Prof. Branko Glisic, Princeton University, USA

Branko Glisic received his degrees in Civil Engineering and Theoretical Mathematics at University of Belgrade, Serbia, and Ph.D. at the EPFL, Switzerland. His thesis focuses on the development of fiber optic sensors for particular applications, and characterization of concrete at very early age. He was employed at SMARTEC SA, Switzerland, where he was involved in research and engineering at different levels of responsibility in numerous structural health monitoring (SHM) projects. Since February 2009 he has been employed as an Assistant Professor at Department of Civil and Environmental Engineering of Princeton University. His main areas of interest are SHM methods, advanced sensory systems, smart structures, SHM data management, and sustainable engineering. Prof. Glisic is author and co-author of more than hundred published papers, university and professional courses on SHM, and a book entitled "Fibre Optic Methods for Structural Health Monitoring" (2007). He is a member several professional associations (ISHMII, ACI, IABSE, IABMAS, ACSE, ISMA) and a member of editorial board of the ISHMII's magazine "The Monitor".

<u>Keynote abstract:</u>

Monitoring Civil Structures using Fiber Optic Sensors

Sustainable preservation of existing infrastructure and sustainable construction of new infrastructure represent goals that are essential for future vitality of economy and prosperity of any society. Structural health monitoring (SHM) emerged in the last two decades as a novel multi-disciplinary branch of engineering, with promising potential to help reaching the above goals. Several SHM methods based on application of various sensing technologies combined with specific data analysis algorithms have been researched, developed and with more or less success applied to real structures. Fiber optic sensing (FOS) technologies have significantly evolved and have reached their market maturity during the last decade. The main widely recognized advantages of these technologies are high precision, long-term stability, and durability. But in addition to these advantageous performances, FOS technologies provided with long-gauge and truly distributed strain sensors, which led to the development of new transformative SHM methods based on these types of sensors. Using these methods it is possible to affordably instrument large areas of structure, enabling global, large-scale monitoring based on long-gauge sensors, or integrity monitoring based on distributed sensors. These two approaches are presented in details along with enabling FOS technologies, and illustrated with applications on building, bridge, and pipeline.