

LiFi: Connecting everyone and everything with light

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Mobile connectivity is one of the cornerstones of modern society. However, it also poses one of its biggest challenges. With the advent of industry 4.0, the internet of things (IoT), and augmented reality, up to a 5-fold increase in monthly global data traffic is expected by 2026 [1]. The increasing demand requires a major bandwidth expansion for the current radiofrequency (RF) communication solutions requiring increasingly novel and complicated designs, e.g. sub-mm wavelength antennas [2].

In the recent decade, the field of optical wireless communications (OWC) has emerged as a viable wireless technology to complement the existing and developing RF-based solutions [3]. Compared to RF, in OWC, the information is carried by light, which is intensity-modulated [4]. A fully bi-directional networked OWC system is called LiFi (short for light-fidelity) [5].

In this talk, we will discuss the main principles and describe the technology at the core of LiFi. Furthermore, we will describe the advantages of LiFi based communication in everyday life and industry. Finally, a brief outlook and challenges of LiFi research and development will be presented.

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