# Polarizing Spins in 1D

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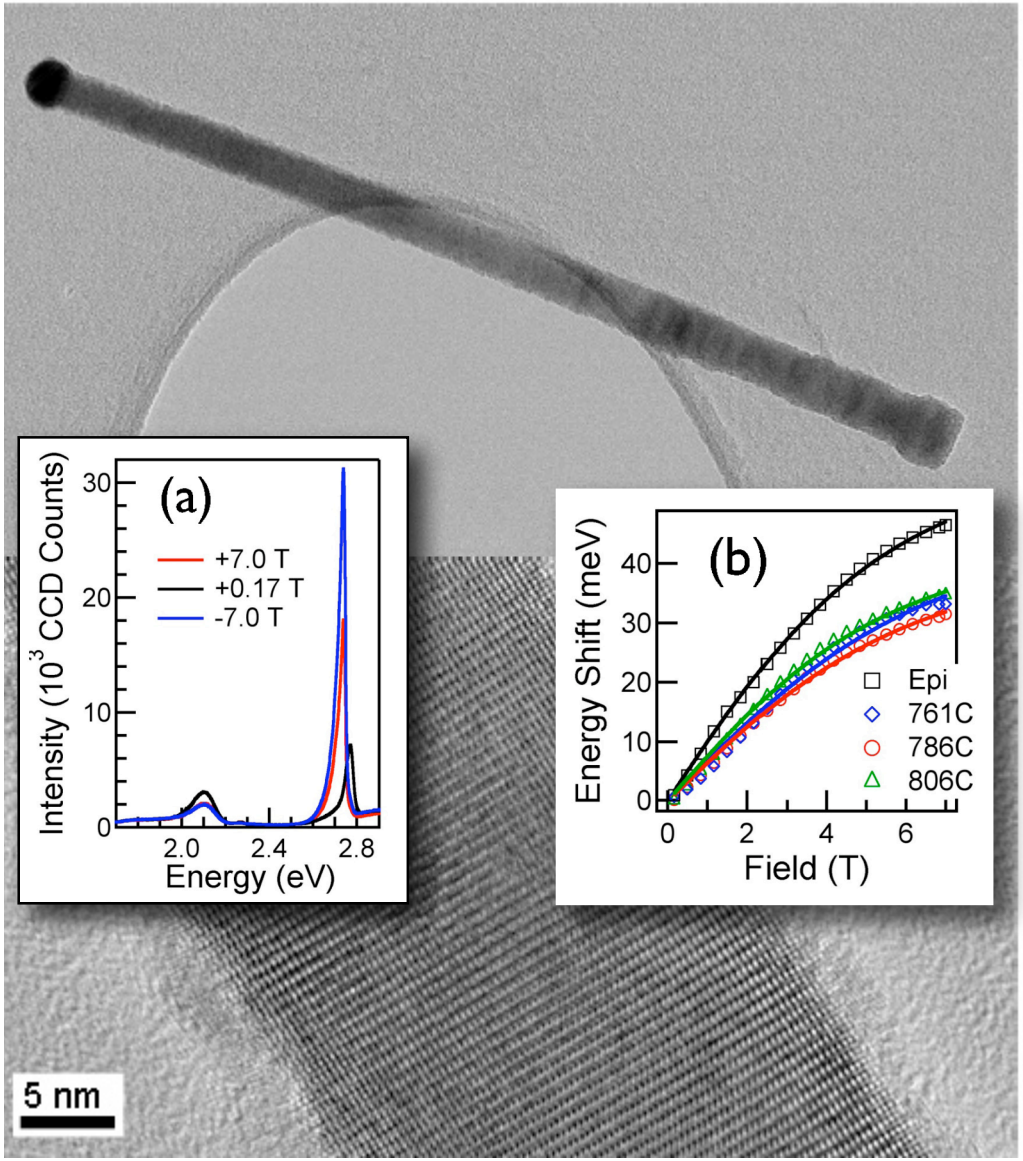


The introduction of transition metals into a semiconductor lattice produces an exchange-enhanced Zeeman splitting, which has been exploited in the past to create novel spin-polarized Fermi liquids in 3D and 2D. MRSEC researchers have found a pathway towards spin-polarized *one-dimensional* Fermi liquids by incorporating Mn atoms into single-crystal ZnSe nanowires whose diameters approach the 1D regime (~10 nm across). Magneto-optical spectroscopy clearly shows a Zeeman splitting much larger than the Fermi energy at typical doping levels. Such nanowires can serve as model systems for spin-polarized transport in 1D systems.