The project goal is a device that uses magnetostrictive nanowire arrays to detect acoustic waves. When these nanowires resonate, they will generate local magnetic fields, which can then be transduced to electrical signals by GMR sensors (similar to hard drive heads). Charge controlled deposition allows engineering of heterostructured nanowires. Multi-segmented nanowires provide internal magnetic bias to the Galfenol via Co. Nano-acoustic testing apparatus is being developed.