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Optical spectroscopy of resonating modes in molecular nanowires[1] SAUGAT GHIMIRE, RAVI TRIPATHI, KANNATASSEN APPAVOO, The University of Alabama at Birmingham — Controlling optical fields at subwavelength resolution is at the heart of many photonic applications in the medical and sensing sectors. Recently, resonant optical nanostructures have emerged as a viable candidate to tune the strength of light-matter interaction while manipulating the flow of light below the diffraction limit. Here we discuss the resonant optical modes of an individual organic nanowire, fabricated by vapor phase growth and that was excited by a femtosecond laser pulse. Furthermore, by coupling our nanowire to various platforms — for example nanospheres and semiconducting/metallic thin films — we develop novel strategies to perturb the inherent resonating modes of our wire. Using Fourier imaging spectroscopy, we discussed how the emission spectrum and directionality pattern of our molecular nanowire is altered.

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