Towards Soft Robotics for Biomimetics and Applications: Emerging Sensors, Actuators, and Methods

Organized by: Gen Endo, Yang Shen, Ka-Wai Kwok, Jacob Rosen, Hao Su, Kenjiro Tadakuma, Toshio Takayama, Kit Hang Lee

Program

Date: July 8, 2019
Time: 9:30am - 5:00pm
Venue: Conference Hall 07, Level 2, Building 10W, Phase 2

Abstract:
During the past few years, advancement in material sciences, additive manufacturing, flexible electronics, sensor/actuators, and intelligent computation/algorithms creates new opportunities for research and development of soft robots. The paradigm shifts from rigid contact towards soft interaction enable not only a safer physical human-robot interaction but also new forms of robots thanks to passive adaptability and light-weight design. The full-day workshop brings experts in the field together to present the state-of-the-art work and discuss the trend of enabling technologies for soft robots that are either biomimetic or for real-world applications such as advanced tendon actuation, pneumatic artificial muscles, musculoskeletal mechanism, biomimetic locomotion, smart and flexible sensors, compliance control, etc.

List of Presenters:

- Koichi Suzumori (Tokyo Institute of Technology)
  Presentation Title: Soft Robotics as E-kagen Science
- Gen Endo (Tokyo Institute of Technology)
  Presentation Title: Development of “Super” tendon-driven mechanisms using high tensile strength synthetic fiber ropes
- Toshio Takayama (Tokyo Institute of Technology)
  Presentation Title: Bundled tube locomotive device: the first idea came from the movement of a microorganism
- Kenjiro Tadakuma (Tohoku University)
  Presentation Title: Fiber Jamming Gripper Mechanisms with High Protection Ability
- Paddy Chan (The University of Hong Kong)
  Presentation Title: Smart flexible sensors based on organic electronics
- Hongliang Ren (National University of Singapore)
  Presentation Title:“ ollaborative Robotics with Continuum and Compliance
- Li Zhang (Thr Chinese University of Hong Kong)
  Presentation Title: TBD