

סמינר - SEMINAR

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ב' 07.06.21
(כ"ז בסיוון תשפ"א), בשעה 15:00 (**Israel time**) באמצעות הזום :
<https://technion.zoom.us/j/92291139112>

מרצה:

Mingyi Liu, Ph.D.

Post-doc Researcher, Center for Energy Harvesting Materials and Systems (CEHMS)
Department of Mechanical Engineering, Virginia Tech

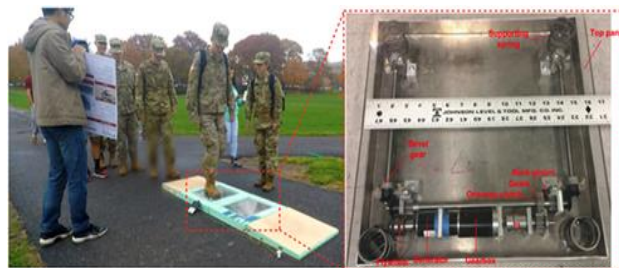
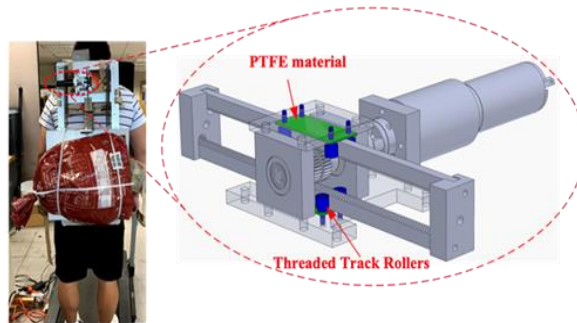
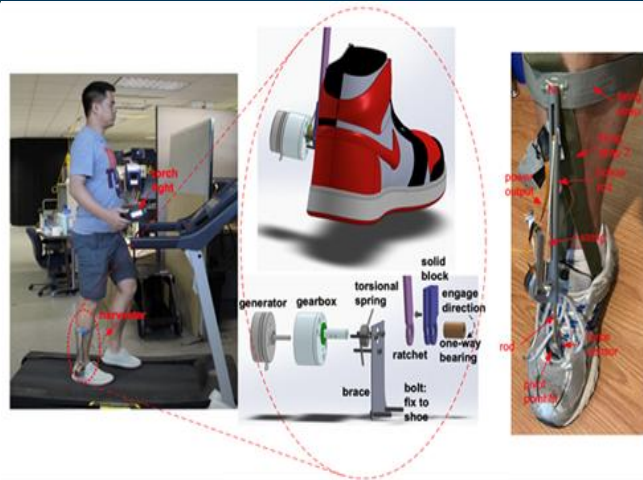
על הנושא:

Energy Harvesting from the Human Body for Wearable and Mobile Devices

The seminar will be given in English

להלן תקציר ההרצאה:

Wearable and mobile devices, such as smartwatches, smartphones, and wearable medical devices, have become a very important part of our daily life and current trends show they will become even more critical to us in the future. However, almost all of them are powered by batteries, which have limited energy capacity and are harmful to the environment during disposal. Periodically recharging or replacing batteries is inconvenient, burdensome, and sometimes even impossible. The power consumption of those devices on average is less than 1 W and is still decreasing due to technology advancement. While on the other hand, there is a huge amount of energy stored in the human body and we are dissipating the energy at a rate of more than 100 W on average. If only a small fraction of the human-body energy can be harvested, it is enough to power wearable and mobile devices. By sourcing locally and using locally, human-body energy harvesting is a promising solution. In my research, I explored multiple opportunities to harvest energy from the human body, including the energy harvesting backpack, the energy harvesting tile/paver, and the negative-muscle-work energy harvester, to provide a sustainable power supply for wearable and mobile devices. In this talk, I will show my recent work in designing, dynamic modeling, prototyping, as well as testing those devices, and their dynamic interactions with the human body. I will also share my vision for the future, including the potential challenges and opportunities in human body energy harvesting.



Speaker Bio: Mingyi Liu is currently a post-doc researcher at the Department of Mechanical Engineering, Virginia Tech, VA, U.S. His research interests span from energy harvesting, sensors/instruments, mechatronics, to dynamics/vibrations. He received his Ph.D. from Virginia Tech (major: mechanical engineering) and master's degree from Beihang University (major: precision Instrument), Beijing.

מארח : פרופ' פנחס בר-יוסף

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