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Sommario/riassunto

Semiconductor optical amplifiers (SOAs) are considered a key enabling technology for the design and implementation of photonic circuits, subsystems, and networks. Owing to the attractive features of low power consumption, compactness, broad gain bandwidth and ability for integration with affordable cost, SOAs enjoy continuous popularity as core versatile devices within the optical communications research and industrial sector for the accomplishment of critical and indispensable tasks at fundamental and system-oriented level. Given the establishment and widespread employment of SOAs as technological platform, a Special Issue on 'Applications of Semiconductor Optical Amplifiers' was introduced and prepared to address, present, and investigate modern applications of SOAs, as well as explore and highlight trends, challenges, and perspectives for motivating efforts toward continuous exploitation of these active modules in a feasible, innovative, and global manner. This book collates the Special Issue papers reporting on significant results obtained from the cutting-edge research conducted by experts in the field. Readers will benefit by acquiring useful knowledge and opening their scientific horizons on SOA-enabled applications, such as direct signal amplification, external modulation, all-optical signal processing, all-optical memories, photonic integrated circuits, photonic switching, optical code division multiple access systems, passive optical networks, et cetera.