

Keynote Speech 3

Time: Thursday, 28 October 2021 16:00-16:50 (Tehran)

Title: Photonic Sensors: Doctrinal Conception and relevant cases

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Abstract: Photonics is considered the field of knowledge key for the development of the Organizations of the XXI century. For these organizations - such as the ones of the fourth industrial revolution or Industry 4.0 (I4.0)- sensors play an essential role. Photonic Sensors are a key area of sensors based on Light Sciences and Technologies. A Doctrinal Conception of Photonic Sensors as an “umbrella” in what any sensing approach using light can be easily included, will be offered in this invited lecture. To illustrate this general concept, a quit overview of significant cases using different principles, techniques, and technologies to detect diverse measurands in different sector applications will be offered. After this presentation, any sensing approach using Light will be easily identified as a Photonic Sensor in which optical fiber sensors is, really, a particular case.



José Miguel Lopez-Higuera received his PhD, with extraordinary, award from University Polytechnic of Madrid, Spain in 1989, where he investigated on integrated optics devices on LiNbO₃. He, has worked at University Laboral of Alcalá de Henares (1976-1986), at University Polytechnic of Madrid (1986-1991) and at University of Cantabria (since 1991) where he is Full Professor in Electronics and Photonics (since 2001). He has been teacher of 45 classes/promotions (since 1976) of Telecommunication Engineers in Spain. He founded and is the Head of the Photonics Engineering Group of University of Cantabria (since 1992), CIBER-BBN (2016) and IDIVAL (2017). He is the founder and director of International School on Light Sciences and Technologies (ISLIST) at UIMP where highly reputed speakers (including the Nobel Laureates such as Andre Geim, Sujhi Nakamura and Donna Strickland) are currently delivering invited lectures. He acted as General Chairman of EWOFS, 2004 and OFS23, 2014 and is co-founder of the new Master degree on Light Sciences and Engineering (CILuz) at the University of Cantabria. His research activities have been realized in the frame of more than 150 research projects (+70 with public and competitive funding) acting in +90 of them as manager, coordinator or principal investigator. He has authored or co-authored +850 research publications (including +190 in JCR Journals and +65 invited talks). He has also presented +25 patents and supervised +20 PhD theses. Editor and co-author of four R&D books. Co-Editor of several conference proceedings and magazines. Guest Editor of the Special Issues on Optical Fiber Sensors published on IEEE Sensor Journal (several Editions), on IEEE/OSA Journal of Lightwave Technology, on Optical Fiber Technology, and on SENSORS of MDPI. He is the Primary Guest Editor of special issue on Photonics for I4.0 on IEEE/JSTQE, 2021. He is cofounder of tech based companies: TELNOS, (2005), Empiric Technologies, SL (2010) and Sadiq Engineering (2011). Enabler of Edrónica: Technologies for unmanned vehicles (2016). Prof. López-Higuera is recipient of numerous awards and recognitions. He is Senior IEEE 1998, Fellow SPIE 2012, Fellow OSA 2014, Fellow of IAAM 2021 and Fellow VEBLEO 2021. He is also a member of the Royal Academy of Medicine of Cantabria (2014) and recipient of the Research Award of the Social Council of the University of Cantabria (2014) and The Lifetime Achievement Award by the EWOFS, Limerick, Ireland, May 2016, among others.