

Department of Electrical and Computer Engineering

Title: «*PV Technology Research and Testing Infrastructure at the University of Cyprus*»

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Wednesday, 30th September 2015, 17:00 – 18:00
Room KENTP. E116, Old Campus – University of Cyprus

Abstract:

The research undertaken over the past years at the University of Cyprus PV Technology Laboratory focuses mainly in the fields of photovoltaic indoor and outdoor performance assessments, technology characterisation, performance and energy yield modelling, failure and degradation rate determination, energy yield forecasting and grid integration issues.

In particular, research in the field of photovoltaics was initiated in 2006 through the PV-Performance project (a joint collaborative project with the University of Stuttgart) where twelve latest photovoltaic technologies were installed and assess under the same climatic conditions in Cyprus and Germany. This was the first worldwide attempt and first time that the PV potential was evaluated as a function of the location in the scope of identifying and quantifying the capabilities and limitations of each technology. The performance of each PV system was also assessed against known used models and for each technology the strengths and weaknesses of each approach were identified. Useful information for the research community was also obtained by the degradation rate analysis, using advanced statistical techniques and formulated algorithms. The field of degradation is very important as in the fast evolving industry of PV there is a pressing need to determine the degradation rates accurately, in order to minimise investment risk - especially for emerging technologies such as thin-film. As a consequence of the success of the outdoor performance research, the Laboratory has since then enhanced in expertise and infrastructure and at present, operates state-of-the-art outdoor and indoor facilities for the characterisation, evaluation and monitoring of different PV technologies ranging from crystalline silicon to thin film, concentrators as well as novel organic, flexible and building integrated photovoltaics. Additional research work includes solar assisted desalination and cooling, grid integration and power quality issues in the presence of large penetration of solar energy, energy management systems and development of solutions for remote and accurate monitoring of PV systems.

Biography:

Dr. George Makrides is a research associate and the technical manager of the PV Technology Laboratory of the University of Cyprus. He has received his PhD by the University of Cyprus in 2012 and the MPhil degree in Engineering at Cambridge University in 2004, where he also received the Cambridge Commonwealth Trust scholarship. Prior to this he had received the BEng Honours degree in Electrical and Electronic Engineering at the University of London (First class Honours). During his undergraduate degree he had received various awards for academic excellence. He has published over 50 papers in international journals and conference proceedings and has participated in various local and European research funded projects. His work on the outdoor performance of PV technologies throughout the years, has been the initiation for the establishment of the PV outdoor infrastructure and testing centre in Cyprus for many manufacturers such as Honeywell, Q Cells and others. His research interests include renewable energy sources and grid integration issues.