

# PREM - working with partners

M. A. Noginov





# PREM Highlight: Research

NSU student  
Akeisha  
Belgrave at  
Cornell

doi:10.1038/nature08318



Cornell student  
Samantha Stout  
at NSU

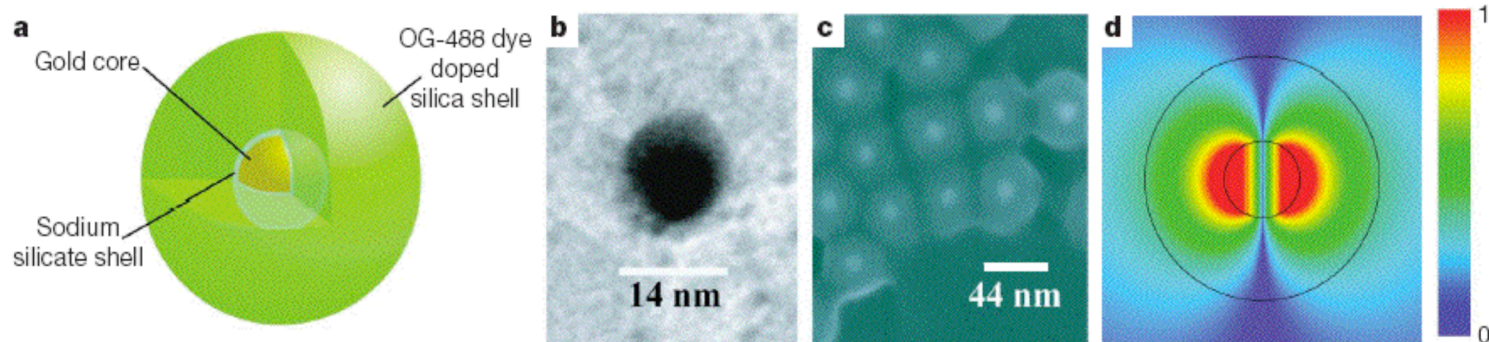
nature

LETTERS

## Demonstration of a spaser-based nanolaser

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T. Suteewong<sup>3</sup> & U. Wiesner<sup>3</sup>

Theory and measurements at Purdue



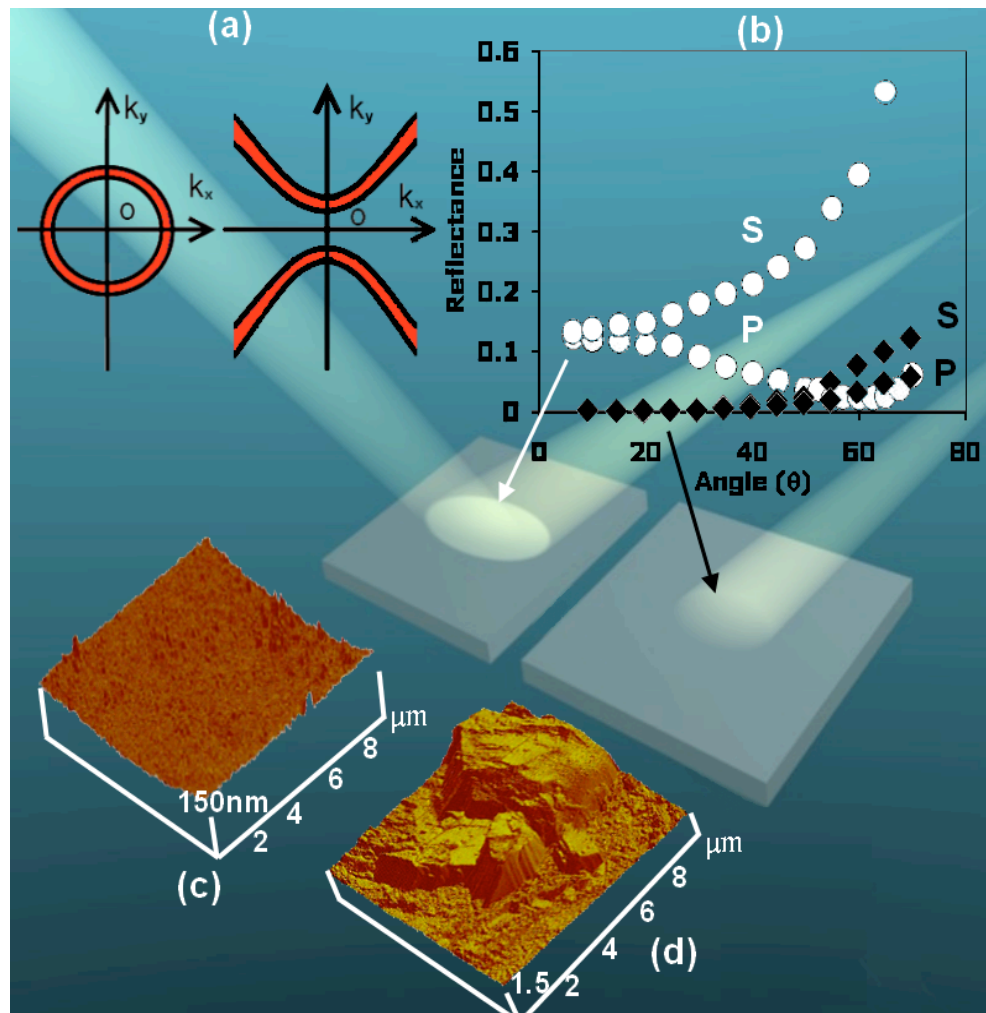
This result would never have been possible without a center<sup>2</sup>

# Darker than black: suppressed reflectance in metamaterials with hyperbolic dispersion

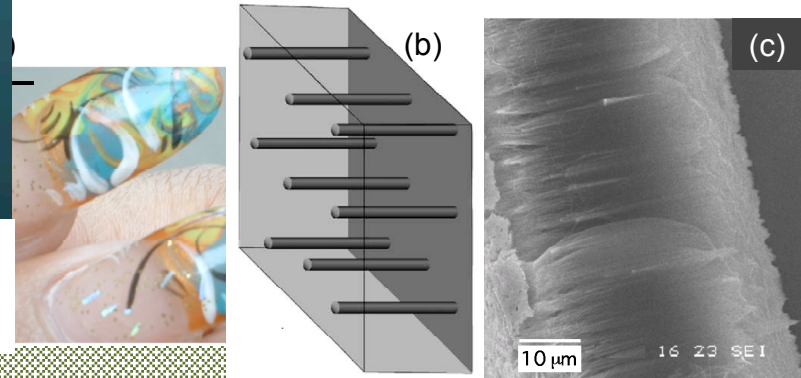
DMR 0611430

NSU PREM

**Purdue: E.E. Narimanov - now PREM participant**



Due to high density of photonic states, roughened surface of a metamaterial with hyperbolic dispersion scatters light preferentially *inside* the material, resulting in a very low reflectance. This phenomenon can find applications in the stealth technology, solar cells, and photodetectors.



**Metamaterials with hyperbolic dispersion – arrays of silver nanowires**



# *PREM Workshop and Hands-On Future Tech at Norfolk State University (2006 and 2008)*



**Attended by 160 students from 22 colleges and universities. Most of them belong to underrepresented minority groups.**

**Organized and sponsored by six NSF funded programs: NSU PREM Phonic Metamaterials, MRSEC at Cornell, NCN at Purdue, STC UW, STC UCLA, STC UCD.**

**Exciting the next generation about Science and Technology – the hands-on learning experience workshop primarily targeting undergraduate students.**

