

# Special Issue

## III-V Semiconductor Optoelectronics: Materials and Devices

### Message from the Guest Editors

III-V semiconductor materials, such as GaN, GaAs, InAs, InP, and GaSb, possess excellent optical properties, which normally act as a gain medium of light sources with large-scale emission wavelengths from visible to mid-infrared bands. Nowadays, tremendous progresses have been made in the field of III-V light sources and detectors, such as near-infrared InAs quantum dot-based lasers and mid-infrared GaSb-based quantum cascade lasers, among many others. In addition, III-V materials (InAs, InSb, etc.) have much higher electron mobilities than Si, which have broad applications in high-speed electronic and radio frequency (RF) devices, including field effect transistors (FETs) and high-electron-mobility transistors (HEMTs). The heterogenous integration and direct growth of III-V materials marks a fundamental step towards next-generation optoelectronics. Many methods, including metal-organic chemical vapor deposition (MOCVD), molecular beam epitaxy (MBE), and heterogeneous bonding, have been developed to achieve high-quality III-V functional structures, such as quantum well structures, quantum dots, and nanostructures.

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### Deadline for manuscript submissions

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## Materials

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