

Abstract Submitted  
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**Electronic and optical properties of dilute Bismide alloys**<sup>1</sup> RAJEEV KINI, ANGELO MASCARENHAS, RYAN FRANCE, AARON PTAK, National Renewable Energy Laboratory, 1617 Cole Blvd, Golden, CO 80401, USA — We will present photoluminescence measurements of GaAs<sub>(1-x)</sub>Bi<sub>x</sub> thin films containing dilute concentration ( $x \leq 0.045\%$ ) of isoelectronic impurity Bi. We observe that Bi induces strong perturbation to the host band structure even at these low concentrations and see no spectral evidence for isolated Bi forming a bound state in GaAs. Very similar to the case of Bi in GaP, we observed no Bi-Bi pair states. An ‘undulation’ spectrum is observed which we attribute to the vibronic levels of acceptors.

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