

## Invited Talk

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### **Progress on Dilute Bismide Near-IR Light Emitting Devices**

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Dilute bismide exhibits a variety of interesting physical properties such as large bandgap bowing effect, large spin-orbit splitting energy, temperature insensitive bandgap, strong and broad photoluminescence (PL) etc. By optimizing growth parameters and heterostructures, we demonstrate very broad near IR PL at room temperature with a line-width of 700 nm from InPBi and 1000 nm from GaAsBi. Electrically pumper GaAsBi quantum well lasers reveal lasing wavelength up to 1.142  $\mu\text{m}$  at room temperature, while the longest wavelength from a GaAsBi light emitting diode reaches 1.25  $\mu\text{m}$ . For optically pumped disk lasers, we demonstrate tunable lasing wavelength from 1.27 to 1.41  $\mu\text{m}$  by varying the disk diameter.