits of using three-dimensional fluid-permeable structures on various systems. More specifically, the seminar will present a) methods to convert inexpensive 3D fluid permeable structures (e.g., paper, fabric, wire mesh, and metallic foam) to fully functional 3D fluid-permeable electrodes for energy, sensing and catalytic applications, b) proof-of concept applications of fluid-permeable structures for the ultrasensitive detection of bacteria or other analytes, or instant decontamination of samples, c) 3D paper-based and fabric-based p-type organic thermoelectric materials that could be used in wearable thermoelectric devices.

**Dionysios C. Christodouleas**

Associate Professor

Department of Chemistry,

University of Massachusetts Lowell