Special Issue

Next-Generation High-Speed Direct Detection Optical Communication Systems

Message from the Guest Editors

Driven by emerging bandwidth-hungry applications, increasing data traffic has propelled optical communications towards higher capacities. The advancement of next-generation fiber optic transmission requires higher-speed transceivers, where cost, footprint, and power consumption are also of critical consideration. Although high-performance coherent systems have been widely deployed in long-haul networks, the direct detection scheme remains the preferred solution in cost-sensitive application scenarios due to its low cost and simple implementation. Moreover, this LO-free characteristic makes the direct detection receiver well positioned for complementary metal–oxide–semiconductor (CMOS)-compatible silicon photonic integration, which is a promising technique with merits of a small footprint, low cost, and high yield. The goal of this Special Issue is to report the latest innovations and scientific research advances in high-speed optical direct detection communications. We are pleased to invite you to submit your latest research findings to this Special Issue.

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