

Report Documentation Page

*Form Approved
OMB No. 0704-0188*

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE 30 SEP 1997	2. REPORT TYPE	3. DATES COVERED 00-00-1997 to 00-00-1997			
4. TITLE AND SUBTITLE Acquisition of a Nd-Yag Pumped MOPO (Master Oscillator/Power Oscillator) Optical Parametric Oscillator		5a. CONTRACT NUMBER			
		5b. GRANT NUMBER			
		5c. PROGRAM ELEMENT NUMBER			
6. AUTHOR(S)		5d. PROJECT NUMBER			
		5e. TASK NUMBER			
		5f. WORK UNIT NUMBER			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) University of Miami, Rosenstil School of Marine and Atmospheric Science, 4600 Rickenbacker Causeway, Miami, FL, 33149		8. PERFORMING ORGANIZATION REPORT NUMBER			
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)			
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)			
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified	Same as Report (SAR)	2	

ACQUISITION OF A ND-YAG PUMPED MOPO (MASTER OSCILLATOR / POWER OSCILLATOR) OPTICAL PARAMETRIC OSCILLATOR

Principal Investigator: Dr. Anthony J. Hynes
Division of Marine and Atmospheric Chemistry
Rosenstiel School of Marine and Atmospheric Science
University of Miami
4600 Rickenbacker Causeway
Miami, Florida 33149-1098
ahynes@rsmas.miami.edu
(305) 361 4173

Award No. N000149710480

LONG-TERM GOALS

This grant provides support for the acquisition of a state-of-the-art Nd-Yag laser pumped optical parametric oscillator (OPO). The instrument is configured in a master oscillator/power oscillator configuration, hence the designation MOPO. The MOPO will be used in conjunction with our pulsed laser photolysis-pulsed laser induced fluorescence (PLP-PLIF) kinetics apparatus and is designed to replace either the photolysis or probe laser, depending on experimental configuration. Two research efforts will be supported by the acquisition of the MOPO. Effort 1: "Kinetics, mechanism and product yields in the atmospheric oxidation of dimethylsulfide", is sponsored by ONR. It is directed towards elucidating the detailed mechanism of, and final products yields from, the OH initiated gas phase oxidation of dimethylsulfide (DMS). Effort 2: "Real-time detection of sodium in size segregated marine aerosols" is also sponsored by ONR. The objective of this project is to develop a new capability for characterization of marine aerosols, specifically, the ability to make near real-time sodium measurements on individual, size-segregated marine aerosols.

OBJECTIVES

A description of the objectives of the projects are described in the reports on project #N000149510242, "Kinetics, mechanism and product yields in the atmospheric oxidation of dimethylsulfide" and project #N000149710133, "Real-time detection of sodium in size segregated marine aerosols".

APPROACH

WORK COMPLETED

Installation of a Spectra Physics MOPO-730 pumped by a PRO-270 Nd-Yag was recently completed in October 1997.

RESULTS

In very preliminary work we have detected the OH radical using sequential two photon laser induced fluorescence.

IMPACT

TRANSITIONS

RELATED PROJECTS

REFERENCES