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Mn doping of InAs quantum dots studied by X-STM. PAUL KOENRAAD, MURAT BOZKURT, JENS GARLEFF, Eindhoven University of Technology, VICKY GRANT, RICHARD CAMPION, TOM FOXON, University of Nottingham, EUCLYDES MAREGA, University of San Carlos, GREG SOLOMON, University of Arkansas — We report on the X-STM analysis of Mn doped quantum dots. The X-STM technique allows for the atomic scale analysis of single Mn acceptors and their incorporation in III/V nanostructured materials. We will show the detrimental effect of segregation which complicates the doping process of InAs quantum dots in GaAs. Several routes to attain doping of quantum dots are addressed. Only in structures with extremely high doping concentrations we could show the incorporation of a few or a single Mn atom(s) in the InAs dots. We will present low temperature (5 K) spectroscopic measurements that allow studying the interaction of the Mn acceptor state with the quantum dot.

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