

IEEE Robotics and Automation Society Japan Joint Chapter Webinar in 2025 Summer

# Frontier of Soft Robotics

Date: 25th of July

Webinar Platform: Zoom

Registration Fee: Free

Time:

JST : 8:00 PM – 10:00 PM

CEST: 1:00 PM – 3:00 PM

PDT : 4:00 AM – 6:00 AM

Moderators:

Kensuke Harada (The Univ. of Osaka)

Kenichi Ohara (Meijo Univ.)

Takahiro Ikeda (Gifu Univ.)

Toshihiro Nishimura (Kanazawa Univ.)

Registration  
from Here!!



## 20:00-20:40 Talk1: My Soft Robotics: Past and Future

Speaker: Koichi Suzumori (F-REI)

Abstract:

First, I will provide an overview of my soft robotics research to date, covering topics such as FMA, thin artificial muscles, their medical applications, support suits, and our work within the Grant-in-Aid for Scientific Research on Innovative Areas (KAKENHI) project. Following this, I will introduce two emerging areas in soft robotics that I am currently exploring: deep biomimetic robotics and power soft robotics.

## 20:40-21:20 Talk2: Soft Sensors and Adaptability

Speaker: Koh Hosoda (Kyoto Univ.)

Abstract:

Soft sensors are crucial for realizing adaptability of bio-mimetic robots. However, it is normally very expensive to develop soft sensors since they require a lot of engineering. In the talk, I will present some soft sensors developed in our laboratory realizing adaptive behaviors of robots while they are relatively cheap. Taking the context how the robot achieve the task facilitates the outputs of sensors, and as a result, the robot can reduce computational cost for adaptive behaviors. Realizing intelligent behaviors by soft sensors, we can learn the role of proprioceptive sensors for generating adaptability.

## 21:20-21:40 Talk3: Autonomy-preserving assistive systems

Speaker: Tetsuyou Watanabe (Kanazawa Univ.)

Abstract:

Various assistive devices have been developed for individuals with motor impairments, but few prioritize user autonomy. This talk introduces soft robotic technologies designed to support self-directed actions. We developed a wearable device with fabric-based actuators that stiffen and expand with air, helping users dress more easily by maintaining garment shape and reducing wrinkles. The same actuator concept is used to assist sit-to-stand motion, encouraging initiation of movement through light touch around the pelvis-particularly useful for individuals with Parkinson's disease. These technologies aim to enhance independence by supporting, not replacing, users' actions.

# Speakers Bio.

## Prof. Koichi Suzumori



Koichi Suzumori received the Ph.D. degree in mechanical engineering from Yokohama National University in 1990. He had worked for Toshiba R&D Center from 1984 to 2001, and also worked for Micromachine Center from 1999 to 2001. He was a professor at Okayama University from 2001 to 2014 and at Tokyo Institute of Technology since 2014. He has been a professor emeritus, Institute of Science Tokyo and a power soft robotics unit leader of Fukushima Institute for Research, Education and Innovation (F-REI). He is directors of s-muscle Co., Ltd. and H-MUSCLE Co., Ltd.

## Prof. Koh Hosoda



Koh Hosoda received his Ph.D. in Mechanical Engineering from Kyoto University, Japan, in 1993. He was an Assistant Professor in the Mechanical Engineering Department at Osaka University from 1993 to 1997. He became an Associate Professor in the Graduate School of Engineering, Osaka University from 1997 to 2010. In addition to his roles at Osaka University, He was a Guest Professor in the Artificial Intelligence Laboratory at the University of Zurich from April 1998 to March 1999. He also acted as the Group Leader for the JST Asada ERATO Project from 2005 to 2010. He was a Professor in Graduate School of Information Science and Technology from 2010 to 2014 and in Graduate School of Engineering Science from 2014 to 2023, both in Osaka University. He became an Emeritus Professor of Osaka University from 2023. Currently, he is a Professor in the Graduate School of Engineering, Kyoto University.

## Prof. Tetsuyo Watanabe



Tetsuyou Watanabe is a professor with Kanazawa University. He received the B.S., M.S., and Dr.Eng. degrees in mechanical engineering from Kyoto University, Kyoto, Japan, in 1997, 1999, and 2003, respectively. From 2003 to 2007, he was a Research Associate with Yamaguchi University, Japan. From 2007 to 2011, he was an assistant professor with Kanazawa University. From 2011 to 2018, he was an associate professor with Kanazawa University. Since 2018, he has been a professor with Kanazawa University. From 2008 to 2009, he was a visiting researcher at Munich University of Technology. Currently, he serves as Co-chair of TC on Rehabilitation and assistive robotics in IEEE RAS, GC of IEEE-RAS International Conference on Soft Robotics (RoboSoft 2026), and GC of RSJ2026.