

Meta-Atoms for 3D Printing Metamaterials

In this seminar, Prof Vardaxoglou will introduce the concept and uses of MeTa-Atoms (MTAs) in electromagnetic and engineered metamaterials. MTAs are meso scale inclusions in a host material. These meta-atoms could be varied in constitution and geometry to augment a variety of artificial and novel magneto-dielectric properties. Various 3D-printed multi-layered metamaterials with different periodicities of dielectric or metallic inclusions will be shown. The effect of the periodicity (space between adjacent elements) on the effective metamaterials properties is examined by placing the 3D-printed samples in a waveguide simulator or on a resonator measuring system. Some of these structures have already been applied in engineering applications such as antennas, microwave lenses and electronic devices.



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Yiannis Vardaxoglou is the Head of the Wireless Communications Research Group (WiCR) researching wide-ranging topics applicable to cutting-edge wireless communications technology. His research focuses primarily on metamaterial structures for electronic devices, antennas in microwave and mm-wave engineering. He has authored 300 publications and several book chapters and a pioneering book on Frequency Selective Surfaces. WiCR collaborates with many internationally leading universities and companies and is home to the internationally renowned Loughborough Antennas & Propagation Conference (LAPC).



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