Abstract:
Our lab is developing a diamond-chip-based platform for determining composition, structure, and function of trace biochemical analytes via nuclear magnetic resonance (NMR), nuclear quadrupole resonance (NQR), and electron paramagnetic resonance (EPR) spectroscopies. The platform consists of a nanostructured diamond chip doped with Nitrogen-Vacancy (NV) color centers and uses non-inductive optical detection and high-aspect-ratio nanogratings to enhance sensitivity in a wide range of magnetic fields and at ambient temperature. We have recently demonstrated solution-state NMR, NQR detection of thin films, and EPR detection of external spins with this platform.

Bio:
Since 2015, Victor Acosta is Assistant Professor of Physics at UNM. He did his PhD in atomic physics at UC Berkeley, postdoc in quantum computing at HP Labs, and was a biophysics researcher at Google Life Sciences.

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