

GEORGIA INSTITUTE OF TECHNOLOGY  
OFFICE OF CONTRACT ADMINISTRATION  
SPONSORED PROJECT INITIATION

Date: 6 September 1979

Project Title: New Methods for Biomedical Research

Project No: G-33-D04

Project Director: Dr. Nai-Teng Yu

Sponsor: DHEW/PHS/NIH National Eye Institute (Research Career Development Program)

Agreement Period: From 1 July 1979 Until 30 June 1980 (04 year)

Type Agreement: Grant No. 5-K04-EY00073-04

Amount: \$35,585

Reports Required: Annual Progress Reports with continuation applications; Terminal Progress Report upon Grant expiration.

Sponsor Contact Person (s):

Technical Matters

George M. Steinberg, Ph.D.  
Program Official  
Extramural Program Director  
Cataract Program  
National Eye Institute  
Bethesda, Maryland 20014

Contractual Matters

(thru OCA)  
Gaye Lynch  
Grants Management Contact  
Extramural Services Branch  
National Eye Institute  
Bethesda, Maryland 20014

Phone: 301/496-5884

NOTE: FOLLOW-ON PROJECT TO G-33-D03  
(03 year)

Grants Management Officer:  
Anna Marie Perrell

Defense Priority Rating: None

Assigned to: Chemistry (School/Laboratory)

COPIES TO:

Project Director  
Division Chief (EES)  
School/Laboratory Director  
Dean/Director-EES  
Accounting Office  
Procurement Office  
Security Coordinator (OCA)  
Reports Coordinator (OCA)

Library, Technical Reports Section  
EES Information Office  
EES Reports & Procedures  
✓ Project File (OCA)  
Project Code (GTRI)  
Other \_\_\_\_\_

SPONSORED PROJECT TERMINATION SHEETDate 7/12/83Project Title: New Methods for Biomedical ResearchProject No: G-33-D04Project Director: Dr. Nai-Teng-YuSponsor: DHEW/PHS/NIH National Eye Institute (Research Career Development Program)Effective Termination Date: 6/30/80 (04 year)Clearance of Accounting Charges: 6/30/80

Grant/Contract Closeout Actions Remaining:

NONE

- ☐ Final Invoice and Closing Documents
- ☐ Final Fiscal Report
- ☐ Final Report of Inventions
- ☐ Govt. Property Inventory & Related Certificate
- ☐ Classified Material Certificate
- ☐ Other \_\_\_\_\_

NOTE: Follow-on Project (05 year) - G-33-D05

Assigned to: Chemistry (School/Laboratory)COPIES TO:

RAN  
~~Administrative Council~~  
Research Property Management  
Accounting  
Procurement/EES Supply Services

Research Security Services  
Reports Coordinator (OCA)  
Legal Services (OCA)  
Library

EES Public Relations (2)  
Computer Input  
Project File  
Other GTRI

|  |  |                                 |               |
|--|--|---------------------------------|---------------|
|  |  | GRANT NUMBER                    |               |
| PROGRESS REPORT  |  | 5 K04 EY 00073-04               |               |
| NAME OF HEAD OF DEPARTMENT OR DEPARTMENTAL SUBDIVISION   |  | ACCOMPLISHMENTS COVERING PERIOD |               |
| J. A. Bertrand   |  | FROM                            | THROUGH       |
| NAME OF Awardee  |  | July 1, 1979                    | June 30, 1980 |
| Nai-Teng Yu  |  |                                 |               |
| INSTITUTION  |  |                                 |               |
| Georgia Institute of Technology  |  |                                 |               |
| TITLE OF RESEARCH PROPOSAL (REPEAT TITLE SHOWN ON PAGE 1)  |  |                                 |               |
| New Methods for Biomedical Research  |  |                                 |               |
| STATEMENT OF ACCOMPLISHMENT (IF SPACE IS INADEQUATE, USE CONTINUATION PAGE)  |  |                                 |               |
| <p>1. Dr. Yu has completed the testing of a new multichannel Raman system which proves to be ideally suited for hemeprotein and cataract research.</p> <p>2. Dr. Yu continued to supervise the reserach of two postdoctoral associates, one graduate student, and one research specialist, and to collaborate on research with Professor John F. R. Kuck of Emory University, School of Medicine.</p>  |  |                                 |               |
| <u>Service in an advisory capacity:</u>  |  |                                 |               |
| <p>1. Consultant to Government of Republic of China on Biomedical Research, National Reconstruction Committee, July 1 - Aug. 2, 1979.</p> <p>2. Consultant to laser Raman project at National Tsing-Hua University, Shinchu, Taiwan, R.O.C.</p>  |  |                                 |               |
| <u>Outside lectures and seminars:</u>  |  |                                 |               |
| <p>1. Kiwanis Club, "Human Cataractogenesis", July 21, 1979, East Point, GA.</p> <p>2. Oakland University, Institute of Biological Sciences, "Biological Applications of Laser Raman Spectroscopy", March 12, 1980.</p> <p>3. "Multichannel-Detected Resonance Raman Spectra of Manganese Myoglobin and Its Azide Complex", VIIth International Conference on Raman Spectroscopy, Ottawa, Canada, 1980.</p>  |  |                                 |               |
| <u>Publications:</u>   |  |                                 |               |
| <p>1. Nai-Teng Yu, C. C. Askren and John F. R. Kuck, Jr. "Effects of Aging on Sulfhydryl Profiles along the Visual Axis of Human, Rabbit, Chicken and Rat Lens" Exp. Eye Res. (to be submitted).</p> <p>2. Nai-Teng Yu and M. Tsubaki "Resonance Raman Spectra of Manganese Myoglobin and Its Azide Complex. Assignment of a New Charge-Transfer Band to Azide (<math>\pi</math>) <math>\rightarrow</math> Porphyrin (<math>\pi^*</math>) Transition", Biochemistry (submitted).</p> <p>3. Nai-Teng Yu and R. B. Srivastava, "Resonance Raman Spectroscopy of Heme Proteins with Intensified Vidicon Detectors: Studies of Low Frequency Modes and Excitation Profiles in Cytochrome <u>c</u> and Hemoglobin" J. Raman</p> |  |                                 |               |

G-33-304/Yu  
Annual Report - (Final)

Spectrosc. (in press).

4. M. Tsubaki, R. B. Srivastava and Nai-Teng Yu, "Resonance Raman Studies of Azide Binding to Myoglobin and Hemoglobin" Biochemistry, (to be submitted).
5. R. B. Srivastava, C. Pace and Nai-Teng Yu, "Comparative Raman Studies of Cytochrome  $b_{562}$  and Cytochrome  $c$ " FEBS Letts. (to be submitted).
6. C. C. Askren, Nai-Teng Yu and John F. R. Kuck, Jr., "Variation of the Concentration of Sulfhydryl along the Visual Axis of Aging Lenses by Laser Raman Optical Dissection Technique", Exp. Eye Res. 29, 647 (1979).
7. Nai-Teng Yu, John F. R. Kuck, Jr. and C. C. Askren, "Red Fluorescence in Older and Brunescant Human Lenses" Invest. Ophthalm. and Vis. Sci., 18, 1278 (1979).
8. A. Lanir, Nai-Teng Yu and R. H. Felton, "Conformational Transitions and Vibronic Couplings in Acid Ferricytochrome  $c$ . A Resonance Raman Study", Biochemistry, 18, 1656 (1979).
9. A. Lanir and Nai-Teng Yu, "A Raman Spectroscopic Study of the Interaction of Divalent Metal Ions with Adenine Moiety of Adenosine 5'-Triphosphate", J. Biol. Chem., 254, 5882 (1979).