

Prof. Zabih F. Ghassemlooy:

Title: Optical Camera and Visible Light Communications

Abstract: The image sensor or camera-based visible light communication (VLC) systems are best known as optical camera communications (OCC), which uses an embedded camera with the need for hardware modifications, can offer multiple features including vision, localization, range measurements and data communications (at low data rates). OCC with low data rates is highly attractive in vehicular communications in order to improve the road safety and driving experience as a part of the global intelligent transportation systems (ITS). However, the standardization of OCC targets the generalization of communication for both high speed as well as low speed camera receivers. In practice, there are several commercially-modern high speed cameras that can support hundreds of fps. Camera frame rates are projected to increase in the near future owing to recent advancements in image sensor nano technology. This talk will give an overview of OCC and outline experimental works carried out within the Optical Communications research Group at Northumbria University, Newcastle, UK.