IEEE/Optica Publishing Group
Journal of Lightwave Technology
Scope and Topic Categories

The Journal of Lightwave Technology (JLT) is comprised of original contributions covering work in all aspects of optical guided-wave science, technology and engineering. Manuscripts are solicited which report original theoretical and/or experimental results which advance the technological base of guided-wave technology and related applications.

Topics of interest include the following: fiber and cable technologies, active and passive guided-wave componentry (light sources, detectors, repeaters, switches, fiber sensors, etc.); integrated optics and optoelectronics; and systems, subsystems, new applications and unique field trials.

JLT focuses on science, technology, and engineering of guided-wave technologies and not primarily on fundamental studies on the interaction of light with matter such as quantum optics, biomedical, nonlinear optics, and laser physics.

More information about the main topic categories and their related scope can be found in the following sections.

I. Systems, subsystems and networks for fiber optics communications

Manuscripts in the optical systems and subsystems area should be concerned with demonstrations that render a performance level not previously available, significantly out-perform previously established systems, clearly go beyond incremental improvement of previously published results, or represent enhancements in the state of the art in general.

Submissions in the field of optical networks are welcome if they show a significant improvement over state-of-the-art network operation and performance. All assumptions on the underlying physical layer must be realistic and must be substantiated through explicit references or through detailed technical descriptions within the paper itself. Papers that focus on networking aspects regardless of the underlying physical light-paths are not suitable for publication in JLT.

JLT puts a significant emphasis on experimental work, system demonstrations and subsystems measured performance. Submissions with technical content consisting mainly of simulations and theoretical derivations and estimates are welcome too, if they go beyond a simple performance optimization and use realistic parameters, possibly extracted from experiments or other experimental papers. Simulation, or theoretical manuscripts that are focused on derivations for the sake of derivations, disconnected from real-world operation limitations, or representing an incremental improvement of already published work, are not suitable for publication in JLT.

II. Microwave photonics, radio-over-fiber and optical wireless systems

Papers in this category should demonstrate significant advances over prior publications in the field and provide relevant references to that work. Submissions with technical content consisting mainly of simulations

and theoretical derivations and estimates need to go beyond a simple performance optimization and use realistic parameters, possibly extracted from experiments or other experimental papers.
Submissions on the field of optical wireless systems covering purely theoretical expositions with little to no connection to practical systems in terms of their underlying assumptions and without any context to experimental work are not suitable for publication in JLT.

III. Optical Waveguides and Devices

The primary subject of the papers in the area of optical waveguides and devices must be related to fiber or waveguide technologies. Papers on purely free-space optical subsystems/devices are generally not suitable for JLT, unless these uniquely enable a function used in guided-wave systems.

Submissions with technical content consisting mainly of simulations and theoretical derivations and estimates should either propose a novel structure that is in principle feasible and that would provide a clear advantage over conventional ones, or shed important fundamental insight into the principles and trade-offs of known structures. In both cases, the work should go beyond a simple performance optimization and use realistic parameters, possibly extracted from experiments or other experimental papers. In addition, the scenario in which the proposed device is supposed to operate should be clearly explained, taking into account real-world operation limitations (such as noise, crosstalk etc.).

IV. Optical Fibers and Fiber Devices

Papers in the category of optical fibers and fiber devices must demonstrate enough novelty in terms of structure, mode of operation, or performance improvement over state-of-the-art results. As an example, reports on a fiber laser that is mode-locked using some novel saturable absorber, but whose laser performance is not superior or does not show any noteworthy benefits, are not suitable for publication in JLT.

Submissions with technical content consisting mainly of simulations and theoretical derivations and estimates are welcome if they either propose a structure that is in principle feasible or if they shed important fundamental insight into the principles and trade-offs of known structures (beyond a simple performance optimization and using realistic parameters, possibly extracted from experiments or other experimental papers).

V. Optical Sensors

The primary subject of the papers in the area of optical sensors must be related to fiber or waveguide technologies. As an example, free-space sensor submissions whose only waveguide aspect is a feeder fiber are not suitable for publication in JLT. In addition, papers in this category must bring something that is novel from the perspective of physical science, device concept, or innovative data processing. Papers demonstrating the use of known sensing technology in some interesting new application, without any advances on the sensor itself, are not suitable for publication in JLT. Submission reporting the application of machine learning/artificial intelligence algorithms to optical sensing, without any advances in the sensor itself, should clearly demonstrate the advantage over standard processing techniques.

Submissions with technical content consisting mainly of simulations and theoretical derivations and estimates should either propose a structure that is in principle feasible and that would allow sensing modalities that improve the state of the art in the field, or shed important fundamental insight into the principles and trade-offs of known structures. In both cases, the work should go beyond a simple performance optimization and use realistic parameters, possibly extracted from experiments or other experimental papers.