

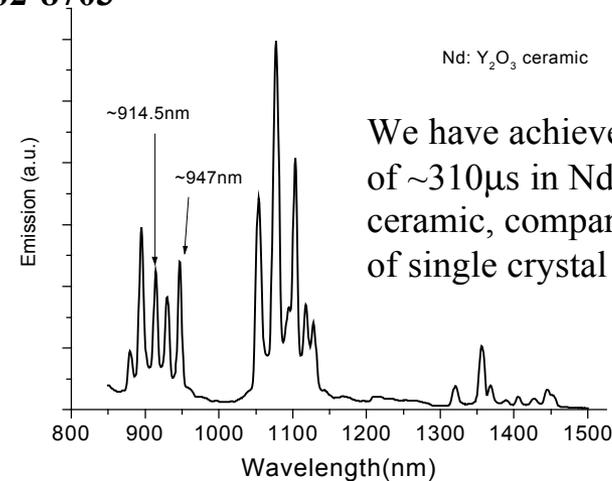
Solid-state Ceramic Laser Material for Remote Sensing of Ozone Using Nd:Yttria

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Phase II Proposal 03-E1.02-8703

Description and Objectives

To develop a solid-state ceramic laser material using Nd:Yttria that can be used in atmospheric remote sensing applications such as LIDAR and DIAL.



Emission spectra of Nd:Y₂O₃ (pump wavelength was 805 nm).

Approach

To further optimize the Nd: Y₂O₃ ceramics grown using novel techniques during Phase I with a focus on improving the overall transmission and optimizing the dopant concentration

Collaborators/Partners

Dr. Vijay Shukla, Rutgers University

Prof. Uwe Hommerich, Hampton University

Schedule and Deliverables

In Phase II we will develop Nd: Y₂O₃ ceramic laser materials that can operate at 914 nm and 946 nm. Material will be delivered to NASA and a prototype ceramic laser will be demonstrated.

NASA & Commercial Applications

Applications include remote sensing, (such as LIDAR, DIAL) chemical detection and scientific research