

Dimitrov, S. and Haas, H. *Principles of LED Light Communications Towards Networked Li-Fi*. Cambridge CB2 8BS, United Kingdom: Cambridge University Press, 2015, 207 pp. \$99.00 (Hardbound).

Balancing theoretical analysis and practical advice, this book describes all the underlying principles required to build high-performance indoor optical wireless communication (OWC) systems based on visible and infrared light, alongside essential techniques for optimizing systems by maximizing throughput, reducing hardware complexity, and measuring performance effectively.

It provides a comprehensive analysis of information rate-, spectral-, and power-efficiencies for single- and multi-carrier transmission schemes, and novel analysis of non-linear signal distortion, enabling the use of off-the-shelf LED technology. Other topics covered include cellular network throughput and coverage, static resource partitioning via dynamic interference-aware scheduling, realistic light propagation modeling, OFDM, optical MIMO transmission, and non-linearity modeling.

Covering practical techniques for building indoor optical wireless cellular networks supporting multiple users, and guidelines for 5G cellular system studies, in addition to physical layer issues, this is an indispensable resource for academic researchers, professional engineers, and graduate students working in optical communications.

Svilen Dimitrov is a researcher at the German Aerospace Center (DLR) in Oberpfaffenhofen, Germany. He is involved as a project manager in the European project on Broadband Access via Integrated Terrestrial and Satellite Systems (BATS), aiming at the development of terabit/s satellite communication systems with optical feeder links.

Harald Haas is Chair of Mobile Communications at the University of Edinburgh, and Chief Scientific Officer of pureVLC Ltd. He first coined Li-Fi, listed in *Time Magazine's* 50 Best Inventions of 2011, and covered by international media channels such as the BBC, NPR, CNBC, the *New York Times*, *Wired UK*, *NewScientist*, and *The Economist*. His TED talk on the subject has been viewed more than one and a half million times, and in 2012 he received a prestigious Fellowship from the Engineering and Physical Sciences Research Council (EPSRC), UK. In 2014, he was selected by EPSRC and the Royal Academy of Engineering as one of ten RISE (Recognizing Inspirational Scientists and Engineers) leaders in the UK.