

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

## **Li-Fi: Pathway to 5G**

Prof. Harald Haas  
University of Edinburgh

**Tuesday, 10 September 2013, 12 – 1 p.m.**

**Conference room 310**  
***Light lunch will be served***

Li-Fi refers to high speed wireless communications through off-the-shelf white light emitting diodes (LEDs) - the devices that are at the heart of next generation energy efficient lighting. This talk will introduce Li-Fi, present the latest research findings such as our recent 3 Gbps transmission from a single colour LED, and showcase the potentials of this new technology. In this context, it will demonstrate that Li-Fi elegantly supports the trend of ever smaller cells in wireless communications to improve data coverage and mobile user experience without the need for expensive new infrastructure. It will be shown that the data rates in rooms can be improved by a factor of 1000 compared to existing radio frequency based systems such as Wi-Fi. This is because of the more favourable interference conditions in optical cellular networks where the light bulb is the optical base station or access point.



Professor Haas has pioneered and coined 'Li-Fi' listed among the 50 best inventions in TIME Magazine 2011. Prof Haas was an invited speaker at the TED Global 2011, and his talk has been watched online more than 1.3 Million times. Prof. Haas' research interests are in optical wireless communications, interference management in cellular systems, and large-scale MIMO systems. He holds 23 patents, and has published 250 conference and journal papers. Recently, he has been awarded the prestigious Established Career Fellowship from the EPSRC (Engineering and Physical Sciences Research Council) in the UK. He is cofounder and CSO of pureVLC Ltd.

**FOR MORE INFORMATION:**

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