

Abstract Submitted
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Photoconductivity of Single-Walled Nanotubes on Quartz Substrates O.M. CASTELLINI, University of Wisconsin-Madison, MATTHEW S. MARCUS, University of Wisconsin-Madison, J.M. SIMMONS, University of Wisconsin-Madison, M.A. ERIKSSON, University of Wisconsin-Madison — Photoconductivity measurements are used to study the electrical properties of carbon nanotubes on quartz substrates. Fabricating nanotube devices on quartz allows a measurement of the intrinsic photocurrent without any contribution from the substrate. We measure photocurrents of order nanoamps and a lower limit for the rise time of a SWNT diode device. Various measured rise times range from fast ($< 5 \mu\text{s}$) to slow ($800 \mu\text{s}$), indicating that nanotube devices may be useful for high speed applications, but that the device configuration may play a critical role in the minimum achievable rise time. The special considerations for fabricating single nanotube devices on quartz will also be discussed.

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