LUND UNIVERSITY

NANOLUND

AT THE FOREFRONT OF NANO SCIENCE

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# NANOSCIENCE COLLOQUIUM

Wednesday
October 12, 2016
at 15:15,
K-space, Fysicum

## Light Charge Interaction in Semiconductor Nanowires

Compound semiconductor heterostructure nanowires with embedded pn-junctions for electronic and photonic devices are now available. Despite amazing miniaturization achievements their device performance such as the power efficiency of light-to-current transformation is limited. A performance improvement is mandatory to hook up with their layered device counterparts. This presentation focusses on the physical and technical parameters limiting the efficiency of the light-to-current transition in nanowire pn-junctions and the speed of nanowire LEDs. I-V characteristics from various nanowire pn-junctions in terms of material and design will be discussed. Finally, the high-speed performance of GaN based pn-junctions for LED applications will be presented.

**Host: Magnus Borgström and Kimberly Dick Thelander (Solid State Physics)**