

Abstract Submitted
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**Unexpected Broadband Visible Emission from Sol-Gel Derived
Yttrium Silicate Nanopowders under 803.5 nm Laser Diode Excitation¹**

MURAT ERDEM, JOSEPH LIGUORI, BRYAN SITT, Boston College, GONUL OZEN, Istanbul Technical University, BALDASSARE DI BARTOLO, Boston College — We report the generation of efficient, wideband white light (WL) with a spectrum ranging from 400 to 800 nm obtained from sol-gel derived γ -Y₂Si₂O₇ nano powders with average particle size \sim 40nm when excited with the 803.5 nm emission of a laser diode. The WL intensity was found to increase with decreasing environment pressure and increasing laser pumping power. The decay time was 0.41 ms. The intensity reached its max value 18 sec. After switching on the laser. The International Commission on Illumination (CIE) coordinates were found to be $x = 0.3408$ and $y = 0.3100$ under 803.5 nm excitation. These values lie in the yellowish region and correspond to color temperature values of 5030 K with a color rendering index of 85. The illuminance value was found to be 1456 lux.

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