THE UNIVERSITY OF HONG KONG

DEPARTMENT OF MECHANICAL ENGINEERING

SEMINAR

Online

Title: **Rubbery and curvy electronics for human and machines**

Speaker: **Dr. Cunjiang Yu**
Associate Professor
Department of Mechanical Engineering
University of Houston
USA

Date: **31 March, 2021 (Wednesday)**

Time: **11:00 a.m. (Hong Kong Time)**

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

https://hku.zoom.us/j/97174912482?pwd=QWl4SHJlNGNaSFErZ0RlWnUvak9EQT09

2) Meeting ID: 971 7491 2482

3) Password: 076584

Abstract:
Electronics that can seamlessly integrate with human body could have imminent importance in addressing grand societal challenges in health and robotics. However, seamless integration is a grand challenge because of the distinct nature between electronics and human body. Conventional electronics are rigid and planar, made out of rigid materials. Human body are soft deformable and curvilinear, comprised of biological organs and tissues. Our approach is to create soft and curvy electronics to solve the challenge.

This talk will firstly introduce a recently developed, new type of soft electronics, namely "rubbery electronics". Rubbery electronics is constructed all based on elastic rubbery electronic materials, with tissue-like softness and mechanical stretchability. Rubbery electronic materials and device innovations set the foundation for rubbery electronics. Fully rubbery transistors, integrated electronics, and smart artificial skins will be demonstrated. Their usages in medical and robotics will be illustrated. This talk will then present the development of 3D curvy electronics, which is important yet technically challenging to create. With the invention of conformal additive stamp (CAS) printing, a high fidelity and versatile manufacturing technology, a variety of curvy electronics such as smart contact lenses, and bioinspired curvy imagers, have been successfully developed and will be demonstrated.

Biography:

Dr. Cunjiang Yu is the Bill Cook Associate Professor of Mechanical Engineering at the University of Houston. He is also a core faculty member in the Materials Science and Engineering program and holds joint appointments in Departments of Electrical and Computer Engineering, Biomedical Engineering. He obtained his Ph.D. in Mechanical Engineering at Arizona State University (2007-2010) and did postdoc training at the University of Illinois at Urbana-Champaign (2010-2013) before joining the faculty of University of Houston. His lab concerns the manufacturing, materials and device innovations of soft electronics for health and robotics. Dr. Yu is a recipient of the SES Young Investigator Medal, NSF CAREER Award, ONR Young Investigator Award, NIH Trailblazer Award, MIT Technology Review Top Innovator of China, SPIE Rising Researcher Award, SME Outstanding Young Manufacturing Engineer Award, AVS Young Investigator Award, etc.

ALL INTERESTED ARE WELCOME

For further information, please contact Dr. P.K.L. Chan at 3917 2634.

Research area: Energy