17th International Symposium on Wireless Communications

6-9 Sep. 2021, Berlin, Germany

https://iswcs2021.org/

CA 19111

5th International Workshop on

Optical Wireless Communications (IWOW)

Call for Papers

In a fully automated and intelligent world where billions of devices will be connected via the local- and public-based cloud networking, therefore there will be the need for telecommunication networks transferring huge amounts of data at much higher speeds over large numbers of highly reliable data connections in parallel each having a sufficient bandwidth. As such, 5G and 6G wireless networks are aiming for full realization of the Internet of Things through everything-to-everything connectivity paradigm using new spectrums, machine learning, energy efficiency, disruptive enabling technologies, (millimetre wave (mmW), tera Hertz (THz), and optical bands). The optical wireless communications (OWC) offer opportunities in three distinctive optical bands of infrared, visible, and ultraviolet that are deployable in indoor and outdoor environments as well as in underwater scenarios. In recent years, we have seen a surge in research and development activities in OWC, which has led to the development of new solutions capable of delivering ubiquitous, high date rates, and low-cost wireless network access in a variety of scenarios, as will be within the scope of this Workshop. The Cost Action on European network on future generation optical wireless communication technologies (**NEWFOCUS**) aims to serve as a global networking platform through capacity building of all relevant stakeholders including universities, research institutions, major industry players, small medium enterprises, governmental bodies, and non-governmental organisations. As part of NEWFOCUS, we will be running the 5th International **Workshop on OWC** (started as a specialized forum with previous Cost Action OPTICWISE IC1101) and focus on latest research and development in free space optics; networked bidirectional OWC (also known as LiFi), visible light communications; ultraviolet communications; optical camera communications; hybrid OWC and RF systems; and OWC for a range of applications. Contributions are welcome in all areas related to OWC covering ultra-short, short-, medium-, and long-range links including:

- Photonic components and device
- Channel modelling and characterisation
- Coding, modulation, signal processing
- Physical layer design
- MIMO concepts for OWC
- MAC for e.g. OFDMA, NOMA, SDMA
- Overall system concept, modelling and simulations
- High-speed OWC systems (indoor and outdoor) for
  - inter-chip communications
  - office and homes
  - intelligent transportation systems, e.g., UAVs, high-speed trains
  - entertainment and advertisement
  - massive IoT, e.eg., in medical, agriculture, manufacturing, etc.
  - underwater communications
  - space communications
  - Etc.
- Backbone network design for OWC
- Networking protocols
- Radio over OWC
- Hybrid WiFi/mmW/THz/OWC links
- Power line communications and OWC
- Optical camera communications
- Optical wireless localizations
- Optical wireless sensing (e.g., LIDAR)
- Security in OWC
- Machine learning in OWC
- Software defined OWC
- Emerging application areas and market perspective
- Others

All papers will be published in IEEE explore!

For further information please contact: **Professor Z Ghassemlooy**. z.ghassemlooy@northumbria.ac.uk; and **Dr J Perez**, joaquin.perez-soler@uv.es.

Submission Deadline: 21 May 2021; **Decision**: 7 July 2021; **Camera Ready**: 15 August 2021

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