

## Department of Electrical and Computer Engineering

**Title:** « From Victor Veselago and Leon Chua to Today: The Birth of Software Driven Functional Metasurfaces and The Integration of Memory Components with Metamaterials »

Kypros Kossifos, Ph.D. student, Department of ECE, University of Cyprus

**Wednesday, 21 March 2018, 17:00 – 18:00**

XOD02 013, New Campus - University of Cyprus

**Abstract.** Metamaterials were first proposed in the late 60s by Victor Veselago, and have since demonstrated many novel properties, such as negative refractive indexes, superlensing, anomalous reflection, perfect absorption and advantages in many RF, microwave and antenna designs. Tunable metamaterials have also shown additional functionality as well as programmability by incorporating software control.

Since the prediction of the memristor in the early 70s by Leon Chua, many memristor designs have experimentally verified its existence. The definition of memory components has also been expanded to include memcapacitors and meminductors.

In this presentation, an introduction to metamaterials and memory components will be presented, and it will be shown how these two concepts can be merged together. The design of memory components for metamaterial applications will be shown, and this will be incorporated in a programmable metasurface design.

**Biography:** Kypros M. Kossifos is a PhD student in the Department of Electrical and Computer Engineering at the University of Cyprus under the supervision of Dr. Julius Georgiou and Dr. Marcos A. Antoniadis. His research work is based on an ongoing FET-OPEN project called VISORSURF (A Hardware Platform for Software-driven Functional Metasurfaces). He has seven years of industry experience in analytical instruments and RF design.

He received the MSc degree in Electrical Engineering from the Department of Electrical and Computer Engineering at the University of Cyprus in 2015. His thesis topic was on fixed-beam leaky-wave antennas based on metamaterials, and was conducted under the supervision of Dr. Marcos A. Antoniadis.

Prior to this, he was a member of the Wireless Communications & e-Applications research group during the period from May 2009 to Jan 2010, while being an undergraduate student in ATEI of Athens, where he graduated with honors in 2010. While in Athens, his research involved microwave and RF design related to an FP7 ICT REWID Project (Relay based Wireless Network and standard).