

REPORT DOCUMENTATION PAGE

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7a. NAME OF MONITORING ORGANIZATION  
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6c. ADDRESS (City, State, and ZIP Code)  
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Holling AFB, D. C. 20332-6448

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Two-Dimensional Velocimetry Instrumentation **LU**

12. PERSONAL AUTHOR(S)  
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18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)  
Two-Dimensional Velocimetry. **(EG)**

19. ABSTRACT (Continue on reverse if necessary and identify by block number)  
This is a brief report on the acquisition and implementation of instrumentation which will be used to make two-dimensional velocimetry measurements in a study of premixed turbulent flames.

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22a. NAME OF RESPONSIBLE INDIVIDUAL  
Dr. Julian M. Tishkoff

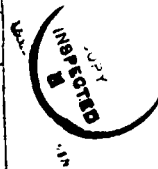
22b. TELEPHONE (Include Area Code)  
(202) 767-**0460**

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**STATUS OF RESEARCH**

Funds provided by DoD URIP and matching funds provided by Penn State and the NASA Space Propulsion Center have been used to purchase equipment for making two-dimensional velocimetry measurements in turbulent flows. The actual equipment which has been purchased is summarized on the following page. This equipment has been acquired, set-up and made operational. Mr. David Nye, an AFRAPT Trainee, who is working on an AFOSR funded study of flame-turbulence interactions, has developed image interrogation software which is used to analyze the two-dimensional velocimetry data. To date, successful analysis of simulated data and preliminary particle imaging velocimetry data have been accomplished.

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Summary of Equipment Purchased

<u>Quantity</u>	<u>Item</u>	<u>Approx. Cost</u>
2	Nd:YAG Lasers (Spectra-Physics #DCR-11-2D)	\$57,300
1	Optical Table (Newport Corp. #MST-410, #NN4-28)	4,300
1	Array Processor and Frame Grabber (Data Translation #DT-7020, #DT-7851)	10,200
1	386/25 Personal Computer System (Compaq #110, VGA Board, Color Monitor, Intel Co-Processor, Software)	10,950
1	Bernoulli Box (IOMEGA #B244X)	2,400
1	Stepping Motor System (Cyber #23)	1,000
1	Argon Ion Laser (Ion-Laser Tech. #5500)	9,500
1	CCD Camera (Cohu #4815/2000)	1,500
	Miscellaneous Optics and Mounts	<u>2,000</u>
	TOTAL	\$98,650

Summary of Funding

DoD URIP	\$55,170
University	36,780
NASA-Center	<u>6,700</u>
TOTAL	\$98,650