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Optical Sensors Based on Random Laser

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Message from the Guest Editors

Random lasing is a physical phenomenon that is responsible for the generation of a special kind of optical radiation with mixed properties of common light and laser. In a random laser system, the last of the three elements that allow the radiation to persist inside the gain medium for the sufficiently long time required for amplification is missing. Scattering, due to disorder of the material, is the mechanism that increases the radiation lifetime, allowing the stimulated emission to prevail.

Besides the basic interest for studying random lasing, such as the statistical issue of the emission behavior, such an optical source has recently been proposed as a useful and very promising tool for developing optical sensors in several fields, such as biological and medical diagnostics research, earth sciences, optical fiber sensing engineering, and industrial quality control as well as for developing new kind of photonic devices.



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Special Issue



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Message from the Editor-in-Chief

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