

Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Single quantum dot nanowire LEDs MAARTEN VAN KOUWEN, ETHAN MINOT, FREEK KELKENSBERG, JORDEN VAN DAM, LEO KOUWENHOVEN, VALERY ZWILLER, TU Delft, MAGNUS BORGSTRÖM, OLAF WUNNICKE, MARCEL VERHEIJEN, ERIK BAKKERS, Philips Research Labs — Electrically-driven conversion of single electron spins into polarized photons will enable new experiments in the field of quantum information processing. We are developing nanowire light emitting diodes with the goal of combining single electron and single photon control in the same device. We will report on the reproducible fabrication of InP-InAsP nanowire LEDs in which electron-hole recombination is restricted to a quantum-dot sized InAsP section. We have investigated the operation of these nano-LEDs with a consistent series of experiments at room temperature and at 10 K, demonstrating the potential of this system for single photon applications.

Ethan Minot
TU Delft

Date submitted: 30 Nov 2006

Electronic form version 1.4