

Active

Project #: E-18-533	Cost share #:	Rev #: 11
Center # : 10/11-6-P5091-0A0	Center shr #:	OCA file #:
Contract#: NGT-50705	Mod #: SUPPLEMENT 3	Work type : INST
Prime #:		Document : GRANT
		Contract entity: GTRC
Subprojects ? : Y		CFDA: 43.002
Main project #:		PE #: N/A

Project unit:	MSE	Unit code: 02.010.112
Project director(s):		
SAXENA A	MSE	(404)894-2888
MUZZY J D	CHEM ENGR	(404)-

Sponsor/division names: NASA / HEADQUARTERS/WASHINGTON, DC  
Sponsor/division codes: 105 / 002

Award period: 910701 to 941031 (performance) 941031 (reports)

Sponsor amount	New this change	Total to date
Contract value	0.00	66,000.00
Funded	0.00	66,000.00
Cost sharing amount		0.00

Does subcontracting plan apply?: N

Title: INTERDISCIPLINARY RESEARCH ON LIQUID CRYSTALS &amp; THEIR USE AS ADDITIVES TO...

## PROJECT ADMINISTRATION DATA

OCA contact: Anita D. Rowland 894-4820

Sponsor technical contact	Sponsor issuing office
DR SAMUEL E MASSENBERG (000)000-0000	ZOA F DODD, GRANTS OFFICER (202)708-4759
UNIVERSITY AFFAIRS OFFICER,M/S 105-A NASA LANGLEY RESEARCH CENTER HAMPTON, VA 23665	NASA HEADQUARTERS ACQUISITION DIVISION WASHINGTON, DC 20546

Security class (U,C,S,TS) : U                      ONR resident rep. is ACO (Y/N): N  
Defense priority rating : N/A                      N/A supplemental sheet  
Equipment title vests with: Sponsor                      GIT  
"USE OF FUNDS FOR PURCHASE OF EQUIPMENT IS NOT PERMITTED."  
Administrative comments -  
SUPPLEMENT 3 APPROVES A NCE THROUGH OCTOBER 31, 1994.

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OFFICE OF CONTRACT ADMINISTRATION

NOTICE OF PROJECT CLOSEOUT

Closeout Notice Date 11/17/95

Project No. E-18-533

Center No. 10/11-6-P5091-0A0

Project Director SAXENA A

School/Lab MSE

Sponsor NASA/HEADQUARTERS/WASHINGTON, DC

Contract/Grant No. NGT-50705 Contract Entity GTRC

Prime Contract No.

Title INTERDISCIPLINARY RESEARCH ON LIQUID CRYSTALS & THEIR USE AS ADDITIVES TO

Effective Completion Date 941031 (Performance) 941031 (Reports)

Closeout Actions Required:	Y/N	Date Submitted
Final Invoice or Copy of Final Invoice	Y	
Final Report of Inventions and/or Subcontracts	Y	
Government Property Inventory & Related Certificate	N	
Classified Material Certificate	N	
Release and Assignment	N	
Other	N	

Comments  
\*\*\*NOTE\*\*\* USE NASA FORM FOR PATENT.

Subproject Under Main Project No.

Continues Project No.

Distribution Required:

Project Director	Y
Administrative Network Representative	Y
GTRI Accounting/Grants and Contracts	Y
Procurement/Supply Services	Y
Research Property Management	Y
Research Security Services	N
Reports Coordinator (OCA)	Y
GTRC	Y
Project File	Y
Other	N
	N

NOTE: Final Patent Questionnaire sent to PDPI.

October 23, 1995

GSRP Manager  
NASA Headquarters  
Office of External Affairs Division  
University Programs Branch  
Code XEU  
Washington, DC 20546

RE: NASA Project NGT-50705, Fellowship for Mr. James M. Criss - Administrative Report

Dear GSRP Manager:

Mr. James McRae Criss was supported on the NASA Fellowship from 7/1/91 to 10/31/94. During the period, he received his M.S. degree in Polymers through the School of Materials Science and Engineering in 1993. Mr. Criss continued his studies toward a Ph.D. degree. He is scheduled to receive his Ph.D. degree in the fall or winter quarter of the 1995-96 academic year. Since his NASA Fellowship ran out, he is supported by other funds. His transcript is attached to this report. Mr. Criss has produced outstanding results from the work on his M.S. and Ph.D. thesis and is currently pursuing employment possibilities with several organizations.

Sincerely yours,

Ashok Saxena  
Professor and Chair

AS/jwa

cc: Prof. J. D. Muzzy, Ch.E.



PROGRESS REPORT

## RESEARCH

Three of the rigid rod molecules (additives) were successfully synthesized during the past year. The procedures for the synthesis of these additives have been well established. The crude additives were then purified via recrystallization techniques, and purity was confirmed by Differential Scanning Calorimetry (DSC). Infra-red (IR) and Nuclear Magnetic Resonance (H-NMR) spectroscopy were used to characterize these molecules. Current research is being done on the synthesis of the last additive and on melt blending techniques.

## ACADEMIC

The following classes were successfully completed last year:

Polymer Degradation  
Polymer Solutions & Surfaces  
Instrumental Characterization of Polymers  
Preparation & Reaction of Polymers  
Polymer Structure & Mechanical Properties  
Composite Material & Processes  
Composite Manufacturing & Test Lab  
Experimental Statistics  
Principles and Applications of Engineering Materials  
Physical Metallurgy and Ceramics

Currently I have a cumulative GPA of 3.7.