



Seminar/Talk

Fiber-based artificial muscles and sensors for human-machine-interface

Mehmet Kanik

MIT

Host: Michael Sixt

Human-machine-interface (HMI) systems are required to monitor human health for personalized medical diagnosis and treatments to restore the biomechanical activity of patients with musculoskeletal disorders using wearable and implantable fiber devices such as fiber-based soft robotics, artificial muscle, prosthetics, smart textiles, closed-loop feedback sensors, energy harvesting systems, and brain-machine-interface. Current HMI technologies are not yet satisfactory for daily use due to their weight and rigid robotic structure. These technologies limit natural movement and have a high cost. Wearable and implantable HMI systems that monitor metabolic and biomechanical activity and provide mobilization with artificial muscle actuators may revolutionize the HMI concept because of their lightweight, low-cost, high-power output, and versatile functionality. In this talk, I will discuss key and fast-developing subjects for HMI applications in multi-material (polymer, metal, and semiconductor) functional fibers and fiber-based devices, such as strain-programmable and fiber-based artificial muscles and piezoelectric fiber-based artificial skin.

Tuesday, March 10, 2020 10:00am - 11:00am

Mondi Seminar Room 2, Central Building



This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: <https://ista.ac.at/en/campus/how-to-get-here/> The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.