
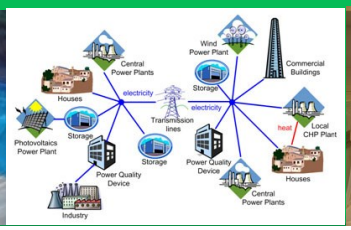

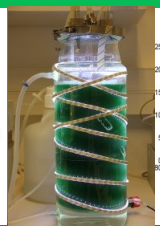
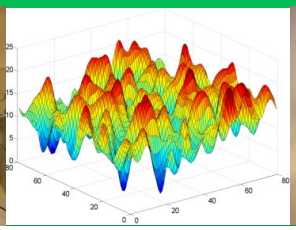

# ENTEG SEMINAR SERIES GUEST LECTURE

**Monday October 3rd 2016 , at 16.00, in room 5161.0151**

**FMNS staff and students are invited**

**Invited by Prof Ming Cao**

# Prof Brian Anderson

Research School of Engineering, Australian National University, Australia

# 75 Years from the Wiener Filter

*Abstract:*
Extracting useful signals from noise-contaminated versions of those signals is a signal processing problem that goes back many decades. There were three distinct bursts of activity resulting in advances which reflected the probabilistic aspects of the problem: the first was due to Wiener and Kolmogorov in the 1940s, the second due to Kalman in the 1960s and the third associated with developments in Hidden Markov Models, in the last 25 years or so. At the same time, the original applications domains for Wiener filtering were broadened unimaginably, to include today such diverse areas as EEG processing, modelling of national economies, localization of GPS-denied drones, evaluation of the efficacy of regimes for restricting domestic water usage, estimating the shape of an underwater towed array, and so on. During the past several decades the potential benefits and countervailing disadvantages of using what is known as smoothing were gradually uncovered. This talk will survey this progress, and highlight common features of Wiener, Kalman and Hidden Markov Models, with and without smoothing.

*Speaker's short biography*:
Brian D.O. Anderson was born in Sydney, Australia, and educated at Sydney University in mathematics and electrical engineering, with Ph.D. in electrical engineering from Stanford University in 1966. Following graduation, he joined the faculty at Stanford University and worked as Vidar Corporation of Mountain View, California, as a staff consultant. He then returned to Australia to become a department chair in electrical engineering at the University of Newcastle. From there, he moved to the Australian National University in 1982, as the first engineering professor at that university. He is now a Distinguished Professor at the Australian National University and Distinguished Researcher in National ICT Australia. He is a Fellow of the Australian Academy of Science, the Australian Academy of Technological Sciences and Engineering, the Royal Society (London), and a foreign member of the US National Academy of Engineering. He holds honorary doctorates from a number of universities, including Université Catholique de Louvain, Belgium, and ETH, Zürich. He served as IFAC President from 1990 to 1993. He was also President of the Australian Academy of Science from 1998 to 2002. His current research interests are in distributed control, sensor networks and econometric modeling.