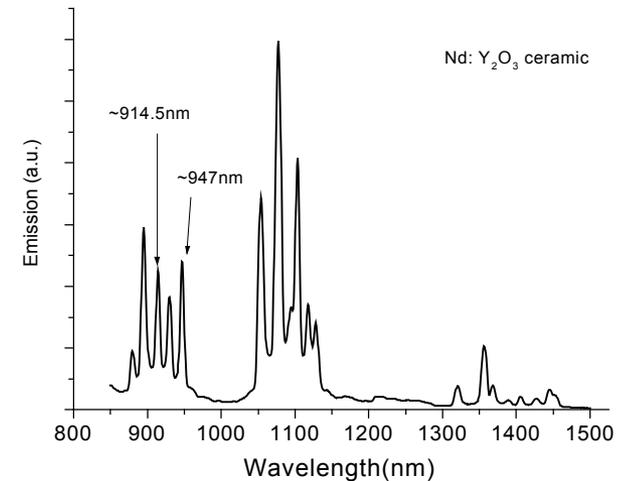


**Solid-state ceramic laser material for remote sensing of ozone using Nd:Yttria****PI: Dr. Sudhir Trivedi****Proposal No.: E1.02**Description and Objectives

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:Y<sub>2</sub>O<sub>3</sub> (pump wavelength was 805 nm).

Approach

To use a proprietary technique to make ceramic powders of Nd:Y<sub>2</sub>O<sub>3</sub> that can be used to fabricate polycrystalline ceramic material with sintered grain size in the nanometer range.

Subcontractors/Partners

Dr. Vijay Shukla, Rutgers University

Prof. Uwe Hommerich, Hampton University

Schedule and Deliverables

Phase I will determine the feasibility of using ND:Yttria as a ceramic laser material. In Phase II, a prototype ceramic laser will be demonstrated.

NASA & Commercial Applications

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