

**Keynote speech/talk title:**

**Research Laboratory: “Analysis of Electrical and Energy”  
Systems Unit: Important achievements and Goals**

**Prof. Cherif Adnane**

Chair and Head Centre for Innovation Technology,  
Head Laboratory - Analysis of Electrical and Energy Systems Unit (ATEES), Tunisia  
Department of Physics, Analysis and Treatment of Electrical and Energy Systems Unit,  
Faculty of Sciences of Tunis El Manar, PB 2092, Belvedere, Tunisia  
Email: [adnane.cher@fst.rnu.tn](mailto:adnane.cher@fst.rnu.tn)  
[Adnen2fr@yahoo.fr](mailto:Adnen2fr@yahoo.fr)

**Prof, Dr. CHERIF Adnene** is a senior Professor at the Faculty of Sciences of Tunis, University of Tunis manar, specialized in Electronics and energy engineering. He has been teaching since 1991, electronics, automatic control and signal information processing for the Masters degree of Electronics and Computer Science. Besides, he is the founder and current head of the Professional Master of " Communications systems and Networks" of which he has been the Coordinator since 2003.

Mr CHERIF is also the Director of a research laboratory "Analysis of electrical and energy systems" composed of 70 teachers and researchers. He supervises several PHD doctorate thesis and masters in the fields of electrical engineering and renewable energies. He is the author and co-author of more than 100 publications in specialized journals and more than 150 communications in international conferences.

He is also working in the area of information technology and has wide industry, academic, consultancy and research experience. He is a member of several international scientific journals and research project evaluation committees. He participated and leads international research and development cooperation projects R&D with the European Union and the Maghreb region in the field of energy production, renewable energies and smart grids.

**Brief/Abstract of the talk:** The integration of renewable energy sources (characterized by their non-stationary and unpredictable nature) in the electricity grid currently poses technical, financial and management problems that limit their profitability and efficiency. Our goal is to study the effects of the connection of renewable energy conversion systems on the electricity network (basic and medium voltage) and the penetration rate of these decentralized energy production stations in the network. Indeed, current power grids are stable unidirectional energy transfer systems, and renewable power plants (PV and wind) are unpredictable decentralized sources, their connections to the grid can lead to problems such as instability and stall. This limits the rate of integration of renewable energies in the networks as well as their efficiency. Our objective is to study these phenomena and to propose adequate solutions to optimize the production, to control the connection and to guarantee the stability of the networks in order to increase the penetration rate of the renewable energies in the networks (LV and MV) and reduce the cost price.