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Characterizing epitaxially-grown InGaAs quantum dot chains using transmission electron microscopy TYLER PARK, JOHN COLTON, Brigham Young University, HAEYEON YANG, South Dakota School of Mines and Technology, JEFF FARRER, Brigham Young University — Quantum dot chains grown by a modified Stranski-Krastanov method have been studied. The new growth technique seeks to reduce indium segregation and intermixing, compared to the conventional method, for higher quality dots. These quantum dot chains may have potential application in optoelectronics, detectors, lasers, and quantum computing. Our recent efforts have been to characterize the quantum dot chains by using transmission electron microscopy to answer morphological questions that photoluminescence spectroscopy could not. Using this method, we've been able to observe a dependence of dot flattening on temperature, a reduction in segregation and intermixing, and little influence of a capping layer on the structure of the dot-chains.

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