

*The Electrical and Computer Engineering Program presents
ECEN Seminar Series*

Antennas and Radios: Making You the Centre of Smart Healthcare Networks!

Dr. Akram Alomainy
Antennas & Electromagnetics (*Centre for Intelligent Sensing*)
Queen Mary, University of London

Tuesday, 02 April 2013, 12 – 1 p.m.

Lecture Hall 144

Light lunch will be served

Wireless sensor and body-centric networks are attractive solutions that can be used in healthcare and sport performance monitoring applications which will enable constant monitoring of health data and constant access to the patient regardless of the current location or activity and with a fraction of cost of the regular face-to-face examination. Such a system is particularly useful in the case of in-home assistance of the elderly and rapid repatriation of recovering patients to their own homes, as well as for smart nursing homes, clinical trials and research augmentation. It was estimated that wireless sensor solutions could save \$25 billion worldwide in annual healthcare costs by reducing hospitalisations and extending independent living for the elderly.

Current wireless sensor solutions are limited in that they do not provide the means to overcome obstacles and shadowing of propagating radio waves and also reduce the effect of interference in congested radio environments. The talk will look into new techniques and methods that combine both antenna and radio propagation engineering with networking and smart frequency agile communication systems. It aims to explore underpinning capabilities for an advanced low-power wearable wireless elements coupled with intelligent control algorithm capable of sensing and understanding the dynamic human body and dense indoor radio environment. Appropriately configured, such a system will ensure that the data from body-worn or implanted devices can be communicated to an off-body unit efficiently and continuously with minimum power requirements.



Dr. Akram Alomainy received the M.Eng. (Master of Engineering) degree in communication engineering and Ph.D. degree in electrical and electronic engineering (specialised in antennas and radio propagation) from Queen Mary University of London (QMUL), United Kingdom, in July 2003 and July 2007, respectively. He is a Lecturer (Assistant Professor) in the Antennas and Electromagnetics Research Group, QMUL. His current research interests include (*but not limited to*) small and compact antennas for wireless body area networks, radio propagation modelling, antenna interactions with human body, computational electromagnetic, reconfigurable structures and radio front-ends and advanced algorithm for smart and intelligent antenna and radio systems. He has authored and co-authored five book chapters and more than 90 technical papers in leading journals and peer-reviewed conferences. Dr Alomainy won the Isambard Brunel Kingdom Award, in 2011, given annually for outstanding young science and engineering communicator and public engager. He is a member of the IET, U.K. and IEEE, USA. You can find more about his research and work on the following website:
<http://www.elec.qmul.ac.uk/people/akram>

FOR MORE INFORMATION:

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