



PHOTONICS SOCIETY at UCSB

A STUDENT CHAPTER OF IPS, SPIE & OSA

UCSB Student Lecturer Series

1:00 PM Friday, March 5th

Zoom Meeting – Meeting ID: 847 3105 9791 -- Password: 792878

[Zoom Link](#)



[Caroline Reilly](#)
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Materials Dept, UCSB

InN Quantum Dots by MOCVD for Infrared Applications

The III-N system has proved successful for light-emitters in the high-energy visible and ultraviolet but has faced challenges in the lower-energy regime. The most common growth technique for nitrides devices, metalorganic vapor phase epitaxy, has been used here to grow InN quantum dots capable of emitting in the near-infrared. Both In-polar and N-polar quantum dots have been grown and characterized, showing differences in morphology and emission by atomic force microscopy and photoluminescence.

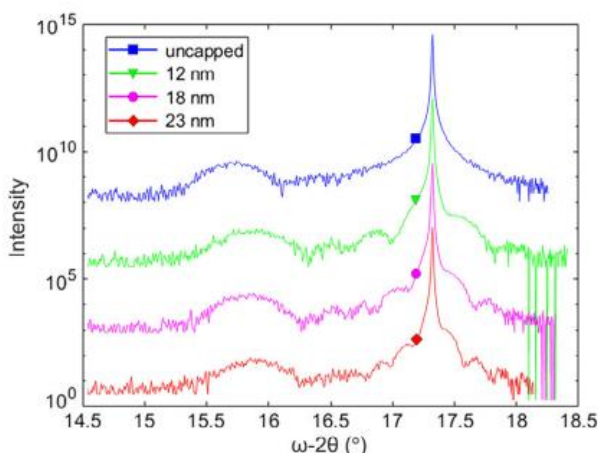


Figure 6. XRD ω - 2θ scans around the (0002) reflection with InN relaxed peaks and GaN peaks for series C with GaN cap thicknesses of a) 0, b) 12, c) 18, and d) 23 nm.

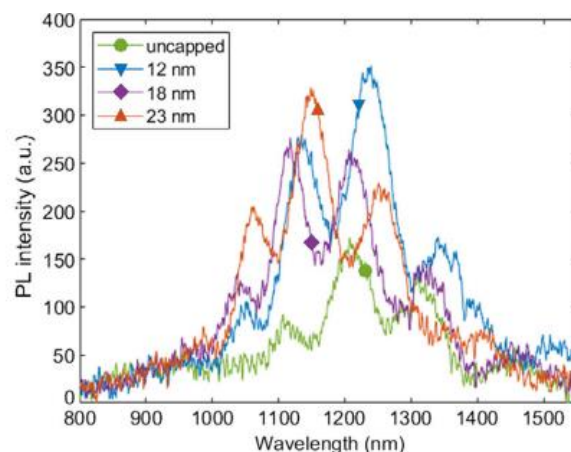


Figure 7. PL spectrum for InN QDs, series C, with GaN cap thicknesses of 0, 12, 18, and 23 nm. Detector cutoff past 1550 nm.

Image from <https://doi.org/10.1002/pssb.201900508>

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