

Development and assessment of the dielectric elastomer actuators using dielectric elastomer actuator

Date	Place	Partner Organization	Students' Major and Grade	Participants' Information	SIT Instructor
November 19 ~December 4, 2020	Japan	King Mongkut's University of Technology Thonburi Universiti Teknologi Malaysia	Department of Engineering Science and Mechanics • Undergraduate 2nd grade • Undergraduate 4th grade • Master 1st grade • Master 2nd grade	(SIT) Students 23, TA 1, Professor 3 (King Mongkut's University of Technology Thonburi) Students 9, Professor 1 (Universiti Teknologi Malaysia) Students 7, Professor 1	HASHIMURA Shinji (Department of Engineering Science and Mechanics) HOSOYA Naoki (Department of Engineering Science and Mechanics) MAEDA Shingo (Department of Engineering Science and Mechanics)



Global Project-Based Learning (GPBL) 2020 We're connected online! "Getting Dielectric Elastomer Actuator (DEA) Working"

HOST: Shibaura Institute of Technology (SIT)
Prof. Shinji Hashimura
Prof. Naoki Hosoya
Prof. Shingo Maeda

Coordinator:
Ardi Wiranata (Doctoral Student, Maeda lab.)



Image1 Opening

We convened three-university global Project-Based Learning (GPBL) 2020 via online from November 19 to December 4. Host university is Shibaura Institute of Technology (SIT). Guest universities are King Mongkut's University of Technology Thonburi (KMUTT) in Thailand, and Universiti Teknologi Malaysia (UTM) in Malaysia, respectively. The GPBL consists of forty-five people including five professors and one coordinator. A theme of the GPBL was set to "Getting Dielectric Elastomer Actuator (DEA) Working", because DEA is receiving attention from many researchers in soft robotics area in the world as an artificial muscle. For example, a group has realized the DEA of which an electrode is used to graphite with driving frequency of up to 3 kHz. We used Graphite to make the DEA because Graphite is safe, inexpensive, and biodegradable. We hope that Graphite is a next-generation flexible electrode material.

- Member
KMUTT
Prof. Danai Phaoharhansa (nine students)
UTM
Prof. Ahmad Athif Mohd Faudzi (seven students)
S.I.T.
Prof. Shingo Maeda (ten students)
Prof. Naoki Hosoya (seven students)
Prof. Shinji Hashimura (six students)
Coordinator: ArdiWiranata (Doctoral Student, Maeda lab.)



Image2 Team Soft Machine



Image3 Presentation slide of Group 4

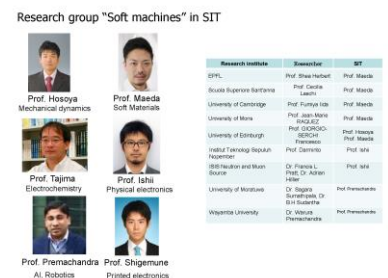


Image4 Dielectric elastomer Actuator