

LIFI FOR 5G AND BEYOND WIRELESS COMMUNICATIONS NETWORKS

Hoa Le Minh

Northumbria University, United Kingdom

General lighting sources are currently evolving through the traditional fluorescent and incandescent sources to the modern energy saving light bulbs and now white light emitting diodes (LEDs). This trend has been spurred on through global awareness of the necessity for reducing the size of our carbon footprint. The introduction of solid state led lighting has attracted the attention of communications engineers worldwide, enabling the achievement of the dual functionality of room illumination whilst simultaneously transmitting wireless data via light fidelity (LiFi) or visible light communication (VLC) in optical spectrum regime. Although the existing wireless networks are mainly dominated by radio based technology, the emerging LiFi will play increasingly important role in the future wireless communications landscape. It is anticipated that both radio and optical spectrum will play equal role eventually especially in nanocell and picocell network structures. This talk will outline the growth of optical wireless communications including LiFi and present the challenges, roadmap of the technology for the future generation of wireless networks.

Biography

Hoa Le Minh is a Senior Lecturer at Northumbria University at Newcastle, UK. Prior to joining Northumbria University, he was a Research Fellow at Siemens AG, Munich, Germany and University of Oxford, UK. His research interests include optical communications, visible light communications, sensor network and smartphone technology in which he has published over 150 papers in various journals and conferences. He has participated in a number of European and industrial projects. He has chaired a number of international conferences/workshops and sessions in telecommunications. He is currently the Chairman of IEEE Communications Society (ComSoc) Chapter of UK and Ireland, and the Editor of IEEE Communications letters.

hoa.le-minh@northumbria.ac.uk