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Emerging visible light communications: Systems, Devices and Applications

Dear Colleagues,

Emerging green communications are not only focused on reducing the CO_2 footprint by optimizing the power consumption of radio frequency (RF) systems, but also on moving these communications to other more energy-efficient parts of the spectrum. In this context, visible light communications have been proposed to exploit the optical spectrum. Basically, light-emitting diodes (LEDs) are equipped with an electronic driver for providing both illumination and data transmission. Moreover, several applications have recently been proposed, given that RF-based communications are inconvenient or often banned, e.g., underground infrastructures such as mining or tunnel constructions, oil and gas plants, hospitals or other industry environments. However, these applications are typically based on specific LEDs without considering the energy efficiency. Moreover, technical LEDs are much more expensive than commercial LEDs. This Special Issue is focused on energy-efficient VLC communication.

The following lines are considered:

- Optimizing energy efficiency in VLC;
- Characterizing commercial LEDs for medium- and high-data-rate VLC;
- Industrial applications of VLC;
- Deployment of efficient VLC networks in industrial environments;
- Geolocation and user monitoring using VLC in industrial environments;
- Characterizing optical channels in industrial environments.

Special Issue Website

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Special Issue