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Dielectric functions of as-grown and annealed Ga_{1-x}Mn_xAs thin films ZACHARY WEBER, FRANK PEIRIS, Kenyon College, X. LIU, J. K. FURDYNA, Notre Dame — We have investigated the dielectric functions of a series of as-grown as well as annealed Ga_{1-x}Mn_xAs thin films using spectroscopic ellipsometry. After determining the alloy compositions using x-ray diffraction experiments, a rotating analyzer spectroscopic ellipsometer was used to measure the complex reflection ratio for each of the films in the energy range between 0.9-6.5 eV. By modelling the ellipsometric data, the dielectric functions for each of the Ga_{1-x}Mn_xAs samples were determined. All of the dielectric functions displayed the critical point structures related to the higher order electronic transitions, and showed differences between the as-grown and the annealed sample spectra.

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