Chrysafis Andreou
Lecturer, ECE

School of Engineering Seminar Series

Surface enhanced Raman scattering nanoparticles for biodetection and medical imaging

Wednesday, 19 May 2021, 12:00 – 13:00
For seminar attendance, click here.
Meeting ID: 916 1753 6844, Passcode: 623512

Abstract:

Molecules in our bodies and our environment have a profound impact on our health and well-being. But their small size and low abundance makes them hard to detect. Nanotechnology is a powerful tool that can help reconcile the scale of molecules with our human scale.

In our lab we develop nanoparticles for optical spectroscopic detection and imaging, as well as microdevices to engineer solutions for various health related applications. Some of our projects include the imaging cancer markers in animals and in organ-on-chip systems, analysis of breath and biofluids, and detection of antibodies against the coronavirus SARS-CoV-2.

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EMPHASIS RESEARCH CENTRE

Bio:

Chrysafis Andreou is a lecturer in the Electrical and Computer Engineering department and leads the Nanotechnology Imaging and Detection Lab. He has two B.Sc. degrees (Physics and Math) from the Pennsylvania State University (2006), M.Sc. in Electrical Engineering from University of Cyprus (2008), and Ph.D. from University of California Santa Barbara (2013).

He worked as a Research Scholar at the Memorial Sloan Kettering Cancer Center (New York, USA) where he engineered molecularly specific nanoprobes and developed new tumor imaging methods using Raman imaging (2014-2018).

His research is focused on engineering nanoparticles and microsystems for biomedical imaging and chemical detection based on surface enhanced Raman spectroscopy (SERS).

Some of the most relevant applications include imaging of the tumor microenvironment, the detection of antibodies against SARS-CoV-2, methamphetamine in saliva, antibiotics in milk, and real-time analysis of gaseous flows and breath.

For more information, please contact
Tel: 22892236, 22892216
fae@ucy.ac.cy

University of Cyprus
Faculty of Engineering