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Effects of Diffusion on Photocurrent Generation in Single-Walled Carbon Nanotube Films CHRISTOPHER MERCHANT, NINA MARKOVIC, Johns Hopkins University — We have studied photocurrent generation in large carbon nanotube (CNT) films using electrodes with different spacings. We observe that the photocurrent depends strongly on the position of illumination, with maximum observed response occurring upon illumination at the electrode edges. The rate of change of the response decays exponentially, with the fastest response occurring for samples with the smallest electrode spacing. We show that the time response is due to charge carrier diffusion in low-mobility CNT films.

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