The IEEE Montreal Section and Concordia University are inviting all interested IEEE Montreal members and other engineers and students to a technical seminar on:

"Energy Aware Computer Systems and Networks"

By: Professor Erol Gelenbe

Intelligent Systems and Networks Group
EEE Dept., Imperial College London, UK

DATE: **Monday September 09, 2013**.
Seminar Time: 6:30 p.m. – 8:00 p.m.
PLACE: 1515 Ste. Catherine West (corner with Guy St.), Concordia University, Electrical & Computer Engineering Department, **Room EV002.184** (with refreshment)

For info, please contact **Dr. Anader Benyamin-Seeyar** at anader.benyamin@ieee.org or http://ewh.ieee.org/r7/montreal/chapters/COM/index.html.

Abstract :
ICT is becoming one of the main culprits for CO2 emissions, already on a par with air travel since 2007. Energy consumption by ICT is estimated to increase by 4% a year, despite the increasing energy efficiency of electronic and computer equipment, due to the ever increasing usage of computers and telecommunications. On the positive side, ICT offers the potential to manage energy more efficiently, help better match energy supply and demand, and dynamically substitute renewable energy sources in the place of fossil fuels. At the same time, one would like to think that ICT is saving energy and CO2 emissions in other areas (such as transport), by substituting on-line activities for physical activities, such as working at home rather than commuting to an office. But such trends are difficult to identify, while the recent economic crisis in Europe and the USA has definitely had an impact on energy consumption in industry and other fields of activity. Within ICT itself, communications represent close to 25% of energy consumption, with data centres accounting for another 20% or so, the rest being attributed to PCs, terminal devices and office equipment including local networks. This lecture will focus on the ICT aspects of energy consumption from a performance engineering perspective, and show how some of our established methods, with measurements, can be used to understand the trade-offs between QoS and energy consumption, and help reduce the energy consumption in servers and networks.

Dr. Erol Gelenbe's short Bio:
A Fellow of IEEE, ACM and IET, and an expert on the performance evaluation of computer systems and networks, Erol Gelenbe is the Professor in the Dennis Gabor Chair in the Department of Electrical and Electronic Engineering at Imperial College, London. His research has been incorporated into commercial software tools such as QNAP for system performance evaluation and FLEXSIM for manufacturing systems. He has invented new mathematical models for performance analysis such as G-networks and diffusion approximations, and designed the first random access fiber-optics network XANTHOS and the first multi-processor packet switch SYCOMORE. He currently coordinates the EU FP7 Project NEMESYS on mobile network security, and also works on the interaction between energy savings and performance in Cloud Computing and ICT. Erol is a Fellow of the French National Academy of Engineering, and of the Hungarian, Polish and Turkish Science Academies, and has won the ACM SIGMETRICS Life-Time Achievement Award (2008), and IET's (UK) Oliver Lodge Medal for his work.