



Academic Lecture I

- **Theme:** Developments on wave energy assessment and on devices for wave energy conversion
- **Speaker:** Carlos Guedes Soares
Centre for Marine Technology and Ocean Engineering (CENTEC)
Instituto Superior Técnico, Universidade de Lisboa
- **Time and Venue:** 9:00-11:00 am, July 4 2019, Meeting Room A301, SLCOE



Abstract:

A general overview is provided of the availability of wave energy worldwide. Methods are presented to determine the spatial distribution of the available wave energy and to determine the best siting for parks of wave energy devices. An overview is provided of the type of wave energy devices that are available and of the principles of functioning. A detailed description is provided of the methods to study Oscillating Water Column devices and recent results on studies of coastal and of floating devices are presented. The concept of a point absorber is introduced and developments on a concept of a platform with several point absorbers attached is described. A concept of a generic Power Take off system for point absorbers is introduced and some developments are described.

Biography:

Prof. Carlos Guedes Soares is a Distinguished Professor of the Engineering Faculty (Instituto Superior Técnico) of the University of Lisbon and the Head of the Centre for Marine Technology and Ocean Engineering (CENTEC), which is a research centre of the University of Lisbon that is recognized and funded by the Portuguese Foundation for Science and Technology. He received his MSc. degrees from the Massachusetts Institute of Technology in 1976, and his Ph.D. degree from the Norwegian Institute of Technology of the University of Trondheim in 1984, and his Doctor of Science degree from the Technical University of Lisbon in 1991. He has supervised more than 50 PhD students and has co-authored more than 700 journal papers. He has an h-index of 51 in Web of Science (62 in SCOPUS) and more than 13,000 citations (21,000 in SCOPUS). He has been publishing in probabilistic modelling and uncertainty analysis applied to different problems involving hydrodynamics and structural analysis of floating and fixed structures at sea. He has been coordinating the Symposium on Structures, Safety and Reliability of the Ocean, Offshore and Arctic Engineering (OMAЕ) Conference since 1989 and has been a Chair or Co-Chair of various conferences in the series of OMAЕ, ESREL, IMAM, MARSTRUCT, MARTECH and RENEW Conferences. He has been Editor (now Editor-in-Chief) of the Reliability Engineering and System Safety Journal (RESS) since 1992 and he is the Co-Editor-in-Chief of the Journal of Marine Science and Application and he is a member in Editorial board of about 15 Journals. He is a Fellow of ASME, SNAME, RINA, IMarEST, Ordem dos Engenheiros, Member of ASCE, AGU and SRA and a Member of the Portuguese Academy of Engineering.