

chalcogenide-based with highly sensitive arrayed sensors and applications

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The sixth primary group of chalcogenide-based materials has attracted wide attention due to its advantages of ultra-low loss, high nonlinearity, and high elastic-optical coefficient from visible light to mid-infrared wavelengths. Here, we carried out innovative research around chalcogenide-based materials, covering the chalcogenide-based materials system, integrated photonics chip and device fabrication, and chalcogenide-based integrated chip system and its applications. This article discusses a novel chalcogenide-based material with an excellent elastic-optical coefficient and its fabrication process, which can effectively sense ultrasonic signals with high sensitivity. An optical micro-ring array device with a quality factor of nearly 10^6 , noise equivalent pressure as low as $2.2 \text{ mPa/Hz}^{1/2}$, and bandwidth coverage of 175 MHz has been prepared. Integrating advanced parallel spectroscopic detection technology achieves wavefront array detection of the ultrasonic field, showing broad application prospects.

Short Bio:



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