

Abstract Submitted  
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**Optical Behaviors of Single-Wall Carbon Nanotubes in Complex Environments** JUAN G. DUQUE, JARED CROCHET, Los Alamos National Laboratory, BRAHIM LOUNIS, LAURENT COGNET, Bordeaux University, STEPHEN DOORN, Los Alamos National Laboratory — The optical properties of single-walled carbon nanotubes (SWNTs) offer great promises. However, the realization of their potential is limited by degree of interactions with their immediate surroundings. Here, we present an innovative approach to control and manipulate the intrinsic optical properties of SWNTs to develop optical sensors as a direct or indirect means to measure physical changes and convert such a response to a signal. We probe the mechanism of photoluminescence brightening via surfactant restructuring using time-resolved PL measurements and show an original way to visualize complex fluid behaviors controlling the intrinsic optical properties of SWNTs.

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