

## Department of Electrical and Computer Engineering

**Title: "Optical Data Centre Interconnects"**

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Athens Information Technology Center

**Wednesday, 06<sup>th</sup> December 2017, 17:00 – 18:00**

Room XOD02 – 117, New Campus – University of Cyprus

### **Abstract:**

The presentation will discuss first the main drivers for the development of advanced optical interconnects, the challenges that need to be addressed and evolving trends, outlining the DCI Ecosystem and the relevant market opportunities. It will then cover the possible technologies and transceiver design options for +100G DC point-to-point interconnects, focusing on the cost and power consumption for most popular +100G DCI transceiver options. We will then focus on the possible role that optical switching can play in Data Centers and the possible options will be covered highlighting their pros and cons.

### **Biography:**

Dr. Ioannis Tomkos (B.Sc., M.Sc., Ph.D.), is with the Athens Information Technology Center (AIT), since Sep 2002. He was elected "Chair of Excellence Professor" (Cátedras de Excelencia) in 2017 at the University Carlos III (Madrid, Spain), "Adjunct Professor" at the College of Optical Sciences of University of Arizona (2013) and "Adjunct Research Fellow" at the ECE Department at University of Cyprus (2014). In the past, he was an Adjunct Faculty member at the Information Networking Institute of Carnegie-Mellon University, USA (2002 - 2010), senior scientist (1999 - 2002) at Corning Inc. USA and research fellow (1995 - 1999) at University of Athens, Greece. At AIT he founded and serves as the Head of the "High Speed Networks and Optical Communication (NOC)" group that was/is involved in many EU funded research projects (including 4 currently active; top performer over the past decade in EU funded projects on the topic of optical communications and networks), as well as in national and industry projects, within which Dr. Tomkos is representing AIT as Principal Investigator and had/has a consortium-wide leading role. Dr. Tomkos has received in 2007 the prestigious title of "Distinguished Lecturer" of IEEE Communications Society for the topic of "transparent optical networking". Together with his colleagues and students he has authored over 600 peer-reviewed archival articles (an updated list of all published items may be found using the "Publish or Perish" tool; over 390 IEEE sponsored items may be found through IEEE Xplore), including over 150 Journal/Magazine/Book publications and about 450 conference/workshop proceedings papers. His work has been received over 7500 citations (increasing currently with a rate of about 1000 per year) and his h-factor is 42 (as of Oct'17). He is included in the "Top H-Index" list of "Guide2Research" for the fields of "Computer Science & Electronics". For his research work he has been awarded several times (most notably with the "2014 IEEE/OSA Journal of Lightwave Technology Best Paper Award" and the "2001 Corning Outstanding Publication Award"). Dr. Tomkos has served as Chairman of the International Optical Networking Technical Committee of IEEE Communications Society

(2007-2008), Chairman of the International IFIP working group on “Photonic Networking” (2008-2009), Chairman of the International OSA Technical Group on Optical Communications (2009-2012) and Chairman of the IEEE Photonics Society Greek Chapter (2010-2013). He has been General Chair, Technical Program Chair, Subcommittee Chair, Symposium Chair or/and member of the steering/organizing committees for the major conferences (e.g. OFC, ECOC, IEEE GlobeCom, IEEE ICC, ICTON, ONDM, BroadNets, etc.) in the area of telecommunications/networking (more than 150 conferences/workshops). In addition, he is/was a member of the Editorial Boards of the IEEE/OSA Journal of Lightwave Technology (Deputy Editor), the IEEE/OSA Journal of Optical Communications and Networking, the IET Journal on Optoelectronics, the Springer Photonic Network Communications, etc. He is the co-editor (together with Prof. Biswanath Mukherjee) of the Springer Book Series on “Optical Networks”. Among many guest editorials for special issues, he was the Chief Editor for a 2012 special issue on “The evolution of Optical Networking” for the prestigious “Proceedings of IEEE”. He is a Fellow of the IET (2010) and Fellow of OSA (“for outstanding scientific contributions to the field of transparent optical networking” - 2012).