# GROWTH AND CHARACTERIZATION OF 6.1 Å MAGNETIC SEMICONDUCTORS

H. Luo
Department of Physics and Center for Advanced Photonic and Electronic Materials
State University of New York at Buffalo, Buffalo, NY 14260

The unique band alignment of InAs/GaSb and related materials is important not only to their optical and transport properties, but also to their magnetic properties when Mn is incorporated. Because of the carrier mediated exchange interaction in III-Mn-V magnetic semiconductors, the ability to separate electrons and holes provides many possibilities to combine electronic, optical and magnetic properties for device purposes. In this talk, we will describe such possibilities and materials problems that have to be overcome to realize the full potential of this group of materials. To address the materials issues, we have grown InAs/Mn and GaSb/Mn digital alloys, and related heterostructures. The surface coverage of Mn in each Mn-containing layer and the separation between the Mn layers in the digital alloys are varied systematically, so that structural, electronic and magnetic properties can be thoroughly investigated. Magnetic, transport and structural studies have been carried out and the results will be discussed.

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