EMPHASIS is an interdisciplinary endeavour, involving researchers from departments in both the School of Engineering and the School of Pure and Applied Sciences of the University of Cyprus. The aim of EMPHASIS is to stimulate economic growth through the development of cutting-edge KETs (key enabling technologies) in Electronics, Microwaves, Photonics and Sensors. Our centre’s name was chosen not only to reflect these four main pillars, but also to put emphasis on the importance of these underlying technologies to a myriad of applications. Everyday items such as smartphones are based on the very technologies we focus on, including antennas, wireless circuits and sensors. Our work also finds application in several other research areas, among them the Internet of Things, biomedical devices, space technology and industrial sensors.

OUR VISION IS NOT SIMPLY TO CONDUCT RESEARCH AS AN ACADEMIC PURSUIT, BUT TO ALSO LINK IT TO SOCIETAL DEVELOPMENT AND ECONOMIC GROWTH.

Our vision is not simply to conduct research as an academic pursuit, but to also link it to societal development and economic growth. Through industrial collaborations, EMPHASIS aims to be a catalyst for the development of high-tech in Cyprus, especially in the health and communications sectors. A key aspect of our centre is the blend of both young and experienced researchers, who together are working on projects funded by national and European agencies (such as Horizon 2020 and the European Space Agency). In future issues of the newsletter, we will be highlighting our contributions arising from these projects and our goal for advancing Cyprus’ place in the world of high-tech.

Prof. Stavros Iezekiel
Director EMPHASIS Research Centre
HAVE IN MIND THAT:

Our researchers work across a broad spectrum of key enabling technologies which are applied to a variety of system applications. Some examples of our projects in electronics, microwaves & antennas, photonics and sensors and how they relate to biomedical, communication and monitoring systems are illustrated above.
STAVROS IEZEKIEL is the acting Director of EMPHASIS and a professor in the Dept. of Electrical & Computer Engineering.

His research area is microwave photonics, with a focus on photonic generation of mm-wave signals, photonics for space and biophotonics; in 1991 he received the IEE/NPL Measurements Prize. He was Editor-in-Chief of IET Microwaves, Antennas and Propagation (2009-2019), and is a Fellow of the IET and Fellow of the Institute of Physics. Prof. Iezekiel’s work has been funded both by industry and national/ European funding bodies, and has led to 19 Ph.D. graduates and over 160 papers.

JULIUS GEORGIOU is an associate professor in the Dept. of Electrical & Computer Engineering.
M.Eng in Electrical and Electronics Engineering 1998, Ph.D. 2003 Imperial College London

His research interests include biomedical circuits and systems, bioinspired electronic systems, low-power analogue application specific integrated circuits (ASICs), sensors, ASICs for adaptive metasurfaces, asynchronous-digital ASICs and non-invasive prosthetics. The overlying goal of this research is to learn from biology to create more efficient electronic systems and to use state-of-the-art electronic systems to repair/enhance biological systems.

MARCOS ANTONIADES is an assistant professor in the Dept. of Electrical & Computer Engineering.

He is the Director of the Microwaves and Antennas Laboratory, an Adjunct Fellow in the School of Information Technology and Electrical Engineering at The University of Queensland, Australia, and has authored over 80 refereed publications. His research area is applied electromagnetics with a focus on passive and active antenna design, RF/microwave circuits and devices, metamaterials and metasurfaces and applications of the above in broadband wireless communications, biomedical devices, satellite systems, radio-frequency identification, and wireless power transfer systems.

CHRYSAFIS ANDREOU is a lecturer in the Dept. of Electrical & Computer Engineering.
B.Sc. in Physics, B.Sc. in Mathematics, 2006 Penn State U., M.Sc. in Electrical Engineering 2008 Univ. of Cyprus, Ph.D. 2013 UC Santa Barbara

He is the head of the Nanotechnology, Imaging, and Detection Lab. Before joining UCY, he worked at the Memorial Sloan Kettering Cancer Center. His research interests include nanomedicine, molecular and biomedical imaging, and chip-based chemical and biological analysis.
**Grigorios Itskos** is an associate professor in the Dept. of Physics.

B.Sc. in Physics 1997 Aristotle U. of Thessaloniki, Ph.D. in Physics 2003 SUNY at Buffalo, USA

His research area is materials physics with interests in the optical spectroscopy of materials and optoelectronic properties of semiconductor structures and devices. He leads the Experimental Condensed Matter Physics Laboratory with current activities focusing on studies of semiconductor nanocrystals for light emitting and light harvesting applications.

**Agapios Agapiou** is an assistant professor in the Dept. of Chemistry.

Diploma Chemical Engineer 2001, PhD Chemical Engineer 2006 National Technical U. of Athens

He is the Director of the Volatolomics Research Laboratory. His research interests include the identification and mapping of volatile chemical signatures of human presence (emanating from expired air, urine, blood, sweat and other biological excretions); the monitoring of indoor/outdoor air quality for human exposure to environmental contaminants; the early diagnosis and monitoring of various diseases and metabolic disorders (by correlating VOCs with human metabolic pathways); the removal of emerging pollutants from the environment; the aroma analysis of food and beverages (e.g. nutrivolatolomics, smoke flavouring); and the analysis of fuels and natural gas.

**Theodosis Trypiniotis** is an assistant professor in the Dept. of Physics.

MSci. in Natural Sciences (Physics) 2002 University of Cambridge, Ph.D. in Physics 2008, Cavendish Laboratory, University of Cambridge

His research interests focus around spin physics of materials with emphasis on organic and inorganic semiconductors and magnetic nanostructures. The aim is to gain insights into the fundamental physics of spin in these systems as well as to develop sensing applications. He leads the Nanomagnetism and Spintronics Lab currently focusing on investigations of spin transport and spin dynamics in organic semiconductors and semi-metals and also on using magnetic nanostructures for geophysical remote sensing for energy and geothermal applications.

For more information please visit our website or contact us:

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