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**Scanning Photocurrent Characterization of Absorption Resonances and Photocarrier Generation in Single-Walled Carbon Nanotubes** TRISTAN DEBORDE, TAL SHARF, Oregon State University, JOSHUA W. KEVEK, Cornell University, ETHAN D. MINOT, Oregon State University — We use a scanning photocurrent microscope (SPCM) in conjunction with a supercontinuum laser source to study resonant absorption in individual single-walled carbon nanotubes (SWNTs). Characterization by spectrally-resolved SPCM is much faster than using resonant Raman scattering. The technique also complements existing Rayleigh scattering techniques because measurements can be performed on SWNTs in a standard field-effect transistor geometry. The broad band light source (0.67 eV to 2.76 eV) is monochromated and then focused onto the SWNT. Resonant absorption is manifested as peaks in photo-induced conductivity as a function of excitation energy. The wide range of photon energies gives us access to the excitonic transitions E11 to E44 in typical semiconducting SWNTs. This allows us to access information about the diameter/chirality of the nanotube, as well as probing phenomena associated with photogenerated carriers in SWNTs at room temperature.

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