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No. ERIP/ER/DG-NSM/990416702/M/01/1638
Directorate of Extramural Research &
Intellectual Property Rights (ER&IPR)
Defence Res & Dev Orgn (DRDO)
DRDO Bhawan, Rajaji Marg,
New Delhi-110 011

Dated: 30 Nov 2016

To
Dr. P. Venugopal Reddy
Professor of Physics & Director
Vidya Jyothi Institute of Technology
Hyderabad-500075

Sub: Grants-in-Aid for research project titled "Investigation of Nanocrystalline Bismuth Ferrite for Possible Shape Memory and Reconfigured Antenna Applications".

Approval of the competent authority (Chief Controller R&D TM) is hereby conveyed for a grant of **Rs. 50.645 Lakh** (Rupees Fifty Lakhs Sixty Four Thousand and Five Hundred Only), to Vidya Jyothi Institute of Technology, Hyderabad, for pursuing the research on the subject titled project by Dr. P. Venugopal Reddy, Professor of Physics & Director, Vidya Jyothi Institute of Technology, Hyderabad-500075, as Principal Investigator and Dr. Y. Kalyan Lakshmi, Dept. of Physics, Nizam College, (Osmania University), Hyderabad as Co-investigator.

2. The grant shall be spent as follows:

| Expenditure on → (Rs in lakh) during → | Year 1 | Year 2 | Year 3 | Line Total |
|---|--------|--------|--------|------------|
| a) Staff (JRF) @ Rs. 25,000+ 15% HRA | 3.45 | 3.45 | 3.45 | 10.35 |
| b) Equipment (including spares thereof) | 34.76 | - | - | 34.76 |
| c) Operation and maintenance | - | - | - | - |
| d) Expendables | 0.5 | 0.5 | 0.5 | 1.5 |
| e) Travel (Domestic) | 0.5 | 0.5 | 0.5 | 1.5 |
| f) Contingencies | 0.5 | 0.5 | 0.5 | 1.5 |
| g) Visiting Faculty | - | - | - | - |
| h) Procured services (other than (g)) and metered utilities | - | - | - | - |
| i) Institutional Overheads @ 10% of (a) only | 0.345 | 0.345 | 0.345 | 1.035 |
| Column Totals | 40.055 | 5.295 | 6.295 | 50.645 |

Grand total: **Rs. 50.645 Lakh** (Rupees Fifty Lakhs Sixty Four Thousand and Five Hundred Only).

- The project will last for 03 years from the date of release of the first installment by the PCDA (R&D) and it will be governed by the terms and conditions given overleaf.
- The objectives and deliverables of the project are placed at Annexure 'A'.
- This sanction issues in exercise of powers conferred to Sl. No. 3.1 of GOI Ministry of Defence letter No. DRDO/DBFA/FA/83226/M/01/2031/D (R&D) dated 30th July 2010.
- The release of funds will be authorized by Accounts Officer of the Directorate of ER&IPR.
- The expenditure is debitable to Major Head 2000 - Defence Services - Research & Development, Minor Head 004 - Research/Research & Development, Sub-Head (C) - Extramural Research (EMR) Code Head 852/06.
- This is issued with the concurrence of IFA vide their U.O. No. IFA/R&D/New Delhi/1183/0911 dated: 23.11.2016.
- The sanction code is CC/TM/ER/PR/GIA/16-17/023.
- Separate saving bank account to be maintained for the project.

(Sh. Anil Kumar Aggarwal)
Director

Copy to:-

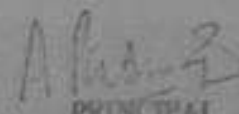
- Principal (R&D), Vidya Jyothi Institute of Technology, Hyderabad-500075. The cheque will be issued by PCDA in his favour.
- The Director, DLRL, DRDO, Chandrayangutta Lines, Hyderabad-500005.
- Dr. Ashwani Kumar, Sc 'G' DLRL, DRDO, Chandrayangutta Lines, Hyderabad-500075, as Domain Experts.
- PCDA (R&D, DRDO CELL), West Block -V, Sector 1, R.K. Puram, New Delhi - 110 085 - One ink signed copy.
- IFA (R&D), DRDO, HQs, Rajaji Marg, New Delhi - 110 005 - One ink signed copy.
- DGADS, L-2 Block, New Delhi - 110 007.

PRINCIPAL

Vidya Jyothi Institute of Technology
Huzurpally, G.M. C.B. Post
Hyderabad-75.

SUMMARY OF PROPOSAL TO DRDO FOR AN EXTRAMURAL RESEARCH GRANT

| | | | | | | | | | | | | | |
|---|---|--|-----|----|----|-------------|-----------|-----------|--|----|----|----|----------------|
| <p>1. Proposal (Title):</p> <p><i>Investigation of nanocrystalline Bismuth ferrite for possible shape memory and reconfigured antenna applications</i></p> <p>Keywords (4-5): <i>Shape memory effect, multiferroics, bismuth ferrite, Ferroelasticity, antennas</i></p> | | <p>Date recd.:</p> <p>Date of ER&IPR File Number:</p> <p>ERIP/ER/</p> | | | | | | | | | | | |
| <p>i) Type of Institution: <i>Autonomous Engineering College</i></p> <p>ii) University - <i>JNTU(H)</i></p> | <p>Duration of grant:</p> <p>Years: 3</p> | | | | | | | | | | | | |
| <p>2. Principal Investigator (PI):</p> <p>Name: - <i>Dr. P.Venugopal Reddy</i></p> <p>Designation: - <i>Professor of Physics & Director.</i></p> | | <p>3. Date of Birth</p> <table border="1"> <tr> <td>YY:</td> <td>MM</td> <td>DD</td> </tr> <tr> <td><i>1951</i></td> <td><i>05</i></td> <td><i>15</i></td> </tr> </table> <p>Age: <i>64 Years</i></p> <p>Sex: <i>Male</i></p> | YY: | MM | DD | <i>1951</i> | <i>05</i> | <i>15</i> | <p>Referees' reports:</p> <table border="1"> <tr> <td>01</td> <td>02</td> <td>03</td> </tr> </table> | 01 | 02 | 03 | <p>Remarks</p> |
| YY: | MM | DD | | | | | | | | | | | |
| <i>1951</i> | <i>05</i> | <i>15</i> | | | | | | | | | | | |
| 01 | 02 | 03 | | | | | | | | | | | |
| <p>4. PI's address: <i>Vidya Jyothi Institute of Technology, Hyderabad - 500075</i></p> <p>Mobile:- <i>09866467029</i></p> <p>Phone: <i>08413-235399</i></p> <p>Fax: <i>08413- 235509</i></p> <p>Email: <i>paduruvenugopalreddy@gmail.com</i></p> | | <p>5. Co-Investigator (CIs):</p> <p>Name: <i>Dr.Y. Kalyana Lakshmi</i></p> <p>Address: <i>Dept. of Physics, Nizam College, (Osmania University) Hyderabad - 500 001</i></p> <p>(Phone/e-mail): <i>08008244664/ kalyaniyanapu@gmail.com</i></p> | | | | | | | | | | | |


PRINCIPAL
Vidya Jyothi Institute of Technology
Humayyunnagar (Vill), C. B. Road
Hyderabad-75.

Department of Computer Science & Engg

supervised by Dr. Shobhartha, Acharya

1. RSCM Document Ref. No. _____ Date of Issue: YY MM DD Issuing DDO's (1) and (2) (Project)

2. Name and address of Research Service Provider (RSP)
 Dept of Computer Science & Engg
 Vidyajyothi Institute of Technology
 Aziz-Nagar Road, CBST Plot, Hyd-500075, T.S. India

(a) This contract will require a formal amendment if the following key professionals are not available to RSP:
 1. Dr. Shobhartha, Acharya
 2. Dr. D. Aruna Kumar
 (b) RSP is authorized to engage their professionals as research consultants (owner, institutes/companies):
Agree

3. Principal technical features of Research Service to be provided (Detailed in Attachment A)
 1. Hardening through mobile
 2. Comparative study report on security

4. DRDO will make available the following DRDO-owned equipment to RSP (Detailed in Attachment B):
N/A

5. The technical performance of this contract shall be complete when RSP submits the Final Report before (date) 01/11/16

9.1 Expenditure on items below shall not exceed sums shown against each

| | | | |
|--------------|--|--------------|----------|
| a) Personnel | (2 Research Scholars) | Rs. in lakhs | 1.20,000 |
| b) Equipment | Laptop-2, Mobile Phones-3 | | 2.50,000 |
| c) Other | Books, Journals, Travel, Contingencies | | 1.30,000 |
| | | Total > | 5.00,000 |

9.2 Schedule of payments (Rs. in lakhs)

| | Date | Payment* | |
|---|-----------|----------|-----------|
| a) Initial advance | | | |
| b) At Performance Milestone I | 01/NOV/16 | 3 | |
| c) At Performance Milestone II | May 14 | 2 | |
| d) At Performance Milestone III | NOV 14 | 2 | |
| e) On submission of Final Report (Refer also entry 8 above) | July 16 | 1 | |
| | 01/NOV/16 | 2 | |
| | | Total > | 10,00,000 |

* Payments will be made within 45 days of receipt by I/EP of Contingent Bill

10. DRDO will deem this contract, including an endorsement, to have been consummated when signed below by the authority of the research institution (e.g. Regime) competent to enter into this contract.

11. Signature of I/EP contract administrator

Dr. A. Padma
 PRINCIPAL
 Vidyajyothi Institute of Technology
 Himayatnagar (VIII), C.B. Post
 Hyderabad-500 075

K. Srinivas
 Director General of I/EP, NARAYANA
 Army Station (Centralizing Technical
 Support) Hyderabad

क्यापरा भेजी जाती है, मदिना में लाना
 कार्यालय में सीमा समाप्त करने का फार्म भरना
 being forwarded to
 for necessary action. Further correspondence

PRINCIPAL
 Vidyajyothi Institute of Technology
 Himayatnagar (VIII), C. B. Post
 Hyderabad-75

Please file on reverse. appear on this contract