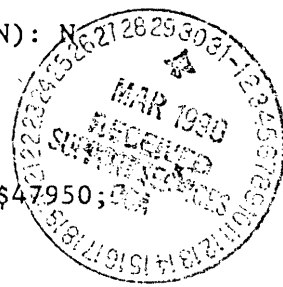


03/28/90

Subprojects ? : N
Main project #:



GEORGIA INSTITUTE OF TECHNOLOGY
OFFICE OF CONTRACT ADMINISTRATION

NOTICE OF PROJECT CLOSEOUT

Closeout Notice Date 11/26/91

Project No. E-25-687_____

Center No. 10/24-6-R6914-0A0_

Project Director MCDOWELL D L_____

School/Lab MECH ENGR_____

Sponsor NATL SCIENCE FOUNDATION/GENERAL_____

Contract/Grant No. DMR-8919263_____ Contract Entity GTRC

Prime Contract No. _____

Title AN INTERNAL PRESSURIZATION SYSTEM FOR BIAxIAL CYCLIC LOADING_____

Effective Completion Date 910831 (Performance) 911130 (Reports)

| Closeout Actions Required: | Y/N | Date Submitted |
|---|-----|----------------|
| Final Invoice or Copy of Final Invoice | N | _____ |
| Final Report of Inventions and/or Subcontracts | Y | 911118 |
| Government Property Inventory & Related Certificate | N | _____ |
| Classified Material Certificate | N | _____ |
| Release and Assignment | N | _____ |
| Other _____ | N | _____ |

CommentsBILLING VIA LETTER OF CREDIT AND 98A SATISFIES THE REQUIREMENT FOR_____
PATENT REPORTING. _____

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.~~

NATIONAL SCIENCE FOUNDATION

1800 G STREET, NW

WASHINGTON, DC 20550

BULK RATE
POSTAGE & FEES PAID
National Science Foundation
Permit No. G-69

PI/PD Name and Address

David L. McDowell
School of Mechanical Engineering
Georgia Tech Research Corp
Atlanta GA 30332

NATIONAL SCIENCE FOUNDATION FINAL PROJECT REPORT

| PART I - PROJECT IDENTIFICATION INFORMATION | |
|---|---|
| 1. Program Official/Org. | Bruce A. MacDonald - DMR |
| 2. Program Name | METALS, CERAMICS, & ELECTRONIC MATERIALS |
| 3. Award Dates (MM/YY) | From: 03/90 To: 08/91 |
| 4. Institution and Address | Georgia Tech Research Corp Administration Building Atlanta GA 30332 |
| 5. Award Number | 8919263 |
| 6. Project Title | Acquisition of Equipment for an Internal Pressurization System for Biaxial Cyclic Loading |

This Packet Contains
NSF Form 98A
And 1 Return Envelope

NSF Grant Conditions (Article 17, GC-1, and Article 9, FDP-II) require submission of a Final Project Report (NSF Form 98A) to the NSF program officer no later than 90 days after the expiration of the award. Final Project Reports for expired awards must be received before new awards can be made (NSF Grant Policy Manual Section 677).

Below, or on a separate page attached to this form, provide a summary of the completed project and technical information. Be sure to include your name and award number on each separate page. See below for more instructions.

PART II - SUMMARY OF COMPLETED PROJECT (for public use)

The summary (about 200 words) must be self-contained and intelligible to a scientifically literate reader. Without restating the project title, it should begin with a topic sentence stating the project's major thesis. The summary should include, if pertinent to the project being described, the following items:

- The primary objectives and scope of the project
- The techniques or approaches used only to the degree necessary for comprehension
- The findings and implications stated as concisely and informatively as possible

An internal pressurization capability was purchased and added to an existing axial-torsional system with the support of this grant. The system permits internal pressurization of tubular specimens up to 30 kpsi, and higher levels with intensification. A separate controller for the pressure was purchased and installed which maintains synchronization with the axial and torsional strain (load/displacement) channels. This synchronization is necessary for complex path history imposition. With this capability, plasticity and damage studies will be conducted under more complex combined stress states for both metallic and composite tubes. The system was delivered and successfully installed in summer 1991.

PART III - TECHNICAL INFORMATION (for program management use)

List references to publications resulting from this award and briefly describe primary data, samples, physical collections, inventions, software, etc. created or gathered in the course of the research and, if appropriate, how they are being made available to the research community. Provide the NSF Invention Disclosure number for any invention.

It is anticipated that a number of studies will be conducted with this equipment, leading to future publications.

| | |
|---|----------|
| | 11/11/91 |
| Principal Investigator/Project Director Signature | Date |

| |
|---|
| <p>IMPORTANT:</p> <p>MAILING INSTRUCTIONS</p> <p>Return this <i>entire</i> packet plus all attachments in the envelope attached to the back of this form. Please copy the information from Part I, Block I to the <i>Attention block</i> on the envelope.</p> |
|---|

PART IV — FINAL PROJECT REPORT — SUMMARY DATA ON PROJECT PERSONNEL

(To be submitted to cognizant Program Officer upon completion of project)

The data requested below are important for the development of a statistical profile on the personnel supported by Federal grants. The information on this part is solicited in response to Public Law 99-383 and 42 USC 1885C. All information provided will be treated as confidential and will be safeguarded in accordance with the provisions of the Privacy Act of 1974. You should submit a single copy of this part with each final project report. However, submission of the requested information is not mandatory and is not a precondition of future award(s). Check the "Decline to Provide Information" box below if you do not wish to provide the information.

Please enter the numbers of individuals supported under this grant.
Do not enter information for individuals working less than 40 hours in any calendar year.

| | Senior Staff | | Post-Doctorals | | Graduate Students | | Under-Graduates | | Other Participants ¹ | |
|---|---------------------------------------|------|----------------|------|-------------------|------|-----------------|------|---------------------------------|------|
| | Male | Fem. | Male | Fem. | Male | Fem. | Male | Fem. | Male | Fem. |
| A. Total, U.S. Citizens | | | | | | | | | | |
| B. Total, Permanent Residents | | | | | | | | | | |
| U.S. Citizens or Permanent Residents ² : | | | | | | | | | | |
| American Indian or Alaskan Native . . . | | | | | | | | | | |
| Asian | | | | | | | | | | |
| Black, Not of Hispanic Origin | | | | | | | | | | |
| Hispanic | | | | | | | | | | |
| Pacific Islander | | | | | | | | | | |
| White, Not of Hispanic Origin | | | | | | | | | | |
| C. Total, Other Non-U.S. Citizens | | | | | | | | | | |
| Specify Country | | | | | | | | | | |
| 1. | | | | | | | | | | |
| 2. | | | | | | | | | | |
| 3. | | | | | | | | | | |
| D. Total, All participants (A + B + C) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Disabled³ | ***** This is an equipment grant***** | | | | | | | | | |

☐ Decline to Provide Information: Check box if you do not wish to provide this information (you are still required to return this page along with Parts I-III).

¹Category includes, for example, college and precollege teachers, conference and workshop participants.

²Use the category that best describes the ethnic/racial status for all U.S. Citizens and Non-citizens with Permanent Residency. (If more than one category applies, use the one category that most closely reflects the person's recognition in the community.)

³A person having a physical or mental impairment that substantially limits one or more major life activities; who has a record of such impairment; or who is regarded as having such impairment. (Disabled individuals also should be counted under the appropriate ethnic/racial group unless they are classified as "Other Non-U.S. Citizens.")

AMERICAN INDIAN OR ALASKAN NATIVE: A person having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.

ASIAN: A person having origins in any of the original peoples of East Asia, Southeast Asia and the Indian subcontinent. This area includes, for example, China, India, Indonesia, Japan, Korea and Vietnam.

BLACK, NOT OF HISPANIC ORIGIN: A person having origins in any of the black racial groups of Africa.

HISPANIC: A person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.

PACIFIC ISLANDER: A person having origins in any of the original peoples of Hawaii; the U.S. Pacific Territories of Guam, American Samoa, or the Northern Marianas; the U.S. Trust Territory of Palau; the islands of Micronesia or Melanesia; or the Philippines.

WHITE, NOT OF HISPANIC ORIGIN: A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.