Chemical and Biological Engineering
Seminar Announcement

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“Polymer Films Created by Reactive Vapor Deposition and Their Application in Wearable Electronics”

November 25, 2019
12:00 Noon
SciTech Room 136
Efforts in using reactive vapor deposition to create functional polymer films on nontraditional substrates will be described. Vapor coating methods allow for rough and/or fragile substrates to be nondestructively coated with a variety of polymer films. To date, various off-the-shelf garments, commercial textiles, threads/yarns, plant leaves, and flower petals have been conformally coated with either electronic-polymer or polyacrylate films. Selected technologies created using vapor-coated fibers, textiles and plant matter will be described, including: smart joint braces for movement sensing; garments for sleep monitoring; lightweight, small-form-factor supercapacitors that can be sewed or knitted into garments for wearable and portable energy storage; flexible electrodes for bioimpedance spectroscopy; and tattooed plants as sensors for environmental stress.