

Abstract Submitted
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Strain Mapping of Quantum dot Superlattices using 4D-STEM¹

SARA IRVINE, University of Texas at Austin, Cornell University, MICHELLE SMEATON, LENA KOURKOUTIS, Cornell University — Quantum dot superlattices that have epitaxial connections are a developing system of quantum materials. Super-lattices provided another knob in which to tune electronic properties. The electronic properties are still limited in part due to defects in the connections, which limit charge delocalization in the super-lattice. In this work, we used 4D-Scanning Transmission Electron Microscopy(STEM) and the Cesprum transform to map the local strain in a super-lattice of PbSe quantum dots. We observed strain defects in the necks of a super-lattice of PbSe quantum dots.

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