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Anomalous Coherent Bragg Rod Analysis Studies of GaAs/InGaAs DIVINE KUMAH, NAJI HUSSENI, CODRIN CIONCA, ALEX RIPOSAN, Applied Physics Dept. University of Michigan, JOANNA MIRECKI MILLUNCHICK, Department of Materials Science and Engineering, University of Michigan, PHIL WILLMOTT, ROY CLARKE, Swiss Light Source, YIZHAK YACOBY, Racah Institute of Physics, Hebrew University — A considerable amount of work has been carried out recently in correlating growth conditions with electronically observed properties in Group III-V systems using a variety of characterization techniques. Ambiguity in interpretation of most characterization techniques arises due to difficulties in separating roughness effects from segregation and inter-diffusion of atomic species. We apply x-ray resonant techniques to the Coherent Bragg Rod Analysis (COBRA) phase retrieval procedure to produce high resolution electron density maps from bragg rod scans to determine with a high degree of accuracy, the relative concentrations of In and Ga in a system comprising of 1ML of GaAs on InGaAs.

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