


# Minor Research Projects

Grants received from Government and non-governmental agencies for research projects, endowments, Chairs in the institution.

Dr.T.S.SHYAM PRASAD



A/c Dy No. 2152  
Date: 25/1/2018

**UNIVERSITY GRANTS COMMISSIONS - SOUTH EASTERN REGIONAL OFFICE**  
5-9-194, CHIRAG ALI LANE, IV FLOOR, A.P.S.F.C. BUILDING, HYDERABAD -500 001  
Phones: 040 - 23204735, 23200208 FAX: 040 - 23204734, Website: [www.ugc.ac.in](http://www.ugc.ac.in), email: [ugcsero@gmail.com](mailto:ugcsero@gmail.com)

No.F MRP-7045/16 (SERO/UGC) Link No:7045. January,2018

The Accounts Officer UGC-SERO, Hyderabad Comcode: APSK015 UniqueID:APAN00007747 25 JAN 2018

**Sub: Release of Grants-in-aid to Minor Research Projects for the year 2017-2018 .**  
Sir / Madam,

The has reference to the Minor Research Project proposal submitted by Dr.T.S.SHYAM PRASAD Department of POLITICAL SCIENCE of "GOVT. COLLEGE (M)" ANANTAPURAMU, ANANTAPUR DIST. entitled "POLICY AND IMPLEMENTATION OF RIGHT TO EDUCATION-A CASE STUDY OF ANANTAPURAM DISTRICT OF ANDHRA PRADESH". The subject expert, who evaluated the proposal, has recommended for financial assistance as detailed below.

Sl. No	Item	Amount Allocated (Rs.)	Amount Sanctioned as first installment (Rs.)
1.	Books & Journals	25000.	25000.
2.	Equipment	0 0	0 0
	<b>Total</b>	<b>25000.</b>	<b>25000.</b>
3.	Field work & Travel	125000.	62500.
4.	Chemical & Glass Ware	0 0	0 0
5.	Contingency (incl. Special Needs)	75000.	37500.
6.	Hiring Services	75000.	37500.
	<b>Total</b>	<b>275000.</b>	<b>137500.</b>
	<b>Grand Total</b>	<b>300000.</b>	<b>162500.</b>

1. I am further to convey the sanction of the University Grants Commission to the payment of Rs.162500. to the principal, GOVT. COLLEGE (M),ANANTAPURAMU,ANANTAPUR DIST. as first installment (100% Non-Recurring and 50% Recurring grants) towards the above project.

Amount Sanctioned	Head of Accounts	Category
Rs. 25000.	35-CAP-MRP(50)-3(A)2202.03.102.02.01	GEN
Rs. 137500.	31-GIA-MRP(50)-3(A)2202.03.102.02.01	GEN

2. The above approval is subject to the general conditions of grants prescribed by the UGC for this scheme.  
3. The sanctioned amount is debitible to the Head of Accounts 35-CAP-MRP(50)-3(A)2202.03.102.02.01 (General), 31-GIA-MRP(50)-3(A)2202.03.102.02.01(General) and is valid for payment during the financial year 2017-18 only and the amount of the Grant shall be drawn by the Accounts Officer (Drawing and Disbursing Officer) UGC-SERO, Hyd. on the Grants-In Aid Bill and shall be disbursed to and credited to "The Principal, GOVT. COLLEGE (M), ANANTAPURAMU, ANANTAPUR DIST. by Electronic Mode through PFMS Portal at the following details: (a) Name & Address of Account Holder: The Principal, GOVT. COLLEGE (M), ANANTAPURAMU, ANANTAPUR DIST. (b) Name & Address of Bank Branch: AB, ANANTAPUR  
(c) Account No: 038510011007184 (d) IFSC Code: ANDB0000385.

4. In case the Principal investigator is having ongoing Major/Minor Research Project OR has been transferred/left/retired from the college, the released amount of Rs.162500.- may be returned to UGC-SERO, Hyderabad immediately, failing which action will be initiated against the College for not adhering with the norms of UGC for the scheme.  
5. The grantee institution shall ensure the utilization of grants -in-aid for which it is being sanctioned/paid. In case of non-utilization /part utilization, interest @ 10% per annum as amended from time to time on utilized amount from the date of draw! to the date of refund as per provision contained in General Financial Rules of Govt. of India will be charged.

6. The assets acquired wholly or substantially out of UGC's grants shall not be disposed or encumbered or utilized for the purposes other than those for which the grant was given, without proper sanction of the UGC and should, at any time the college ceased to function, such assets shall revert to the UGC.
7. The Principal investigator of the project is required to submit the First year progress report of the work done along with the documents 1) Annual Report of the Project as per Annexure-III 2) Utilization Certificate duly signed by the Principal Investigator, Principal & Chartered Accountant 3) Statement of Expenditure for the approved heads for the sanctioned amount as per Annexure-V duly signed by the Principal Investigator, Principal & Chartered Accountant.
8. The interest earned by the College / Institute on this grants-in-aid shall be treated as additional grant which may be shown in the Utilization Certificate / Statement of Expenditure to be furnished by the grantee institution.
9. The college has to send the filled in Acceptance certificate within 15 days of receipt of this letter, else the college may return back the sanctioned amount to this office. Further if the conditions of the acceptance letter is not acceptable or applicable to the P.I/College, the sanctioned amount be refunded back to SERO-UGC, Hyderabad.
10. The guidelines of Minor Research Project have to be followed in toto.
11. The Grant is subject to the adjustment on the basis of Utilization Certificate in the prescribed proforma submitted by the University/Institution.
12. The University/Institution shall maintain proper accounts of the expenditure out of the Grants, which shall be utilized, only on the approved items of expenditure.
13. The Utilization Certificate to the effect that the grant has been utilized for the purpose for which it has been sanctioned shall be furnished to UGC as early as possible after the close of current financial year.
14. The college shall maintain a Register of Assets acquired wholly or substantially out of the grant in the prescribed proforma.
15. The College shall fully implement to Official languages Policy of Union Govt. and comply with the Official Language Act, 1963 and Official languages (use for official purposes of the Union) Rules, 1976 etc.,
16. The approval for the above has been received vide letter No.F.7-3/2016(SERO/MRP/RO) dated 6<sup>th</sup> September, 2016 from UGC, New Delhi.

Yours faithfully,

(Dr.G.Srinivas)  
Joint Secretary

25/01/2018

Copy to:

1. The Principal (Along with DD / Funds transferred through E-mode)  
GOVT. COLLEGE (M)  
ANANTAPURAMU, ANANTAPUR DIST. - 515001.
2. Dr.T.S.SHYAM PRASAD  
Dept. of POLITICAL SCIENCE  
GOVT. COLLEGE (M)  
ANANTAPURAMU, ANANTAPUR DIST. - 515001.
3. The Dean/Director, College Development Council of affiliating University
4. The Commissioner /Director Collegiate Education, Government of ANDHRA PRADESH
5. The Principal Accounts General (A & E)- Government of ANDHRA PRADESH

H (G.K.Pasrija)  
Under Secretary

GAR Cap. Sl.No. 580 /2017-2018

GAR GIA Sl.No. 913 /2017-2018

The sanctioned grant of Rs.162500. /- has been transferred to your college Account as mentioned at the Point No. 3 of this Sanction Order by e-payment through PFMS portal vide date...3/2/18.....You are requested to acknowledge the receipt of the above amount in your account by sending back the enclosed stamped receipt within 7 days.

(R.Rayappa)  
Accounts Officer



UNIVERSITY GRANTS COMMISSION - SOUTH EASTERN REGIONAL OFFICE  
5-9-194, CHIRAG ALI LANE, IV FLOOR, A.P.S.F.C. BUILDING, HYDERABAD -500 001  
Phones: 040 - 2324735, 23200208 FAX: 040 - 23204734.

F.No:MRP2045/16 (UGC-SERC)

Date: 30/08/2021

Link No -2045

The Principal  
Govt. College (m)  
ANANTAPURAMU-515011  
ANDHRA PRADESH

NBSI/  
Bank  
Seal

Sub: UGC assistance to Minor Research Project approved to Dr./Mr./Mrs./Ms. T.S. SHYAM PRASAD, Dept. of Political Science entitled "Policy and implementation of Right to Education - A. Case study of Anantapuram Dist. H.A.P."  
-Reg.

Sir/Madam,

Based on the documents submitted by the College/Principal Investigator of the Project on the subject cited above, I am directed to inform you that the accounts of the project has been treated as Settled.

Yours faithfully,

*R Manoj Kumar*  
(Dr.R.Manoj Kumar)  
Joint Secretary

Copy to:

DR. T. S. SHYAM PRASAD  
DEPT. OF POLITICAL SCIENCE  
GOVT. COLLEGE (M)  
ANANTAPURAMU-515011  
ANDHRA PRADESH

*R Manoj Kumar*  
(Dr.R.Manoj Kumar)  
Joint Secretary



Smt. T.Sailaja Rani



Ac Dy No: 1408  
Date: 28.03.19

UNIVERSITY GRANTS COMMISSION - SOUTH EASTERN REGIONAL OFFICE  
5-9-194, CHIRAG ALI LANE, IV FLOOR A.P.S.F.C. BUILDING, HYDERABAD -500 001  
Phones: 040 - 23204735, 23200208 FAX: 040 - 23204734, Website: www.ugc.ac.in, ugcsero@gmail.com

No: F. MRP-7059/16 (MRP/UGC-SERO)

March, 2019

The Accounts Officer  
South Eastern Regional Office  
University Grants Commission  
Hyderabad - 500 001

LINKNO:7059. DEPT:CHEMISTRY  
COMCODE: APSK015

28 MAR 2019

Sub Release of Grants-in-aid to The Principal GOVT. COLLEGE (MEN) ANANTAPUR515001. Under the Scheme "Minor Research Projects" - Reg.

Sir/Madam,

On the basis of the accounts received for the first installment grant, I am to convey the sanction of the Commission for the payment of Rs.28000. to The Principal, GOVT. COLLEGE (MEN) ANANTAPUR 515001. as second installment towards the Minor Research Project entitled SYNTHESIS CHARACTERIZATION AND BIOLOGICAL STUDIES OF ORGANOPHOSPHOROUS AND NITROGEN HETEROCYCLES awarded to Smt. T. SAILAJA RANI Department-of-CHEMISTRY as per the details given below:-

Item	Allocation (Rs.)	Amount sanctioned so far (Rs.)	Amount sanctioned being (Rs.)	Total amount sanctioned (Rs.)
Hiring Services	0 0	0 0	0 0	0 0
Contingency	30000.	15000.	12000.	27000.
Chemicals	40000.	20000.	16000.	36000.
Travel/Field Work	0 0	0 0	0 0	0 0
Total	70000.	35000.	28000.	63000.
Equipment	80000.	80000.	0 0	80000.
Books	10000.	10000.	0 0	10000.
Total	90000.	90000.	0 0	90000.
Grand Total	160000.	125000.	28000. ✓	153000.

Remarks:

The grant is debitible to the following head of account.

Amount Sanctioned	Head Of Account	Category
Rs.28000.	GEN-3(A)-2202.03.102.02.31 - 19(XXV)	GEN

The sanctioned amount is debitible to the Major Head of Account: GEN-3(A)-2202.03.102.02.31 - 19(XXV) - Committed liabilities: GIA(31) - Minor Research Project (General) and is valid for payment during the financial year 2018-19 Only and subject to the condition indicated below:

The amount of the Grant shall be drawn by the Accounts Officer (Drawing and Disbursing Officer) UGC-SERO, Hyd. on the Grants-In Aid Bill and shall be disbursed to and credited to "The Principal, GOVT. COLLEGE (MEN), ANANTAPUR - 515001. by Electronic Mode through PFMS Portal at the following details:

(a) AccountNo:038510011007184(b)IFSCCode:ANDB0000385 (c)UniqueID: APAN00007747

(d)Name & Address of Account Holder: The Principal, GOVT. COLLEGE (MEN), ANANTAPUR(e) Name & Address of Bank Branch:

- The Grant is subject to adjustment on the basis of Utilization Certificate in the prescribed Proforma submitted by the Institution.
- The Institution shall maintain proper accounts of the expenditure out of the Grants which shall be utilized only on the approved items of expenditure.
- The institution may follow the General Financial Rules, 2017 and take urgent necessary action to amend their manuals of financial procedures to bring them in conformity with GFR, 2017 and these don't have their own approved manuals on financial procedures may adopt the provision of GFR 2017 and instructions / Guidelines thereunder from time to time.
- The Utilization Certificate to the effect that the grant has been utilized for the propose for which it has been sanctioned shall be furnished to UGC as early as possible after the close of current financial year.
- The assets acquired wholly or substantially out of UGC's Grant shall NOT be disposed or encumbered or utilized for the proposes other than those for which the grants was given without proper sanction of the UGC and should at any time the Institution ceased to function, such assets shall revert to the University Grants Commission.
- A Register of Assets acquired wholly or substantially out of the Grant shall be maintained by the Institution in the prescribed proforma.



UNIVERSITY GRANTS COMMISSION - SOUTH EASTERN REGIONAL OFFICE  
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Phones: 040 - 23204735, 23200208 FAX: 040 - 23204734.

F.No:MRP-2059/16 (UGC-SERC)

Date: 30/08/2021

Link No - 2059

The Principal  
Govt. College (men)  
ANANTAPUR - 585 106

Sub: UGC assistance to Minor Research Project approved to Dr./Mr./Mrs./Ms. I. SHALAJA RANI, Dept. of CHEMISTRY entitled "Synthesis Characterization and Biological Studies of organophosphorous & Nitrogen . . . ."  
-Reg.

Sir/Madam,

Based on the documents submitted by the College/Principal Investigator of the Project on the subject cited above, I am directed to inform you that the accounts of the project has been treated as **Settled**.

Yours faithfully,

R Manoj Kumar  
(Dr.R.Manoj Kumar)  
Joint Secretary

Copy to:

Smt. I. SHALAJA RANI  
DEPT. OF CHEMISTRY  
GOVT. COLLEGE (MEN)  
ANANTAPUR - 585 106.

R Manoj Kumar  
(Dr.R.Manoj Kumar)  
Joint Secretary



A/c Dy No. 2164  
Date: 25/1/2018

UNIVERSITY GRANTS COMMISSIONS - SOUTH EASTERN REGIONAL OFFICE  
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Phones: 040 - 23204735, 23200208 FAX: 040 - 23204734, Website: [www.ugc.ac.in](http://www.ugc.ac.in), email: [ugcsero@gmail.com](mailto:ugcsero@gmail.com)

No.F MRP-7059/16 (SERO/UGC)

Link No:7059.

January,2018

The Accounts Officer  
UGC-SERO, Hyderabad

Comcode: APSK015  
UniqueID:APAN00007747

25 JAN 2018

Sub: Release of Grants-in-aid to Minor Research Projects for the year 2017-2018 .  
Sir / Madam,

The has reference to the Minor Research Project proposal submitted by Smt. T. SAILAJA RANI Department of CHEMISTRY of "GOVT. COLLEGE (MEN)", ANANTAPUR entitled "SYNTHESIS CHARACTERIZATION AND BIOLOGICAL STUDIES OF ORGANOPHOSPHOROUS AND NITROGEN HETEROCYCLES". The subject expert, who evaluated the proposal, has recommended for financial assistance as detailed below.

Sl. No	Item	Amount Allocated (Rs.)	Amount Sanctioned as first installment (Rs.)
1.	Books & Journals	10000.	10000.
2.	Equipment	80000.	80000.
	Total	90000.	90000.
		0 0	0 0
3.	Field work & Travel	40000.	20000.
4.	Chemical & Glass Ware	30000.	15000.
5.	Contingency (incl. Special Needs)	0 0	0 0
6.	Hiring Services	70000.	35000.
	Total	160000.	125000.
	Grand Total		

1. I am further to convey the sanction of the University Grants Commission to the payment of Rs.125000. to the principal, GOVT. COLLEGE (MEN), ANANTAPUR as first installment (100% Non-Recurring and 50% Recurring grants) towards the above project.

Amount Sanctioned	Head of Accounts	Category
Rs. 90000.	35-CAP-MRP(50)-3(A)2202.03.102.02.01	GEN
Rs. 35000.	31-GIA-MRP(50)-3(A)2202.03.102.02.01	GEN

2. The above approval is subject to the general conditions of grants prescribed by the UGC for this scheme.  
3. The sanctioned amount is debit to the Head of Accounts 35-CAP-MRP(50)-3(A)2202.03.102.02.01 (General), 31-GIA-MRP(50)-3(A)2202.03.102.02.01 (General) and is valid for payment during the financial year 2017-18 only and the amount of the Grant shall be drawn by the Accounts Officer (Drawing and Disbursing Officer) UGC-SERO, Hyd. on the Grants-In Aid Bill and shall be disbursed to and credited to "The Principal, GOVT. COLLEGE (MEN), ANANTAPUR by Electronic Mode through PFMS Portal at the following details: (a) Name & Address of Account Holder: The Principal, GOVT. COLLEGE (MEN), ANANTAPUR (b) Name & Address of Bank Branch:

(c) Account No: 038510011007184 (d) IFSC Code: ANDB0000385.

4. In case the Principal Investigator is having ongoing Major/Minor Research Project OR has been transferred/left/retired from the college, the released amount of Rs.125000.- may be returned to UGC-SERO, Hyderabad immediately, failing which action will be initiated against the College for not adhering with the norms of UGC for the scheme.

The grantee institution shall ensure the utilization of grants -in-aid for which it is being sanctioned/paid. In case of non-utilization /part utilization, interest @ 10% per annum as amended from time to time on utilized amount from the date of drawl to the date of refund as per provision contained in General Financial Rules of Govt. of India will be charged.

25/1/2018



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Phones: 040 - 23204735, 23200208 FAX: 040 - 23204734, Website: www.ugc.ac.in, ugcsero@gmail.com

A/c Dy No: 1408  
Date: 28.03.19

No: F. MRP-7059/16 (MRP/UGC-SERO)

March, 2019

The Accounts Officer  
South Eastern Regional Office  
University Grants Commission  
Hyderabad - 500 001

LINKNO:7059. DEPT:CHEMISTRY  
COMCODE: APSK015

28 MAR 2019

Sub Release of Grants-in-aid to The Principal GOVT. COLLEGE (MEN) ANANTAPUR515001. Under the Scheme "Minor Research Projects" - Reg.

Sir/Madam,

On the basis of the accounts received for the first installment grant, I am to convey the sanction of the Commission for the payment of Rs.28000. to The Principal, GOVT. COLLEGE (MEN) ANANTAPUR 515001. as second installment towards the Minor Research Project entitled SYNTHESIS CHARACTERIZATION AND BIOLOGICAL STUDIES OF ORGANOPHOSPHOROUS AND NITROGEN HETEROCYCLES awarded to Smt. T. SAILAJA RANI Department-of-CHEMISTRY as per the details given below:-

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Hiring Services	0 0	0 0	0 0	0 0
Contingency	30000.	15000.	12000.	27000.
Chemicals	40000.	20000.	16000.	36000.
Travel/Field Work	0 0	0 0	0 0	0 0
<b>Total</b>	<b>70000.</b>	<b>35000.</b>	<b>28000.</b>	<b>63000.</b>
Equipment	80000.	80000.	0 0	80000.
Books	10000.	10000.	0 0	10000.
<b>Total</b>	<b>90000.</b>	<b>90000.</b>	<b>0 0</b>	<b>90000.</b>
<b>Grand Total</b>	<b>160000.</b>	<b>125000.</b>	<b>28000. ✓</b>	<b>153000.</b>

(Non) (Auto)  
37  
4141  
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**Remarks:**

The grant is debitible to the following head of account.

Amount Sanctioned	Head Of Account	Category
Rs.28000.	GEN-3(A)-2202.03.102.02.02.31 - 19(XXV)	GEN

The sanctioned amount is debitible to the Major Head of Account: GEN-3(A)-2202.03.102.02.02.31 - 19(XXV) - Committed liabilities: GIA(31) - Minor Research Project (General) and is valid for payment during the financial year 2018-19 Only and subject to the condition indicated below:

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(d)Name & Address of Account Holder: The Principal, GOVT. COLLEGE (MEN), ANANTAPUR(e) Name & Address of Bank Branch:

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- The institution may follow the General Financial Rules, 2017 and take urgent necessary action to amend their manuals of financial procedures to bring them in conformity with GFR, 2017 and these don't have their own approved manuals on financial procedures may adopt the provision of GFR 2017 and instructions / Guidelines thereunder from time to time.
- The Utilization Certificate to the effect that the grant has been utilized for the propose for which it has been sanctioned shall be furnished to UGC as early as possible after the close of current financial year.
- The assets acquired wholly or substantially out of UGC's Grant shall NOT be disposed or encumbered or utilized for the proposes other than those for which the grants was given without proper sanction of the UGC and should at any time the Institution ceased to function, such assets shall revert to the University Grants Commission.
- A Register of Assets acquired wholly or substantially out of the Grant shall be maintained by the Institution in the prescribed proforma.

## G.Kusuma Priya



### Medium-Term Projects under INUP-i2i Program



#### List of selected participants for Medium-Term Project under INUP-i2i 2022 program

Sl. No.	Name of the participants	Title of the proposal	Institute/Organisation
1.	Mandira Biswas	BaTiO <sub>3</sub> -Ga <sub>2</sub> O <sub>3</sub> thin films as a gas-sensitive material for acetone detection	NIT Meghalaya
2.	Dariskhem Pyngrope	Heterojunction super schottky PdCoO <sub>2</sub> /b-Ga <sub>2</sub> O <sub>3</sub> for UV detection	NIT Meghalaya
3.	Hiramoni Khatun	Development of piezoelectric nanogenerator to harvest energy from cardiac motion to power a pacemaker	Gauhati University
4.	Venkaiah Malapati	Silicon schottky photodetectors for telecom wavelength regime	VFSTR, Guntur, AP
5.	Kamalesh Tripathy	High-performance PBASE functionalized GFET fabrication for biosensing applications	IISER Bhopal, MP
6.	Tamanna Bhuyan	Targeting multicellular tumor spheroids with biogenic microbots	USTM, Meghalaya
7.	G. Kusuma Priya	Rare earth doped BaTiO <sub>3</sub> bulk & thin film for electrical, opto- electronics, energy storage applications	Government College, Anantapur, AP
8.	Samuel Talari	Development and fabrication of luminescent nano electronic device (White LED) from lanthanide and Ce co-doped nanostructured thin films	GMR Institute of Technology, Andhra Pradesh
9.	Sujata Deb	Fabrication and Characterization of nano-electronic devices (FETs/Diodes) using zinc chalcogenides/reduced graphene oxide (rGO) nanocomposites	Royal Global University, Assam
10.	Rakesh Kumar Prasad	Plasmonically enhanced ultrasensitive fast photodetector based on mono-layered two-dimensional materials	BITS, Mesra, Ranchi, Jharkhand
11.	Veera Jogi Satya Nagendra Prasad	Biocompatible silver-ZrO <sub>2</sub> -TiO <sub>2</sub> nanocomposite coatings by using RF Magnetron Sputtering	Yogi Vemana University, Kadapa, AP



#### List of selected participants whose project proposals are approved under INUP-i2i 2021-22 program

S. No.	Name of the participants	Title of the proposal	Institute/Organisation
1.	Mandira Biswas	BaTiO <sub>3</sub> -Ga <sub>2</sub> O <sub>3</sub> thin films as a gas-sensitive material for acetone detection	NIT Meghalaya
2.	Dariskhem Pyngrope	Heterojunction super schottky PdCoO <sub>2</sub> /b-Ga <sub>2</sub> O <sub>3</sub> for UV detection	NIT Meghalaya
3.	Hiramoni Khatun	Development of piezoelectric nanogenerator to harvest energy from cardiac motion to power a pacemaker	Gauhati University
4.	Venkaiah Malapati	Silicon schottky photodetectors for telecom wavelength regime	VFSTR, Guntur, AP
5.	Manisha Kumari	Transparent electronic skin of ZnO nanowire	BITS, Meshra, Patna
6.	Pankaj Kumar Kushwaha	Transition metal-doped SnO <sub>2</sub> for Perovskite Solar Cells	Mahatma Gandhi Central University, Bihar
7.	Kamalesh Tripathy	High-performance PBASE functionalized GFET fabrication for biosensing applications	IISER Bhopal
8.	Apurba Das	Electrical properties of biomaterials	DK College
9.	Tamanna Bhuyan	Targeting multicellular tumor spheroids with biogenic microbots	USTM, Meghalaya
10.	Ravi Chandra Gurralla	Green synthesis of Ag-Au bimetallic nanomaterials using andrographis paniculata leaf extract: colorimetric sensors applications, antibacterial & anticancer activity	ANDHRA UNIVERSITY, VISAKHAPATNAM.
11.	Abhyavartin Selvam	Noninvasive point-of-care-testing of cervical cancer using microfluidic device	AMITY University, Noida, UP
12.	G. Kusuma Priya	Rare earth doped BaTiO <sub>3</sub> bulk & thin film for electrical, opto- electronics, energy storage applications	Government College, Anantapur
13.	Shivakumar Chedurupalli	Magnet-free circulator based on micro electro mechanical system (MEMS) devices for full-duplex applications	CASEST, University of Hyderabad



PROJECT PROPOSAL UNDER INUP-i2i

PRELIMINARY STAGE

INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI

**Rare Earth doped BaTiO<sub>3</sub> bulk & thin film for Electrical, Opto-electronics, Energy Storage Applications**

**Grande Kusuma Priya<sup>1,2</sup>, R Padma Suvarna<sup>2</sup>**

<sup>1</sup>Department of Physics, Government College(A) Anantapur, Anantapuramu 515002, A.P, India.

<sup>2</sup>Department of Physics, Jawaharlal Nehru Technological University College of Engineering Anantapur, Anantapuramu 515002, A.P, India

**Submitted By:**

**Name:** Ms. G Kusuma Priya

**Designation:** Lecturer

**Department and Institute:** Department of Physics and Government College(A) Anantapur

**Broad subject area of the project:** Rare earth doped of barium titanates, Z -scan technique, Nonlinear properties.

**Type of project:** Short-term (<3 months) (Tick the current one)

**1. Background (< 200 words)**

BaTiO<sub>3</sub>, as a metal oxide has a specific characteristic such as physical hardness, stability and tunable optoelectronic properties makes an ideal choice in electronic as well as photonics applications. The various good characteristics makes it's functional in diverse fields of applications such as energy harvesting, magnetic memories, luminescence, electronic and in photonics. The characteristics of the BaTiO<sub>3</sub> (BT) might also be modified by different dopants or hybridization with other materials. Especially, by doping rare earth elements (RE) there is significance changing of their dielectric and optoelectronic characteristics. The rare-earth doped BT materials can be investigated in bulk and the thin films forms. The characterises of these samples' feasibility in electronic and photonic applications could be investigated. Since these materials has immense scope in energy harvesting applications. The challenges in this

Platinum coated Silicon substrates	
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#### 10. List of facilities required

- Chemical working area
- Pulse laser deposition technique
- Rf magnetic sputtering
- Structural properties: XRD, FESEM, TEM, UV-visible and FTIR analysis, Raman spectra
- Impedance analysis
- Microwave dielectric properties using vector network analyzer and SPDR technique.
- Dc-probe station
- Keithley Parameter Analyzer.

#### 11. Estimated budget

Reagent	Purity	Quantity	No. of items	Rate per quantity (Rs.)	Total rate (Rs.)
BaCO <sub>3</sub>	99.999% trace metals basis	100 gm	5	34,185	1,70,925
TiO <sub>2</sub>	>95	1000gm	1	90,000	90,000
Sm <sub>2</sub> O <sub>3</sub>	99+	10 gm	2	16,160	32,320
Ln <sub>2</sub> O <sub>3</sub>	99.99	100 gm	1	19,470	19,470
Gd <sub>2</sub> O <sub>3</sub>	99.99	5 gm	2	14,408	28,816
Eu <sub>2</sub> O <sub>3</sub>	99.999	5gm	1	34,380	34,380
Quartz Substrates	High purity	10cm X 10cm	3	€35.50 (29,150.03)	87,450
Platinum Coated Silicon				As per stock. Approx.	50,000
					5,18,000



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Date: 14.10.2022

**ATTENDANCE-CUM-RELIEVING CERTIFICATE**

This is to certify that **Ms. G Kusuma Priya** Lecturer in Physics Government College(A) Anantapur has executed the short-term project on "**Rare Earth doped BaTiO<sub>3</sub> bulk & thin film for Electrical, Optoelectronics, Energy Storage Applications**" sponsored by Ministry of Electronics and Information Technology (**Meity**), Govt. of India under INUP-i2i program, organized by Centre for Nanotechnology, Indian Institute of Technology Guwahati during the period from 15-07-2022 to 15-10-2022 and she is relieved on the evening of 15-10-2022.

Forwarded by

  
14/10/2022

Dr. Akshai Kumar Alape Seetharam  
Associate Professor & Head  
Center for Nanotechnology,  
IIT Guwahati.