

## Invited Talk

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### **Growth of new III-Bi-As materials for new devices**

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We present our latest results on the growth of (In/Ga/Al)BiAs materials and heterostructures by molecular beam epitaxy. InGaBiAs-based materials hold promise for infrared devices on InP platforms, while InAlBiAs-based materials are useful for the upconversion of photons. InGaAlBiAs is useful for photoconductive switches and other terahertz devices. GaBiAs can also be used to tailor hole wavefunction coupling in quantum dot molecules. Finally, some of these materials hold promise for thermoelectrics based on control over band alignments and phonon scattering.

We discuss our experiences with the growth of these materials and their device implications. We will also briefly discuss the newly opened Materials Growth Facility at the University of Delaware, which is being operated as a (staff-assisted) user facility for MBE growth, including of bismuth-containing semiconductors.