

CCR Impromptu Seminar



Wei-Chuan Shih,

Cullen Professor

Electrical & Computer Engineering

University of Houston

Nanobiophotonic liquid biopsy

Light-matter interactions can provide rich compositional information from various samples in a non-invasive fashion. Our laboratory has developed opto-analytical spectroscopy, imaging, and sensing technologies to address unmet needs across various biological length scales including molecules, vesicles, cells, and tissue. The central innovations in our work include nano and microengineering, imaging and spectroscopy instrumentation, and machine learning techniques. I will discuss some plasmonics-related examples in this seminar. Harnessing localized surface plasmons (LSP) and coupling modes, we have engineered enhanced light-matter interactions near nanostructured surfaces for molecular sensing, catalysis, photothermal manipulation, and single extracellular vesicle profiling. Detection of blood circulating biomarkers, known as “liquid biopsy”, can potentially increase accuracy by revealing the “invisible”. I will discuss the potential of our nanophotonic technologies in liquid biopsy.

Venue: Lecture Hall B2 Borschkegasse 4a

Time: June 23th 2023, 11:00

Host: Klaus Holzmann