SCIENTIFIC SYMPOSIUM

Friday, May 29th – h10:00

Room 1.5 – Campus Salute

Professor Thuc-Quyen Nguyen

will give a presentation on:

Sustainable Semiconductors for Emerging Technologies

Organic semiconductors (OSCs) are a class of carbon-based semiconducting materials comprising of alternate single and double bonds (conjugated pi-bonds). They can be synthesized to have band gaps from the UV to the near infrared regions of the electromagnetic spectrum. OSCs are attractive due to their unique properties: light weight, mechanical flexibility, low cost, low-temperature synthesis and processing, and simple fabrication methods such as roll-to-roll coating, spray coating or ink-jet printing into desired size and shape. Thus, they are considered as “green” semiconductors due to having lower carbon footprints as compared to their inorganic counterparts. Such materials are expected to form the basis of new emerging technologies — called the Organic Electronics. OSCs have been implement in commercial products such as displays and lightings and have potential applications in transistors, solar cells, photodetectors, thermoelectrics, ratchets, sensors, neuromorphic computing, and bioelectronics. In this talk, I will discuss the development and characterization of OSCs for applications in organic photovoltaics, organic photodetectors and organic electrochemical transistors.

Thuc-Quyen Nguyen is the Director of the Center for Polymers and Organic Solids, and Distinguished Professor (Essam Khashoggi Chair in Materials Chemistry) in the Department of Chemistry & Biochemistry at the University of California, Santa Barbara (UCSB). Professor Nguyen has co-authored more than 300 publications that received over 43,000 citations (H-index: 106). Her recent awards include: the Alexander von Humboldt Senior Research Award (2015); Fellow of the Royal Society of Chemistry (2016); Hall of Fame - Advanced Materials (2019); World’s Most Influential Scientific Minds (2015–2019); Fellow of the American Association for the Advancement of Science (2019); Wilhelm Exner Medal (2023); and Elected Member of the National Academy of Engineering (2023).