

3.1.1 Grants received from Government and non-government agencies for research projects/ endowments

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SERB-Notification

From: SERB_Administrator@serbonline.in (serb_administrator@serbonline.in)

To: serbinfo1@gmail.com

Date: Thursday, November 9, 2023 at 10:24 AM GMT+5:30



Science and Engineering Research Board
(Statutory Body Established Through an Act of Parliament : SERB Act 2008)
Department of Science and Technology, Government of India

SCIENCE & ENGINEERING RESEARCH BOARD (SERB)
(Statutory Body Established Through an Act of Parliament : SERB Act 2008)

Science and Engineering Research Board
3rd & 4th Floor, Block II
Technology Bhavan, New Mehrauli Road
New Delhi - 110016

Approval Letter

File Number: CRG/2023/002898

Dated: 09-Nov-2023

Subject: Project titled "High-gain and wideband electronic beam-switching antennas featuring continuous beam-scanning over wide scan angles for millimeter-wave 5G applications".

Dear Dr. Koushik Dutta,

The project cited above has been recommended by the related **Core Research Grant** to the Science and Engineering Research Board (SERB) for funding. The following are the items recommended for a period of 3 years. The final budget to be sanctioned would be based on quotations received, existing norms, funds availability etc.

The committee recommended the following budget

Manpower : Rs. 1478280

-> Junior Research Fellow - 1

Equipment Details : Rs. 2440000

-> Workstation Computer - 1

-> Desktop PC - 1

-> Ansys Electronics - 1

Consumables : Rs. 50000

Travel Cost : As per SERB norms/As proposed

Contingencies :As per SERB norms/As proposed

Overhead : As per norms

You need to accept the above budgetary allocation before proceeding further. To accept the budgetary recommendations , you may follow the following steps :

1. Go to www.serbonline.in through your credentials
2. Go to Menu --> Proposal submission --> View submitted proposals
3. Click on the link under Status column "Proposal Approved, Acknowledgment pending from PI"

You are requested to upload the following documents of the approved budget strictly within one week from the date of this letter.

1. Upload the lowest quotation for equipment/s (including freight, insurance, customs charges etc., if any).
2. Salary structure for the project staff (including HRA, Medical Benefits, if applicable etc.).
3. A certificate stating that any visit abroad for a period more than eight weeks would be undertaken after due permission from SERB, may also be submitted.
4. RTGS details of the implementing institute to facilitate transfer of the fund as per the template.
5. Any other documents (as detailed below specific the programme concerned).

SERB has adopted the Scientific Social Responsibility (SSR) Policy which mandates SERB Grantees to undertake some SSR activities during their project period. You are requested to read the SSR guidelines available under SSR menu and choose the activities according to your preference. Depending on the activity chosen, additional budget would be provided under separate head to carry out the chosen activities. Please note that choosing the SSR activities is mandatory for issue of financial sanction subject to submission and acceptance of other necessary documents

Kindly upload the documents related viz., animal ethical clearance certificate, institutional bio safety clearance certificate, etc., matching with exact approved title of project submitted to SERB.

If the project does not require (viz., animal ethical clearance certificate, institutional bio safety clearance certificate, etc.,) please confirm with a self-certification saying that it does not involve any animal/human studies or genetic modification in any organisms or bio safety issues.

(Kindly note that during the issue of sanction order or during the implementation of this project, if SERB come across/found that the project work involves/requires animal/human studies or genetic modification in any organisms or bio safety issues, RCGM approval/ approval from Biodiversity Management Committee Environmental clearance, the project may be terminated without any notice.)

Please note that release of grant is subject to availability of funds under the scheme. Kindly quote the reference number in all future correspondence. The project's reference no. **CRG/2023/002898** may also be mentioned in all research communications arising from the above project.

Yours sincerely,

(Dr. Anima Johari)

Scientist D

Email: anima.johari@serb.gov.in

Dr. Koushik Dutta

Electronics And Communication Engineering

Netaji Subhash Engineering College , Technocity, Panchpota, Garia Kolkata, Kolkata, West Bengal-700152

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**High-gain and wideband electronic beam-switching antennas
featuring continuous beam-scanning over wide scan angles for
millimeter-wave 5G applications**

File Number : CRG/2023/002898

Submitted By : Dr. Koushik Dutta

[SERB Qualified Unique Identification Document: SQUID-1976-KD-0389]

Submission Date : 15-Mar-2023

PROPOSAL DETAILS

(CRG/2023/002898)

Dr. Koushik Dutta

koushikdutt@yahoo.co.in

Associate Professor & Head (Electronics and Communication Engineering)

Netaji Subhash Engineering College

Technocity, panchpota, garia kolkata, Kolkata, West bengal-700152

Technical Details :

Scheme : Core Research Grant
Research Area : Communication System, Signal Processing (Engineering Sciences)
Duration : 36 Months **Contact No :** +919433229050
Date of Birth : 17-Sep-1976
Nationality : INDIAN **Total Cost (INR) :** 46,51,108
Is PI from National Laboratory/Research Institution ? No

Project Summary :

Millimeter-wave (mm-wave) frequency bands have been studied in recent years for 5G mobile communications, primarily to achieve higher data transfer rates. High-gain antenna systems are necessary for these applications to compensate for mm-wave path losses. However, a high-gain antenna with a narrow beamwidth can cover only a small area and also suffers from transmission blockages between mobile devices in line-of-sight (LOS), even when the obstruction is small. Therefore, an electronic beam-scanning antenna with a higher gain is necessary to overcome these challenges. A lens antenna is suitable for such mm-wave 5G applications because of its wide bandwidth and high gain features. A lens antenna that can switch beams over wide angles has been demonstrated recently. Despite their complexity and bulkiness, these designs suffer from high scan losses, limiting their practical applications. The gradient-index (GRIN) lens, which has a radially varying refractive index, is relatively compact and lightweight and can scan beams over a wide angle. However, a lens antenna has a large overall size, especially when its diameter D and/or focal length F are also large. It is possible to design an antenna with a smaller F, but the lens would need to be thick and bulky. Electronic beam-switching antennas must also scan beams continuously to cover a wide area. It is exceptionally challenging to realize such continuous beam-scanning over a wide bandwidth, particularly for mm-wave frequency bands. This work aims to realize a compact and wideband design of a switched-beam GRIN lens antenna for mm-wave 5G applications. An array of waveguide and horn feeds will be placed in the focal plane of the lens and feed elements will be excited one at a time and switched to achieve 2D beam scanning over wide scan angles.

Objectives :

- Realize a high-gain electronic beam-switching antenna with continuous beam-scanning over wide scan angles and bandwidth for Millimeter-Wave 5G applications (24-40 GHz)
- high gain (above 20dBi) maintained over a wide impedance bandwidth (more than 40%)
- continuous 2D beam scanning over scan angles greater than $\pm 45^\circ$ with a maximum gain loss of 3dB (ensures continuous coverage)
- maintained low sidelobe level (SLL less than -8dB) over scan-angles
- a compact, lightweight, and low-cost design with a simple feed network for electronic beam switching
- options for dual-polarized excitation

Keywords :

Electronic beam-switching, electronic scan-beam antenna, continuous beam-scanning, millimeter wave 5G antennas, high-gain, wide bandwidth

Expected Output and Outcome of the proposal :

- Manpower trained: 1 PhD (research scholar), 1 MTech student, and 1 BTech student
- Publications in reputed scientific journals: 2-3
- Publications in Conferences: 2-4
- Filing the patent: 1-2
- Developing a prototype and collaborating closely with the related industries in order to commercialize it for the future 5G applications

Any other relevant information:

We collaborate closely with various research groups and industries in India, USA, UK, France, Germany, China, and Brazil focusing on millimeter wave antennas for 5G and 6G communication systems. The primary objective is to make the antenna systems smart with electronic reconfigurability. Fabrication facilities and integration with active devices are the biggest changes needed to meet these objectives. There are a number of research groups in India that are striving to overcome these challenges, and some of them are interested collaborate with use in this area.

Suitability of the proposed work in major national initiatives of the Government:

Make in India, Smart Cities, Innovate India

Theme of Proposed Work:

Manufacturing, Others

Collaboration Details for last 5 Years :

S.No.	Name	Type of Collaboration
1	Bo Liu Professor School of Engineering, University of Glasgow School of Engineering, University of Glasgow, Glasgow, G12 8QQ, UK United Kingdom [01-Jan-2021 to 02-Jan-2023]	We are working together to improve the design and performance of antennas using artificial intelligence and machine learning. Collaborative research results are submitted for publication to IEEE AP Transactions. Our collaboration will continue in the future as well.
2	Raj Mitra Professor Dept. of Electrical and Computer Engineering, University of Central Florida Orlando, Florida, USA USA [01-Mar-2020 to 13-Mar-2023]	Since 2020, we have worked collaboratively on some projects associated with antennas for mobile applications. Under his supervision, I worked as a visiting scientist at University of Central Florida (UCF), USA, from 1st April to 31st October 2021. The collaboration continues to this day and we are jointly working with his research group. UCF still provides facilities that can be accessed from India such as access to a digital library, remote access to a UCF server for simulation studies, and all other facilities that are available to UCF. In the past, he has covered all expenses for attending conferences such as APS 2020 (Singapore), MAPCON 2022 (Bangalore), etc., and he intends to continue doing so in the future. In addition, he will support the purchase of equipment for ongoing research and projects.

Planned Collaboration for the proposed work with any foreign scientist/ institution ?

No

S.No.	Name	Type of Collaboration
1	Spandan Manna Research Assistant Institute of High Frequency Technology, RWTH Aachen University RWTH Aachen University Germany	Reconfigurable intelligence surface (RIS) for millimeter wave 5G beam scanning applications. Primarily we are working on implementation of active devices like PIN or varactor diodes for realizing reconfigurability.
2	Priyanka Mandal Senior Researcher Lytid SAS Montrouge, Île-de-France, France France	Research collaboration involving microwaves and millimeter wave technologies. The collaboration will focus on fabrication and measurement facilities at her workplace.
3	Prof. Dr.-Ing. Dirk Heberling Institute Director Institute of High Frequency Technology (IHF), RWTH Aachen University Aachen, North Rhine-Westphalia, Germany Germany	For millimeter wave 5G beam scanning applications, we are interested in reconfigurable intelligence surfaces (RIS). Our primary focus is on the implementation of active devices such as PINs or varactor diodes to achieve reconfigurability. In millimeter wave frequency band, we are mainly investigating the practical utility of varactor diodes attached to low profile reconfigurable structures. We also intend to work on low loss RIS millimeter wave applications for 5G and 6G.

Budget Details

Institution wise Budget Breakup :

Budget Head	Netaji Subhash Engineering College	Total
Research Personnel	14,78,280	14,78,280
Consumables	50,000	50,000
Travel	1,30,000	1,30,000
Equipment	24,40,000	24,40,000
Contingencies	1,30,000	1,30,000
Other cost	0	0
Overhead	4,22,828	4,22,828
Total	46,51,108	46,51,108

Institute Name : Netaji Subhash Engineering College

Year Wise Budget Summary (Amount in INR) :

Budget Head	Year-1	Year-2	Year-3	Total
Research Personnel	4,72,440	4,72,440	5,33,400	14,78,280
Consumables	20,000	20,000	10,000	50,000
Travel	40,000	40,000	50,000	1,30,000
Equipments	24,40,000	0	0	24,40,000
Contingencies	40,000	50,000	40,000	1,30,000
Other cost	0	0	0	0
Overhead	3,50,000	22,828	50,000	4,22,828
Grand Total	33,62,440	6,05,268	6,83,400	46,51,108

Research Personnel Budget Detail (Amount in INR) :

Designation	Year-1	Year-2	Year-3	Total
Junior Research Fellow <i>One person is required with Post Graduate degree in Engineering to conduct the advanced analysis and to perform the experimental works. The position requested is a Junior Research Fellow (JRF).</i>	4,72,440	4,72,440	5,33,400	14,78,280

Consumable Budget Detail (Amount in INR) :

Justification	Year-1	Year-2	Year-3	Total
<i>Contingencies for consumable items like dielectric substrates, small components, SMA connectors, and stationary items will be required to carry out the project work.</i>	20,000	20,000	10,000	50,000

Travel Budget Detail (Amount in INR) :

Justification (Inland Travel)	Year-1	Year-2	Year-3	Total
<i>Several local trips are planned to discuss the problem with the people in this area, visit places with similar setups, and finalize the purchase with the suppliers. It is necessary to make visits to the fabrication and measurement sites with the collaborating organizations. A few outstation trips (1-2/year), required to attend conferences for the dissemination of the results and to attend the review meetings of the project. For attending multiple conferences, the third year budget is higher.</i>	40,000	40,000	50,000	1,30,000

Equipment Budget Detail (Amount in INR) :

Generic Name Model No. , (Make) Justification	Quantity	Spare time	Estimated Cost
Workstation Computer Precision 7865 Tower Workstation (Dell) <i>It is necessary to have a workstation with a high configuration in order to conduct simulation studies. This will be primarily taken care of by the PhD scholar, who may use it as a server to access the resources remotely.</i>	1	20 %	6,50,000
Laptop HP Envy 12th Gen intel Core i9 (HP) <i>A dedicated laptop with high configuration is required for PI to conduct simulation and other jobs related to project.</i>	1	10 %	2,10,000
Desktop PC BitKart assembled PC (BITKART) <i>The desktop PC with high configuration will be used by MTech and BTech students to conduct simulation studies for the project.</i>	1	25 %	1,80,000
Ansys Electronics Ansys HFSS v2023 - 5 users (ANSYS) <i>Ansys Electronics Desktop, a commercial full-wave simulator, will be procured for simulation studies with a research license for five users. As planned, multiple users of this project can use the simulator at the same time.</i>	1	25 %	14,00,000

Contingency Budget Detail (Amount in INR) :

Justification	Year-1	Year-2	Year-3	Total
<i>The amount should be used to purchase computer accessories, printer cartridges, scanners, fabrication charges, books (if necessary), stationary items, and other items relevant to the project.</i>	40,000	50,000	40,000	1,30,000

Overhead Budget Detail (Amount in INR) :

Justification	Year-1	Year-2	Year-3	Total
<i>Institute overhead is calculated as 10% of expenditures.</i>	3,50,000	22,828	50,000	4,22,828

Other Budget Detail (Amount in INR) :

Description/Justification	Year-1	Year-2	Year-3	Total
NIL				
NA	0	0	0	0

BIO-DATA OF KousHIK DUTTA



1. Name and full correspondence address
Name: Koushik Dutta
Correspondence Address: 2A Dharendra Apartment,
Panchasayar Road, Jalpole, Garia
Kolkata 700094, West Bengal
2. Email(s) and contact number(s)
E-mail: koushikdutt@yahoo.co.in
Contact Nos: Mobile: +91-9433229050 / +91-7003251358
3. **Institution:** Netaji Subhash Engineering College
Address: Technocity, Garia, Kolkata 700152, West Bengal
4. **Date of Birth:** 17-09-1976
5. **Gender (M/F/T):** M
6. **Category Gen/SC/ST/OBC:** OBC
7. **Whether differently abled (Yes/No):** No
8. **Academic Qualification (Undergraduate Onwards)**

	Degree	Year	Subject	University/Institution	% of marks
1.	B. Sc. (Honors)	1999	Physics (Hons.)	University of Calcutta	64.25
2.	B. Tech.	2002	Radio Physics and Electronics (Electronics & Communication Engg)	University of Calcutta	70.7
3.	M. Tech.	2004	Radio Physics and Electronics (Electronics & Communication Engg)	University of Calcutta	78.68
4.	Ph.D.	2017	Radio Physics and Electronics	University of Calcutta	NA

9. **Ph.D thesis title, Guide's Name, Institute/Organization/University, Year of Award.**

Thesis Title: New Concept Theory and Advanced Design of Resonance Cavity Antenna

Guide's Name: Prof. Debatosh Guha, Professor, Institute of Radio Physics & Electronics, University of Calcutta

Institute/Organization/University: Institute of Radio Physics & Electronics, University of Calcutta

Year of Award: 2017

10. Work experience (in chronological order).

S. No.	Positions held	Name of the Institute	From	To	Pay Scale
1	Lecturer	JIS College of Engineering	02.01.2004	28.07.2004	Rs. 9100-275-13500 (Gross: Rs 12000)
2	Lecturer	Haldia Institute of Technology	29.07.2004	30.07.2005	Rs. 9100-275-13500 (Gross: Rs 15000)
3	Senior Lecturer	Academy of Technology	31.07.2005	05.03.2009	Rs.10000-325-15000 (Gross: Rs 25000)
4	Assistant Professor	Netaji Subhash Engineering College	06.03.2009	12.05.2022	RS. 15600-39100 AGP Rs. 8000 (Gross: Rs 102000)
5	Visiting Scientist (post-doctoral work)	University of Central Florida	01.04.2021	31.10.2021	Rs. 250000/month (approx.)
6	Associate Professor & Head	Netaji Subhash Engineering College	13.05.2022	Till date	Rs. 37400-67000 AGP Rs. 9000 (Gross: Rs 114000)

11. Professional Recognition/ Award/ Prize/ Certificate, Fellowship received by the applicant.

S. No	Name of Award	Awarding Agency	Year
1	National Scholarship (for result of B. Sc(H))	MHRD, India	1999
2	IEEE Outstanding Volunteer Award	IEEE AP-MTTs Kolkata Chapter	2017
3	Best poster paper award (Rank III)	IEEE InCAP 2019	2019

12. Publications (List of papers published in SCI Journals, in year wise descending order).

S. No.	Author(s)	Title	Name of Journal	Volume	Page	Year
1	K. Dutta, M. O. Akinsolu, M. Mishra, B. Liu, and D. Guha	Application of Artificial Intelligence to Improve Design and Performance of an Open Resonant Cavity Antenna and its Interpretation by Geometrical Optics Based Analysis	IEEE Transactions on Antennas and Propagation	under review	under review	2023
2	M. Mishra, K. Dutta, R. S. Kshetrimayum, Md. S. Sharawi, A. A. Kishk, S. Chaudhuri, and S. Bhunia	Mutual Coupling Reduction Between Two Tightly Packed Half-Split Cylindrical Dielectric Resonator Antennas	IEEE Transactions on Antennas and Propagation	under review	under review	2023

3	A. Chatterjee, K. Dutta , S. Chakravarty, and Raj Mittra	Advanced Design of High-Gain Fabry-Perot Cavity Antenna Offering Wide Common Impedance and Gain Bandwidth	IEEE Antennas and Wireless Propagation Letters (in press)	doi: 10.1109/LAWP.2023.3236771		2023
4	K. Dutta , P. K. Mishra, S. Manna, A. Pal, and D. Guha	Geometrical Optics Based Advanced Design of an Open Cavity Resonant Antenna	IEEE Antennas and Wireless Propagation Letters	vol. 20, no. 3,	pp-322-326	2021
5	K. Dutta	New Concept, Theory, and Advanced Design of Resonant Cavity Antenna	Forum for Electromagnetic Research Methods and Application Technologies	vol. 39	pp. 1-37,	2020.
6	Chandrashekar K. S., K. Dutta , H. Gajera, Poornima S., and Chandramma S.	An Analytical Approach of Designing Compact Microstrip Patch Antenna using Metal-Ring Superstrate for Wideband and Broadside Radiations	AEU - International Journal of Electronics and Communications (Elsevier),	vol.127		2020
7	Chandrashekar K. S., Chandramma S., H. Gajera, and K. Dutta	Design of Microstrip Patch Antenna for Dual-band Operation Using Metal Ring Superstrate,"	Int. Jou. of Recent Tech. & Engg. (Elsevier Scopus), ISSN: 2277-3878	vol. 8	pp-4539-4543	2020.
8	Poornima S., K. Dutta , H. Gajera, Chandrashekar K. S., and Chandramma S.	Flexible and Miniaturized Design of Microstrip Patch Antenna with Improved Cross-Polarized Radiation	AEU – International Journal of Electronics and Communications (Elsevier),	vol. 116		2020.
9	K. Dutta , A. Chatterjee, S. Chakrabarti, and S. Bhunia	Design of Wideband Resonant Cavity Antenna using Particle Swarm Optimization	Int. Jou. of Recent Tech. & Engg. (Elsevier Scopus), ISSN: 2360-2364	vol. 8	pp-2360-2364,	2020
10	K. Dutta , D. Guha, and C. Kumar	Theory of Controlled Aperture Field for Advanced Superstrate Design of a Resonance Cavity Antenna with Improved Radiations Properties	IEEE Transactions on Antennas and Propagation	vol. 65	pp-1399-1403	2017
11	K. Dutta , D. Guha, and C. Kumar	Synthesizing Aperture Fields over Engineered Metal Film Superstrate in a Resonance Cavity Antenna for Modifying its Radiation Properties	IEEE Antennas and Wireless Propagation Letters	Vol. 15	pp-1677-1680	2016.
12	K. Dutta , D. Guha, C. Kumar, and Y. M. M. Antar	New approach in designing resonance cavity high gain antenna using nontransparent conducting sheet as the superstrate	IEEE Transactions on Antennas and Propagation	vol. 63	pp-2807 – 2813,	2015

13. Detail of patents. NIL

S.No	Patent Title	Name of Applicant(s)	Patent No.	Award Date	Agency/Country	Status

14. Books/Reports/Chapters/General articles etc.

S. No	Title	Author's Name	Publisher	Year of Publication
1	A Printed Design of Fabry-Perot Cavity Antenna with High Gain-Bandwidth Product	A. Chatterjee, K. Dutta , S. Chakrabarti, and R. Mitra,	IEEE Wireless, Antenna & Microwave Symposium (WAMS 2023)	2023 (under review)
2	A Wideband Design of Circularly Polarized Antenna with High Gain	A. Chatterjee, K. Dutta , U. Purkayastha, S. Chakrabarti, and Raj Mitra	IEEE Wireless, Antenna & Microwave Symposium (WAMS 2023)	2023 (under review)
3	Compact and Wideband Design of a Switched-Beam Lens Antenna for Millimeter-Wave 5G Applications	A. Indu, K. Dutta , and R. Mitra	IEEE Microwave, Antennas, and Propagation Conference (MAPCON 2022)	2022
4	New Design Approach for Mutual Coupling Reduction in Two-Port Compact Antenna Array for W-LAN MIMO Applications	M. Mishra, S. Chaudhuri, R. Singh Kshetrimayum, K. Dutta	3rd URSI AT-AP-RASC	2022
5	Wideband Design of a Circularly Polarized Fabry-Perot Cavity Antenna	K. Dutta , A Chatterjee, and R. Mitra	2021 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting (AP-S/URSI 2021)	2021
6	Compact and Wideband Design of Substrate Integrated Waveguide Fed Dielectric Resonator Antenna Array	K. Dutta and R. Mitra	2021 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting (AP-S/URSI 2021)	2021
7	Design of Rectangular Microstrip Antenna with Defected Patch Surface for Improved Cross-Polarized Radiations	Poornima S, H. Gajera, Chandrashekar K. S, and K. Dutta	IEEE International Conference for Convergence in Engineering (ICCE 2020)	2020
8	Dual-Band Design of Microstrip Patch Antenna with Copper Ring Superstrate for X-Band	H. Gajera, K. Dutta , Chandrashekar K. S, Poornima S, and Chandramma S	IEEE International Conference for Convergence in Engineering (ICCE 2020)	2020

9	Advanced Design of Transmitting Antenna System for Polarization Modulation	A. Datta Sinha and K. Dutta	IEEE International Conference for Convergence in Engineering (ICCE 2020)	2020
10	Quasi-Optical Design Approach for Resonant Cavity Antenna with Improved Characteristics	K. Dutta , P. Mishra, and D. Guha	IEEE International Conference for Convergence in Engineering (ICCE 2020)	2020
11	An Efficient Design Methodology for Fabry-Perot Cavity Antenna	K. Dutta , A. Chatterjee, and S. Chakrabarti	IEEE Indian Conference on Antennas and Propagation - InCAP 2019	2019
12	A Wideband Design of Microstrip Patch Antenna Loaded with Metal Ring Superstrate	Chandrashekar K. S, H. Gajera, K. Dutta , Poomima S, and Chandramma S	IEEE Indian Conference on Antennas and Propagation - InCAP 2019	2019
13	An Improved Design of Microstrip Patch for the Suppression of Cross-Polarized Radiations	Poomima S, H. Gajera, K. Dutta , Chandrashekar K. S, and Chandramma S	IEEE Indian Conference on Antennas and Propagation - InCAP 2019	2019
14	Fabry-Perot Resonant Cavity Antenna: New Theory and Design Opportunity	K. Dutta and D. Guha	AP-RASC 2019, Delhi	2019
15	Wideband Design of Dielectric Resonator Antenna using Defected Ground Structure	K. Dutta , A. Chatterjee, and D. Guha	IEEE International conference on Applied Electromagnetics, Signal Processing & Communication, AESPC 2018	2018
16	Wideband Design of a Fabry-Perot Cavity Antenna with Improved Features	K. Dutta , P. Mishra, S. Manna, A. Pal, and D. Guha	IEEE Indian Conference on Antennas and Propagation-InCAP 2018	2018
17	A New Fabry-Perot Cavity Antenna with Wideband Characteristics	K. Dutta , A. Chatterjee, S. Chakrabarti, and D. Guha	IEEE Indian Conference on Antennas and Propagation-InCAP 2018	2018
18	New Idea of Antenna Based Modulation Technique Demonstrated as Polarization Shift Keying	K. Dutta , A. Datta Sinha, D. Guha, and C. Kumar	IEEE Applied Electromagnetics Conference-AEMC 2017,	2017
19	New Theory for Fabry-Perot Cavity Antenna	D. Guha, K. Dutta , and C. Kumar	URSI AP-RASC 2016	2016

20	Simple and New Design of Resonance Gain Antenna for Circular Polarization with Improved Characteristics	K. Dutta , D. Guha, and C. Kumar	IEEE AEMC 2015	2015
21	New Superstrate for Resonance Gain Antenna with Reduced Side Lobe Level	K. Dutta , D. Guha, and C. Kumar	IEEE APSYM-2014	2014
22	Resonance Gain Antenna Using Nonengineered Surface: Compact Design with Broadband High Gain Characteristics	K. Dutta and D. Guha	IEEE CALCON-2014	2014
23	New Design of Resonance Gain Antenna using Half-Split Cylindrical DRA	K. Dutta , P. Sadhukhan, S. Paul, D. Guha, and C. Kumar,	IEEE Indian Antenna Week (IAW 2014)	2014
24	Resonance Gain Antenna Using Fully Reflecting Surface (FRS): New Boundary Condition to Realize Wideband High Gain Operation	K. Dutta , D. Guha, C. Kumar, and Y. M. M. Antar	IEEE conference APS-URSI	2014
25	New Circularly Polarized Resonance Cavity Antenna	K. Dutta , D. Guha, and T. Kundu	IEEE Applied Electromagnetics Conference - AEMC 2013	2013
26	A Resonance Cavity Dielectric Resonator Antenna	K. Dutta and D. Guha	Recent Trends in Microwave Techniques and Applications (Microwave – 2012)	2012
27	Some Studies on Precipitable Water Vapour Measurement using Radiosonde and GPS Technique	K. Dutta and R. Chatterjee	National Conference on Pervasive computing and communication, NCPCC 2012	2012
28	New Two-Layer Split Ring Resonator for Metamaterial Design	D. Guha, K. Dutta , J. Y. Siddiqui, and Y. M. M. Antar	International conference of North American Radio Science Meeting URSI-CNC/USNC (URSI-2007)	2007

15. Any other Information (maximum 500 words)

Academic Leadership (Selected): Head of the Department, ECE, NSEC (May 2022-present); Faculty In-Charge, ECE, NSEC (July 2019-May 2022); NBA Coordinator, ECE, NSEC, 2019; Member, NAAC working committee, NSEC, 2017, etc.

Invited Talks and Tutorials: Total No 30; in India and abroad

Journal Reviewer: IEEE Transactions on Antennas & Propagation, IEEE Antennas & Wireless Propagation Letters,

IEEE Access, IET Microwaves, Antennas & Propagation, International Journal of Electronics & Communications (Elsevier), IETE Technical Review, etc.

Technical Session Chair in Conference/Symposia: total 7 (in India and abroad)

Conducted/Organized Events (more than 50): IEEE Conference organizing Chair for 2 conferences

Guiding Ph. D Students:

1. Anirban Chatterjee (Registered under MAKAUT, SRF with National Scholarship from MHRD, Dec 2019-Present)
2. Aparajita Datta Sinha (Registered under MAKAUT, Assistant Professor, NSEC, Kolkata)
3. Joyanta Roy Choudhary (Registered under MAKAUT, Assistant Professor, MSIT, Kolkata)
4. Ankita Indu (Registered, MAKAUT, Assistant Professor, BPPIMT, Kolkata)
5. Riya Dey (Enrollment under process, MAKAUT)

Supervised M. Tech Thesis: Total 9 Students

Supervised B. Tech Projects: Total 48 Undergraduate Projects

Society Membership: Senior Member IEEE, Life Member IE(India), Life Member of InRaSS

Professional Leadership: Chair, IEEE AP/MTTs Kolkata Chapter, 2022-present etc.

Research Collaboration

- University of Central Florida, Orlando, USA.
- University of Glasgow, UK
- Indian Space Research Organization (ISRO), Bangalore, India
- Institute of Radio Physics and Electronics, Calcutta University, Kolkata
- University of Mysore, Karnataka, India.
- CIT, Kokrajhor, Assam
- IIT Guahati, Assam
- SAMEER, Kolkata

Topics for my future research plan:

- 3D printed compact, high-gain, and wideband lens antennas
- MIMO antennas for 5G mobile applications
- AI and Machine Learning for Optimized Antenna Design
- High-gain feed for space applications
- Metasurface antennas for high-gain, RCS reduction, and antenna array applications.
- Dielectric resonator antenna for mm-wave (Ka band) applications
- New antenna-based Polarization Modulation technique for very high-speed communication
- Wideband High-Gain design of Circularly Polarized Resonant Cavity antenna

Referees

Prof. Raj Mitra

Professor, Dept. of Electrical and Computer Engineering
University of Central Florida
Orlando, Florida, USA
Tel: +1 8149338227
E-mail: rajmittr@gmail.com

Prof. Debatosh Guha

Professor, Institute of Radio Physics and Electronics
University of Calcutta
92 APC Road, Kolkata 700009
Tel: +91-9231353055

Prof. P. K. Saha

Ex-Professor, Institute of Radio Physics and Electronics
University of Calcutta
92 APC Road, Kolkata 700009
Tel: +91-9433082828
E-mail: saha.pradipk@gmail.com

Dr. Chandrakanta Kumar

Scientist/Engineer-'SG', U R Rao Satellite Centre
Communication Systems Group (ISRO), APSD
HAL Airport Road, Bangalore, 560017, India.
Tel: +91-94482 06637
E-mail: kumarchk@ursc.gov.in



**NETAJI SUBHASH
ENGINEERING COLLEGE**

Approved by AICTE and Affiliated to Maulana Abul Kalam Azad
University of Technology, West Bengal
(Formerly known as West Bengal University of Technology)

Ref. No.:

Date: 12.03.2023

Certificate from the Investigator

Project Title: High-gain and wideband electronic beam-switching antennas featuring continuous beam-scanning over wide scan angles for millimeter-wave 5G applications

It is certified that,

1. The same project proposal has not been submitted elsewhere for financial support.
2. I undertake that spare time on equipment procured in the project will be made available to other users.
3. I agree to submit a certificate from Institutional Biosafety Committee, if the project involves the utilization of genetically engineered organisms. I also declare that while conducting experiments, the Biosafety Guidelines of Department of Biotechnology, Department of Health Research, GOI would be followed in toto.
4. I agree to submit ethical clearance certificate from the concerned ethical committee, if the project involves field trails/experiments/exchange of specimens, human & animal materials etc.
5. The research work proposed in the scheme/project does not in any way duplicate the work already done or being carried out elsewhere on the subject.
6. I agree to abide by the terms and conditions of SERB grant.

Koushik Dutta

Name and signature of Principal Investigator:

Koushik Dutta

Associate Professor & Head, Department of ECE
Netaji Subhash Engineering College

Date: 12.03.2023

Place: Kolkata, India.



Head of the Department
Electronics & Communication Engineering
Netaji Subhash Engineering College
Techno City, Garia,



**NETAJI SUBHASH
ENGINEERING COLLEGE**

Approved by AICTE and Affiliated to Maulana Abul Kalam Azad
University of Technology, West Bengal
(Formerly known as West Bengal University of Technology)

Ref. No.: NSEC/RND/001-22-23

Date: 13/03/2023

Endorsement from the Head of the Institution of PI
(To be given on University/ Institute/Organization/College Letter head)

This is to certify that:

1. Institute welcomes participation of Name: **Koushik Dutta**, Designation: **Associate Professor and Head of ECE Department**, as the Principal Investigator for the project titled "**High-gain and wideband electronic beam-switching antennas featuring continuous beam-scanning over wide scan angles for millimeter-wave 5G applications**".
2. The PI, **Koushik Dutta** is a permanent or regular employee of this Institute/University/Organization and has **Sixteen** years of regular service left before superannuation.
3. The project starts from the date on which the University/Institute/ Organization/College receives the grant from **SCIENCE & ENGINEERING RESEARCH BOARD (SERB)**, New Delhi.
4. The investigator will be governed by the rules and regulations of University/ Institute/Organization/College and will be under administrative control of the University/ Institute/Organization/College for the duration of the project.
5. The grant-in-aid by the **SCIENCE & ENGINEERING RESEARCH BOARD (SERB)**, New Delhi will be used to meet the expenditure on the project and for the period for which the project has been sanctioned as mentioned in the sanction order.
6. No administrative or other liability will be attached to **SCIENCE & ENGINEERING RESEARCH BOARD (SERB)**, New Delhi at the end of the project.
7. The University/Institute/Organization/College will provide basic infrastructure and other required facilities to the investigator for undertaking the research project.
8. The University/ Institute/Organization/College will take into its books all assets created in the above project and its disposal would be at the discretion of **SCIENCE & ENGINEERING RESEARCH BOARD (SERB)**, New Delhi.
9. The University/ Institute/Organization/College assumes to undertake the financial and other management responsibilities of the project.

Seal of

University/ Institute/Organization/College

Date: 13/03/2023



Signature

Registrar of University/Head of the Institute/
Head of organization / Principal of College

DIRECTOR
Netaji Subhash Engineering College
Techno City, Garia,
Kolkata-700 152
W.B., India



**NETAJI SUBHASH
ENGINEERING COLLEGE**

*Approved by AICTE and Affiliated to Maulana Abul Kalam Azad
University of Technology, West Bengal
(Formerly known as West Bengal University of Technology)*

Undertaking by the Principal Investigator

Ref. No.:

Date: 13.03.2023

To

The Secretary
SERB, New Delhi

Sir

I, Koushik Dutta hereby certify that the research proposal titled "**High-gain and wideband electronic beam-switching antennas featuring continuous beam-scanning over wide scan angles for millimeter-wave 5G applications**" submitted for possible funding by SERB, New Delhi is my original idea and has not been copied/taken verbatim from anyone or from any other sources. I further certify that this proposal has been checked for plagiarism through a plagiarism detection tool i.e., iThenticate approved by the Institute and the contents are original and not copied/taken from any one or many other sources. I am aware of the UGC's Regulations on prevention of Plagiarism i.e. University Grant Commission (Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational Institutions) Regulation, 2018. I also declare that there are no plagiarism charges established or pending against me in the last five years. If the funding agency notices any plagiarism or any other discrepancies in the above proposal of mine, I would abide by whatsoever action taken against me by SERB, as deemed necessary.

Koushik Dutta

Signature of PI with date 13.03.2023

Koushik Dutta

Associate Professor & Head, Department of ECE
Netaji Subhash Engineering College
Technocity, Garia, Kolkata 700152

Head of the Department
Electronics & Communication Engineering
Netaji Subhash Engineering College
Techno City, Garia,
Kolkata - 700 152





Fwd: Regarding implementation of Unnat Bharat Abhiyan (UBA) 2.0.

1 message

Principal of Netaji Subhash Engineering College <principal@nsec.ac.in>

Wed, May 24, 2023 at 11:39 AM

To: dean.academics@nsec.ac.in

Cc: Hrishikesh Mandal <nsecdirectorhm@gmail.com>, Sumit Roy <sumit.green@gmail.com>, universityaffairs@nsec.ac.in

----- Forwarded message -----

From: All India Council for Technical Education(no-reply) <admin@alcte-india.org>

Date: Tue, May 23, 2023 at 5:22 PM

Subject: Regarding implementation of Unnat Bharat Abhiyan (UBA) 2.0.

To: <principal@nsec.ac.in>

Sir/Madam,

Greetings from AICTE!

As you are aware of Unnat Bharat Abhiyan, which is a flagship program of Ministry of Education, Government of India to involve higher education institutes of the country for indigenous development of self-sufficient and sustainable village clusters for Inclusive India.

The program was formally launched by the Ministry of Education (MoE) on 11th November 2014 by His Excellency, the president of India with the IIT Delhi as National coordinating institute. The thematic areas of UBA are sustainable agricultural systems; water resource management; rural energy systems; artisans; industries & livelihoods; and basic amenities (Rural Infrastructure, connectivity, school education etc).

UBA aims to primarily leverage the existing strengths of the Higher educational institutions to enrich Rural India. UBA guidelines allow funding support only for the following:

1. For Field Visits - Rs. 10,000 per village
2. For customisation of an available technology - Rs. 50,000.00
3. For development of a new technology - Rs. 1,00,000.00

For more details, the prospectus of Unnat Bharat Abhiyan (UBA) 2.0 may be perused which is being enclosed with this email /letter.

PFA: https://drive.google.com/file/d/1CRtDcslkiGn9Z04nYmKXt2Le3KHsUZIJ/view?usp=share_link

PFA: https://drive.google.com/file/d/1mOs7NAnG2-4VWhi6JaaMYeGPmR4Nwjiy/view?usp=share_link

Warmest regards

Dr. Mamta Rani Agarwal

Advisor-I

Policy & Academic Planning Bureau

All India Council for Technical Education,

Nelson Mandela Marg, Vasant Kunj,

New Delhi- 110070

Phone no. 011-29581122

Prof. (Dr.) Amal K Ghosh

Principal

Netaji Subhash Engineering College

Garia, Panchpota, Kolkata, West Bengal, India

<http://www.nsec.ac.in>



अखिल भारतीय तकनीकी शिक्षा परिषद्

(भारत सरकार का एक सांविधिक निकाय)

(मानव संसाधन विकास मंत्रालय, भारत सरकार)

नेल्सन मंडेला मार्ग, वसंत कुंज, नई दिल्ली-110070

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

(A Statutory Body of the Govt. of India)

(Ministry of Human Resource Development, Govt. of India)

Nelson Mandela Marg, Vasant Kunj, New Delhi-110070

Phone : 011-26131577 - 78, 80

011-29581000

Website : www.aicte-india.org

F.No.AICTE/P&AP/Misc/2023

Date: 23rd May 2023

To

All Vice Chancellors/Principals/Directors

Technical Universities/AICTE approved Technical Institutions

Subject: Regarding implementation of Unnat Bharat Abhiyan (UBA) 2.0.

Sir/Madam,

Greetings from AICTE!

As you are aware of Unnat Bharat Abhiyan, which is a flagship program of Ministry of Education, Government of India to involve higher education institutes of the country for indigenous development of self-sufficient and sustainable village clusters for Inclusive India.

The program was formally launched by the Ministry of Education (MoE) on 11th November 2014 by His Excellency, the president of India with the IIT Delhi as National coordinating institute. The thematic areas of UBA are sustainable agricultural systems; water resource management; rural energy systems; artisans; industries & livelihoods; and basic amenities (Rural Infrastructure, connectivity, school education etc).

UBA aims to primarily leverage the existing strengths of the Higher educational institutions to enrich Rural India. UBA guidelines allow funding support only for the following:

1. For Field Visits - Rs. 10,000 per village
2. For customisation of an available technology - Rs. 50,000.00
3. For development of a new technology - Rs. 1,00,000.00

For more details, the prospectus of Unnat Bharat Abhiyan (UBA) 2.0 may be perused which is being enclosed with this email /letter.

With regards,

Yours sincerely,

Mamta
23 May, 23

Dr. Mamta Rani Agarwal
Advisor-I (P&AP Bureau)



File No. STDC/MIC/GRANT/215/2021-22/ 45

Dated: 29 .03 . 2022

All India Council for Technical Education
(A Statutory body under Ministry of Education, Govt. of India)
Nelson Mandela Marg, Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

Grant Support to Innovations - Sanction Letter

To

The Drawing and Disbursing Officer,
All India Council for Technical Education,
Nelson Mandela Marg, Vasant Kunj,
New Delhi - 110070

Sub: Sanction of Rs. 200000/- (Rs. Two Lakh only) being the Grant-in-Aid under the scheme of Grant Support to Innovations, MIC for the year 2021-22 payable during the current financial year 2021-22 to Netaji Subhash Engineering College.

Sir,

With reference to the approval of the Council, this is to convey the sanction for payment of Rs. 200000/- (Rs. Two Lakh only) as Grant-in-Aid under the Grant Support to Innovations, MIC Scheme for Innovation titled 'Energy Saver' as per details given below: -

1.	Name and address of the Beneficiary Institution/ Institute / Incubation Unit	Netaji Subhash Engineering College, Netaji Subhash Engineering College, Techno City, Garia, Kolkata, West Bengal, Pin - 700152
2.	Name of the Team Leader:	Damini Ghosh
3.	Duration of the scheme:	1 (one) year upto 31-03-2023
4.	Total Grant-in-aid Sanctioned:	Rs. 200000/-
5.	1 st Phase Amount (50% of Grant-in-Aid) to be released during the year 2021-22:	Rs.100000/-
6.	Sanctioned grant-in-aid is debitable to:	603.2 (a) General (MIC)
7.	The authorized officer in whose favour Cheque/ Demand Draft/ RTGS is to be made	Netaji Subhash Engineering College Incubation Center

1. The amount of the Grant shall be drawn by the Drawing and Disbursing Officer, All India Council for Technical Education on the Grant-in-Aid bill and shall be disbursed to and credited to the account of Director/Principal through RTGS/PFMS.
2. This Grant-in-Aid is being released in conformity with the terms & conditions as well as norms of the scheme as already communicated, and also being communicated in this letter.

The instructions/guidelines to be followed by University/Institution/Incubation Unit**I. Release of funds**

- a. The Director/Principal is hereby requested to verify the correctness of the under mentioned bank account/ RTGS details submitted by them along with the proposal, in which the grant is,being released:

Institute/Incubation PAN No.	Bank Name	Bank Branch Name	Bank Branch Address	Account Holder Name	Account Type	Account Number	IFSC Code
AAAT18588J	Punjab National Bank	N S Engineering College Branch		Netaji Subhash Engineering College Incubation Center	Savings Account	4885000100024426	PUNB0488500

In case of any omission the same should be reported to AICTE immediately.

- b. The sanction is issued in exercise of the powers delegated to the council and other terms & conditions laid down in the guidelines of the scheme.
- c. **50% of the total sanctioned project amount as grant-in-aid is being released to the Institute / Incubation Unit. Next 50% will be released after 06 months or achieving 50% milestone, whichever is earlier, based on the framework developed by MIC. Student Development Cell will process the payment of next instalment on receipt of Satisfactory Report from MIC duly approved by Competent Authority.**
- d. The activities related to the project for which funds have been disbursed shall be closely monitored by MIC.

II. Maintenance of accounts

- a. The Institute shall strictly follow the guidelines issued by this office.
- b. Funds covered by this grant shall be kept separately and would not be mixed up with other funds, so as to know the amount of interest accrued on the grant.
- c. The Institute shall maintain proper accounts of the expenditure out of the grants, which shall be utilized only on the scheme/specified project.
- d. The Council or its nominee shall have the right to check/verify the account to satisfy that the fund has been utilized for the purpose for which it was sanctioned.
- e. **The date of announcement of result by AICTE shall be taken as the commencement of the project. The Team / Start up can submit the details of expenditure with bills and vouchers at the incubation unit (or) institution for reimbursement of any expenses incurred by them towards procurement of equipment, materials, items for the innovation project work during the period between the announcement of result by AICTE and release of grant. In such cases, respective institution needs to verify the expense details and bills and ensure that these expenses were made for development of the innovation project sanctioned by AICTE only.**
- f. The amount of interest accrued on the grant should be treated as part of the grant to be utilized for that particular project. However, the interest amount accrued along with grant disbursed should not exceed the total grant sanctioned for the project. The Institute receiving the grant should reflect the same in the audited statement of accounts/ utilization certificate and may either refund the interest amount to AICTE.
- g. After receipt of the grant from AICTE, the Institute/ Incubation Unit shall send a confirmation to AICTE within one (01) month of receipt of grant that the sanctioned project has been started/is in progress.

III. Instructions for Implementation of project funds

1. Approximately 50-60% of the total fund granted to an innovation team can be used for technology development/process development/innovation refinement and market research. This budget category may include expenses incurred towards above activities, logistics and procurement of raw materials, expenses to carry out market research, mentorship and fees related to incubation services availed through incubation unit (if chargeable).
2. Up to 20% may be utilized towards cost of startup registration as per DPIIT norm and consultation, IP filing, legal and fulfillment of other regulatory compliances towards operationalization the startup activities and launch of product/services.
3. Up to 10% may be utilized towards participation fee and travel to represent or participate in any national level competition / exhibition/ training / workshop related Innovation/Startup/IPR.
4. Up to 10% may be used for miscellaneous activities related to above categories.
5. Advance to student team lead can be given for the expense and settlement for which original receipt of expenses duly signed by student team lead will be submitted to the Institute on monthly basis.
6. A copy of summary of expenses should be provided to the students by Institute on monthly basis.
7. **Guidelines regarding procurement of equipment, material & items for the Innovation Project Work and procedure for taking reimbursement of expenses are incorporated as Annexure -I of this Sanction Letter.**

IV. Refund of grant (by way of a demand draft in favor of Member Secretary, AICTE, New Delhi)

- a. In any case, if the institute is required to refund the grant or interest accrued thereon or balance amount, the amount will be refunded to AICTE. Consent from the concerned team lead with duly signed copy need to be attached.
- b. If project is not started within three (03) months after the issuance of this Sanction Letter, the released amount, along with interest accrued thereon, has to be necessarily returned to AICTE.
- c. It may be ensured that the project is completed within the stipulated time. If the project is not completed in time, no further extension will be granted in any case and institute has to refund the entire amount to AICTE.
- d. As AICTE needs adequate time for depositing the Demand Draft in the bank, the same be immediately dispatched to avoid any lapse of the validity period.

V. Submission of documents by college / institution / Incubation Unit after completion of project

The following mandatory relevant documents are required to be submitted by the college/institution within one month of the completion of the Project: -

- a. Feedback form in the prescribed proforma (finalized / given by MIC).
- b. Original Statement of actual expenditure in the prescribed proforma duly signed by the Head of the institution and countersigned by Registrar/Finance Officer/Govt. Auditor

Note: The institution is not required to submit bills/ vouchers/ invoices etc. for the expenditure incurred out of recurring grants. However, such copies of bills/ vouchers/ invoices shall be digitized by respective institutions receiving grant and uploaded scanned copies of such bills/vouchers/invoices etc. on the portal for availability and view at any point of time.

- c. The **Utilization Certificate (UC)** supported by Audited Statement of Expenditure to the effect that the grant has been utilized for the purpose for which it has been sanctioned shall be furnished to the AICTE immediately after completion of the Project. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council. Audited Statement of Expenditure indicating expenditure incurred in the total duration of the Project in the prescribed format and GFR-19 shall be submitted to the Council.

- d. In case of self-financing/private institutions, Statement of actual Expenditure & Utilization Certificate are required to be audited & signed by a Chartered Accountant (with membership no., full address & stamp). Photocopies of formats are enclosed as Annexures – II & III.
- e. Program Evaluation Committee (PEC) is required to be constituted at Institutional level. The constitution of the PEC shall be as under:
- Incubation unit head/HOD/Principal/Director/Registrar of the Institution (Chairperson)
 - Coordinator of the Project from incubation unit/institute (Member Secretary),
 - Two subject experts/entrepreneurs/startup founders.
- The members of the said PEC shall not be below the rank of Associate Professor. The minutes of the meetings are to be submitted to the Council at end of the Project along with other mandatory documents.
- f. Project completion report indicating the activities undertaken by the Innovation Team, achievements against milestones & targets submitted at the beginning of project.

VI. General instructions

- a. If program is not started in the period of three (03) months of the issuance of this Sanction Letter, the released amount, along with interest accrued thereon, has to be returned back to AICTE. Kindly mention the File No. STDC/MIC/GRANT/215/2020-21/45 dated : 29-03-2022 in your future correspondence.

The grantee Institution/Incubation Unit shall observe all financial norms and guidelines as prescribed by the AICTE/ Government of India from time to time. GOI GFR rules (@<https://doe.gov.in/order-circular/general-financial-rules-2017-0>) should be followed during utilization of grant.

- b. This Sanction Letter may be treated as Offer Letter for all purposes.

Yours Sincerely,


Director (STDC)

- Encl: 1. Guidelines regarding procurement of equipment, material & items for the Innovation Project Work and procedure for taking reimbursement of expenses (Annexure –I)
2. Formats of Statement of Expenditure & Utilisation Certificate (Annexures – II & III)

Copy forwarded for information and necessary action to:

- Netaji Subhash Engineering College, Netaji Subhash Engineering College, Techno City, Garia, Kolkata, West Bengal, Pin - 700152.
Tel : 9830081806, Email : principal@nsec.ac.in, info@nsec.ac.in
- Damini Ghosh, daminighosh2@gmail.com
- MIC
- Guard File

Annexure – I

Guidelines Regarding Procurement of Equipment, Material & Items for the Innovation Project Work and Procedure for Taking Reimbursement of Expenses

- 1) The team/start-up can claim the expenses incurred towards the innovation project for reimbursement. The bills/invoice can be raised either in the name of team lead of innovation (or) startup registered by the team (or) incubation unit(or) institute name. In all such cases, these bills need to be verified by the incubation unit where the innovation is incubated (or) directly by the committee established at institute for reimbursement to the team.
- 2) The team/start-up can directly procure the items or materials or equipment required for the innovation project from the open market or GEM portal. The bills/invoice can be raised either in the name of team lead of innovation (or) start-up registered by the team (or) incubation unit (or) institute name. In such case, these bills to need to be verified by the incubation unit where the innovation is incubated (or) directly by the committee established at institute for reimbursement.
- 3) Both reimbursement and advance mode of fund utilization is permissible. The team/start-up can submit request for advance amount to incubation unit (or) institute for the expenses towards procurement of equipment, materials, items and other major expenses falling under the prescribed budget heads. The incubation unit (or) institute needs to verify the requirement. The team/start-up can avail advance amount up to Rs. 50,000 or 20% of total grant sanctioned for the above expenses. Teams are required to settle the advance amount taken with all bills and vouchers with in a period of two months from the date of advance taken from incubation unit (or) institute. Team can't avail advance for second time without clearing the advance taken previously.
- 4) In case the fund is released to institution and the team/start-up is incubated in the incubation unit which is part of the institute/university and located in the same campus, then team/start-up can request the institute to transfer the grant to the incubation unit for utilisation (or) team/start-up can submit the expense details verified by the incubation unit to the institute for reimbursement whichever is convenient. Both Incubation unit and institution needs to work out a suitable mechanism for smooth and quick process for fund utilization for the innovation development work.
- 5) In case the fund is released to institution and the team/start-up is incubated in the incubation unit which is different from the institution/university and located in different place, then team/start-up can request the institute to transfer the grant to the incubation unit for utilisation (or) team/start-up can submit the expense details verified by the incubation unit to the institute for reimbursement whichever is convenient. Incubation unit and institution both needs to work out a suitable mechanism for smooth and quick process for fund utilization for the innovation development work.
- 6) The Grant-in-Aid fund is channelized through the incubation unit (or) institute exclusively for the mentioned innovation project development and start-up establishment work. The prescribed budget heads in the sanction letter and GIA also covers expenses towards rental charge for incubation space and service fees s for technical and mentoring support and access to lab facilities. The team/start-up can utilise the fund for the above services while receiving incubation support at the incubation unit (or) institute. In this scenario, so far the innovation is developed by the team with no substantial financial resources (or) technical contribution made by the institute, the Intellectual Property (IPs) associated with the innovation will remain with the team/start-up only. In such case, institute can't claim any ownership on the IP generated by the team/start-up. Similarly, if team has registered the start-up, they can avail the incubation services either on rental mode or equity mode (or) both. In case of equity mode, incubation unit can ask for equity sharing only after having a minimum 3 months' incubation service with the team/start-up on rental mode. The incubation unit can't own more than 9.5% of total equity in the start-up.

Annexure - IIINNOVATION CELLGRANT SUPPORT TO INNOVATIONSSTATEMENT OF EXPENDITURE

Permanent ID of Institute (If Applicable)	
Name and address of the Institute/Incubation Unit	
Name of Head of Institute/Incubation Unit	
Mobile No.	
Landline No.	
Email id :	
Sanction Order No. & Date	
Total Grant Sanctioned	
Total Amount Received (I st & II Instalment)	
Accrued Interest on Grant	
Name of the Team Leader	

EXPENDITURE DETAILS – HEAD WISE		
S. No.	Expenditure Head	Spent Amount (in Rs.)
1.	Technology development/process development/innovation refinement and market research. It includes expenses related to logistics and procurement of raw materials, expenses to carry out market research, mentorship and fees related to incubation services available through incubation units (if chargeable). (50-60% of the total fund sanctioned).	
2.	Startup Registration as per DPIIT norm and Consultation Fee, IP filing, Legal Fee and fulfillment of other regulatory compliances towards operationalization of the startup activities and launch of product/services. (Up to 20% of the total fund sanctioned).	
3.	Participation Fee and Travel to represent or participate in any national level competition / exhibition/ training / workshop related to Innovation/Startup/TPR etc. (Up to 10% of the total fund sanctioned).	
4.	Miscellaneous activities related to above categories (Up to 10% of the total fund sanctioned).	
TOTAL EXPENDITURE :		

(1) _____
 Signature of Team Leader
 Name :
 Designation :
 Mobile No.

(2) _____
 Signature of Head of Institution/Incubation Unit
 Name :
 Designation :
 Mobile No.

(3) _____
 Signature (with Seal of the Finance Officer/
 Auditor/Accounts Officer)

(4) _____
 Signature of Chartered Accountant:

(If it is Govt./Govt. Aided Institute)
 Rubber stamp:
 Full Address of CA :
 Date:

Name of Chartered Accountant:
 Membership No:

Annexure – IIIINNOVATION CELLGRANT SUPPORT TO INNOVATIONSUTILIZATION CERTIFICATE

Permanent ID of Institute (if Applicable) :	
Name of Institute/Incubation Unit:	
Name of the Scheme under which Grant sanctioned	Grant Support to Innovations
Grant Amount Sanctioned:	
Advance Amount Received (1 st Instalment):	

<u>AICTE Sanction Order No. & Date under which Grant was sanctioned</u>	<u>Amount Received (1st & 2nd Instalment): (Rs.)</u>	<u>CERTIFICATE</u>
		<p>Certified that out of the Grant of Rs. _____ (in words) disbursed by the AICTE during the Financial Year _____ as per letter mentioned in the margin, along with interest of Rs. _____ accrued on grant, a sum of Rs. _____ has been utilized for the purpose for which it was sanctioned.</p> <p>The balance of unutilized amount of Rs. _____ to be refunded to AICTE, along with accrued interest of Rs. _____ on grant.</p>

Certified that I have satisfied myself that the conditions on which the Grant was sanctioned have been duly fulfilled and that I have exercised the following checks to see that the money was actually utilized for the purpose for which it was sanctioned.

Kinds of checks exercised:

1. Receipt & Expenditure Details & Bills

[Signature of Chartered Accountant]

Name of CA : _____

Membership No. : _____

Full Address : _____

[with seal]

(mandatory for self financing institutes)

[Signature of Head of the Institute/Incubation Unit]

Name : _____

Designation : _____

Full Address : _____

[with seal]

[Signature of the Finance Officer]

Name : _____

Designation : _____

Full Address : _____

[with seal]

(Govt./Govt.Aided/University & whatever applicable)

Place : _____

Date : _____



File No. MIC/GRANT/3634/2022-23/30

Dated: 06.06.2023

All India Council for Technical Education
(A Statutory body under Ministry of Education, Govt. of India)
Nelson Mandela Marg, Vasant Kunj, New Delhi-110070 Website: www.aicte-india.org

Grant Support to Innovations - Sanction Letter

To

The Drawing and Disbursing Officer,
All India Council for Technical
Education, Nelson Mandela Marg,
Vasant Kunj,
New Delhi - 110070

Sub: Release of Rs. 100000/- (Rs. One Lakh only) as a balance of GIA (2nd phase) to Netaji Subhash Engineering College.

Sir,

With reference to the approval of the competent authority, this is to convey the release for payment of **Rs. 100000/- (Rs. One Lakh only) to Netaji Subhash Engineering College being the balance GIA (2nd phase) of Total Grant Rs. 200000/- (Rs. Two Lakh only) for the scheme of Grant Support to Innovations, MIC sanctioned during the year 2021-22 now payable during the current financial year 2023-24 for Innovation titled 'Energy Saver' as per details given below: -**

1.	Name and address of the Beneficiary Institution/ Institute / Incubation Unit	Netaji Subhash Engineering College, Netaji Subhash Engineering College, Techno City, Garia, Kolkata, West Bengal, Pin – 700152
2.	Name of the Team Leader:	Damini Ghosh
3.	Duration of the scheme:	FY 2023-24
4.	Total Grant-in-aid Sanctioned:	Rs. 200000/-
5.	1 st Phase Amount (50% of Grant-in-Aid) released during the year 2021-22:	Rs.100000/-
6.	2 nd Phase Amount (50% of Grant-in-Aid) to be released during the year 2023-24:	Rs.100000/-
7.	Sanctioned grant-in-aid is debitable to:	603.2 (a) General (MIC)
8.	The authorized officer in whose favour Cheque/ Demand Draft/ RTGS is to be made	Netaji Subhash Engineering College Incubation Center

II. The amount of the Grant shall be drawn by the Drawing and Disbursing Officer, All India Council for Technical Education on the Grant-in-Aid bill and shall be disbursed to and credited to the account of Director/Principal through RTGS/PFMS.

III. This Grant-in-Aid is being released in conformity with the terms & conditions as well as norms of the scheme as already communicated through 1st phase grant sanction letter.

The instructions/guidelines to be followed by University/Institution/Incubation Unit

I. Release of funds

- a. The Director/Principal is hereby requested to verify the correctness of the under mentioned bank account/ RTGS details submitted by them along with the proposal, in which the grant is being released:

Institute/Incubation PAN No.	Bank Name	Bank Branch Name	Bank Branch Address	Account Holder Name	Account Type	Account Number	IFSC Code
AAATT8588J	Punjab National Bank	N S Engineering College Branch		Netaji Subhash Engineering College Incubation Center	Savings Account	4885000100024426	PUNB0488500

- b. In case of any omission the same should be reported to AICTE immediately.
- c. The sanction is issued in exercise of the powers delegated to the council and other terms & conditions laid down in the guidelines of the scheme.

II. General instructions

1. If the 2nd phase grant is being not utilized within the period of three (03) months of the issuance of this Sanction Letter/ release of the amount, the released amount, along with interest accrued thereon, has to be returned back to AICTE/MIC.
2. In any case, if the institute is required to return the grant or interest accrued thereon or the balance amount, the amount will be refunded to AICTE/MIC by way of a demand draft in favor of INNOVATION CELL ACCOUNT payable at New Delhi or through NEFT/RTGS at INNOVATION CELL ACCOUNT, Account No:37903899633, IFSC: SBIN0050203, SBI, SHASTRI BHAWAN, RAJENDRA PRASAD ROAD, NEW DELHI 11000.
3. The grantee Institution/Incubation Unit shall observe all financial norms and guidelines as prescribed by the AICTE/ Government of India from time to time. GOI GFR rules (@<https://doe.gov.in/order-circular/general-financial-rules-2017-0>) should be followed during utilization of grant.
4. This Sanction Letter may be treated as Offer Letter for all purposes.

Yours Sincerely,

Assistant Innovation Director (MIC)

Encl: Formats of Statement of Expenditure & Utilization Certificate (Annexures – I & II)

Copy forwarded for information and necessary action to:

1. Netaji Subhash Engineering College, Netaji Subhash Engineering College, Techno City, Garia, Kolkata, West Bengal, Pin - 700152. Tel: 9830081806, Email : principal@nsec.ac.in, info@nsec.ac.in
2. Damini Ghosh, daminighosh2@gmail.com
3. Guard File



Lidiya Priyadarsini K <lidiyapriyadarsinik@gmail.com>

Fwd: Research activity - 2 projects

1 message

Debasis Barman <dev.barman20@gmail.com>

Tue, Feb 11, 2020 at 3:30 PM

To: Lidiya Priyadarsini K <lidiyapriyadarsinik@gmail.com>, Priyadarsini KL <lpmech.nsec@gmail.com>, Sanmitra Dutta <Sanmitradutta@yahoo.co.in>

----- Forwarded message -----

From: Dipankar Ghosh <dghosh@digi2o.com>

Date: Mon, Feb 3, 2020 at 12:01 PM

Subject: Research activity - 2 projects

To: <dev.barman20@gmail.com>

Dear Barman,

I did send you a message on this earlier. I was just wondering if you can engage a student to do the following research on two potential projects. A research scholar or some bright undergrad should do fine.

I estimate that it will take about 8 hours to do the research and make notes and another 8 hours to write a brief report for each. I will pay for the same.

I have given below the scope of the reports along with the problem statements.

The scope also includes providing the sources of the information, any white papers or research papers that may be available on them etc. The richer the information the better it will be. Therefore, the researcher need not restrict to the questions asked here but add any stuff that he/she may think useful. However, please note that this is only for getting enough information to make decisions about costs and timeline for a proposal we are making. So I am not looking for a 50-page report. 2-3 pages will be enough with all necessary info.

Since we may be up against some formidable competition we would like the reports to be sent to me directly and not shared with anyone else.

Problem 1:

See video at: https://youtu.be/_7IR_CLhlek on a loader and the way it works

The requirement is to be able to measure with reasonable amount of accuracy the weight pf dump lifted each time on a real time basis. Key measurement parameters are: the time of lift, weight of dump lifted, total number of times lifted and total weight lifted over a given duration.

Scope of report:

1. Whether there are OEMs globally who have built loaders or similar equipment with in-built real time measurement system?
2. If the answer to 1 above is yes:
 - a. who are these OEMs,
 - b. what is the brand name of any device they may be using
 - c. who are the manufacturers of these device
 - d. On what principles these devices work, where they are fitted/located etc.
 - e. Cost of such devices
3. Are there any manufacturers of such devices that are being used or can be used for retrofitted solutions to similar equipment that do not come with such devices?
4. If the answer to the 3 above is yes:
 - a. who are these manufacturers,
 - b. what is the brand name of any such device they are manufacturing
 - c. On what principles these devices work, where they are fitted/located etc.
 - d. Who have they provided these devices to?
 - e. Cost of such devices
5. If research shows that such a device and solution does not exist then:
 - a. What in the researcher's opinion could be a feasible, viable solution. There could be more than one option – so it will be OK to see all of them.
 - b. On what principles will these solutions work?
 - c. Approximate costs of the components for such a device

Problem 2:

See video at: <https://www.youtube.com/watch?v=mF66j8RBLic>

This is about autonomous drilling whereby the drilling rigs are not required to be manned and are controlled remotely. At the same time the holes are more accurate than drilled by manned machines.

Scope of report:

1. On what principles and technology does this work?
2. What kinds of device(s) are required to make this work? Are they fitted on to the rigs or are outside of the rigs or both?
3. Key consideration is accurate positioning of the rig and its drilling head. How is this achieved considering that GPS can give accuracy in metres whereas the accuracy required here is in a few centimetres?
4. As an intermediate solution (for cost reasons) we may still have a manned machine but the operator can be guided by the system for drilling at the accurate location. This obviously does not require the

system to be completely autonomous. Does such an intermediate solution exist?

5. Who are the companies that are building such solutions?
6. Approximate costs of such solutions

Best regards,

[Dipankar Ghosh](#)

Founder and CEO

DIGI20 INFORMATION SOLUTIONS PRIVATE LIMITED

Incubated at

MaDeII Innovation Foundation,
IIITDM Kancheepuram Campus,
Melakottaiyur Village,
Off Vandalur-Kelambakkam Road,

Chennai 600127.

[+91 875 4595 872](tel:+918754595872)



[PROFIT FROM YOUR CONNECTED MACHINES](#)

—
debasis barman

Professor

Mechanical Engineering Department

Netaji Subhash Engineering College

Kolkata - 700152, India.

Mob : 98300 45715

Resi : [56A Biren Roy Road \(West\), Kolkata - 700008](#). Skype ID: [debasis.barman4](#)

(M): 9007209777

Lidiya Priyadarsini K

Assistant Professor
Department of Mechanical Engineering

INVOICE

DATE: 07/07/2020

TO
DIGI20 INFORMATION SOLUTIONS PVT LTD
FLAT D, SECOND FLOOR, 26 PALAT SANKARAN STREET,
MAHALINGAPURAM
CHENNAI – 600 034.

DESCRIPTION	AMOUNT (Rs.)
Research report – autonomous drilling	2000/-
Research report – measuring devices in loaders	5000/-
TOTAL	7000/-

The payment may please be made to the following bank account.

Bank A/c Details

A/C Name: Lidiya Priyadarsini K
A/C No. : 4885000400001653
Branch: N S ENGG College, Garia
Bank: Punjab National Bank
IFSC: PUNB0488500

Lidiya Priyadarsini K
PAN No: AXEPK5804H

Account Statement For Account:4885000400001653

Branch Details

Branch Name: N S ENGG COLLEGE GARIA
 Bank Address: N S ENGG COLLEGE GARIA
 DISTT-24, PARANGANAS
 City:
 Pin: 700152
 IFSC Code: PUNB0488500
 MICR Code: 700024079

Customer Details

Customer Name: LIDIYA PRIYADARSINI K
 Joint Account Holder
 1:
 Joint Account Holder
 2:
 Joint Account Holder
 3:
 Customer Address: NSEC TECHNO CITY PANCHPOTA
 GARIA SOUTH 24 PGNS
 City: KOLKATA
 Pin: 700152
 Nominee:
 CKYC Number: NOT AVAILABLE

Statement Period : 16/07/2020 to 16/07/2020

Transaction Date	Cheque Number	Withdrawal	Deposit	Balance	Narration
16/07/2020					
16/07/2020					
16/07/2020			7,000.00		NEFT_IN:SBIN120198941031/ DIGI20 INFORMATION SOLUTION P L

Unless constituent notifies the bank immediately of any discrepancy found by him in his statement of Account, it will be taken that he has found the account correct.

*COMPUTER GENERATED ENTERIES SHOWN IN THE STATEMENT OF ACCOUNT DO NOT REQUIRE ANY AUTHENTICATION / INITIAL FROM THE BANK OFFICIAL.PLEASE DO NOT ACCEPT ANY MANUAL ENTRY IN YOUR COMPUTER GENERATED STATEMENT OF ACCOUNT

* PLEASE ENSURE THAT ALL THE CHEQUE LEAVES IN YOUR CUSTODY ARE DULY BRANDED WITH YOUR 16 DIGITS ACCOUNT NUMBER

* CUSTOMERS ARE REQUESTED IN THEIR OWN INTEREST NOT TO ISSUE CHEQUES WITHOUT ADEQUATE CLEAR FUNDS /ARRANGEMENTS. SUCH CHEQUES CAN BE RETURNED WITHOUT MAKING ANY FURTHER REFERENCE TO THEM.

* PLEASE MAINTAIN MINIMUM AVERAGE BALANCE TO AVOID LEVY OF CHARGES.

*Pls note Penal interest may be charged in loan accounts due to financial reasons such as over drawings, non receipt of install on the rates prescribed by bank from time to time and for non financial reasons like non submission of , QMS forms, non adherence to terms and conditions etc.

Abbreviations are as under:

BR: Branch Name , Csh: Cash , Clg: Clearing , ISO: Inter Sol(##)

QAB:Quarterly Average Balances , LF Chg: Ledger Folio Charges , Intt: Interest , Chrg: Charges

Ret:Returning , Chq: Cheque , SI: Standing Instruction , Stk Stmt: Stock Statement , Trf: Transfer , POSP:POINT OF SALE



Ref. No.: T-6/220/19
Date: 16.05.2019
১৭

Hriya Banerjee
M.Phil. Student,
Dept. of Comparative Literature,
Jadavpur University,
Kolkata-700032

Dear Madam,

Please note that your prayer for Travel Grant for paper presentation in 'ICLA - 2019' held at University of Macau, China during 29/07/19 - 02/08/19 has been considered by the RUSA Committee at its meeting dated 23.04.2019. The Committee has sanctioned **Rs. 80,000/- (Eighty Thousand only)** for this purpose from the **RUSA 2.0 Support to Students Fund**. The amount will be reimbursed after participation of the seminar.

You are requested kindly to report to the undersigned positively if your proposed visit has already been cancelled for any reason. You are further requested to submit the accounts of this support within one month after your return.

Thank you.

Yours sincerely,


(Indrajit Banerjee)
Secretary, Faculty of Arts
And
Convener
RUSA 2.0 PMU

N.B. The students and scholars be allowed to avail support maximum consolidated amount of Rs. 2,000/- per day for the purpose of his/her lodging and fooding for out stationed programme and expenditure for Travel will be limited to AC III Tire Train Fare (if Train Communication is available) or Actual Car Fare. However the total claim cannot exceed the amount sanctioned.

All India Council for Technical Education
 A Statutory Body under Ministry of HRD, Govt. of India
 Netaji Mandir Marg, New Delhi-110071. Website: aictte.ac.in

MODROBS - Sanction Letter

The Drawing and Disbursing Officer
 All India Council for Technical Education
 Netaji Mandir Marg,
 New Delhi,
 New Delhi - 110071

Sub: Release of a sum of **Rs. Eleven Lakh Seventy Five Thousand Two Hundred** (being the **Grant-in-Aid** under **Modernization and Removal of Obsolescence Scheme (MODROB)** for the year **2017-18** payable during the current financial year **2018-19**).

Re:

Thanks to convey the sanction of the Council for payment of Rs. 1175200/- (Rupees Eleven Lakh Seventy Five Thousand Two Hundred Only) as 1st installment / final payment out of the total approved grant-in-aid of Rs. 1469000 for completion of MODROB on Modernization of Electrical Machine & Drives Laboratory in **NETAJI SUBHASH ENGINEERING COLLEGE KOLKATA Pin No - 700152 West Bengal**, under the Scheme Modernization and Removal of Obsolescence Scheme (MODROB).

1. The amount of the Grant shall be drawn by the Drawing and Disbursing Officer, All India Council for Technical Education on the Grant-in-Aid bill and shall be disbursed to and credited to the Registrar/Director/Principal of the Institute through RTGS.
2. The Grant-in-Aid is being released in conformity with the terms & conditions as well as norms of the scheme as already communicated, and also being communicated in this letter.
3. The sanctioned amount is debitible to the Major Head 6014(a) Gen. of the Scheme of Modernization and Removal of Obsolescence Scheme (MODROB) and is valid for payment during the financial year 2018-19.

The instructions/guidelines to be followed by University/Institution

I. Release of funds and maintenance of accounts

- a. The Principal of the institute and the Coordinator of the project are requested to verify the correctness of the under mentioned bank account/ RTGS details submitted by them along with the Proposal, in which the grant is being released.

Institute PAN No.	Bank Name	Bank Branch Name	Bank Branch Address	Account Holder Name	Account Type	Account Number	IFSC Code
ADQPJ54 IGL	PUNJAB NATIONAL BANK	NSFC	TECHNOCITY SARIA KOLKATA-152	NETAJI SUBHASH ENGINEERING COLLEGE	Current Account	1431017100 000012	PUNSB 488500

In case of any omission the same should be reported to AICTE immediately.

- b. The Institute shall strictly follow the provisions laid down in the scheme document and sanction order No. ~~1~~ ⁷¹⁸ /MODROB/Policy-1/2017-18 dated _____ issued by this office. All correspondences related to the project must contain this number along with year of sanction of the project, failing which correspondence will not be entertained.
- c. Funds covered by this grant shall be kept separately and would not be mixed up with other funds.
- d. The University/College/Institute shall maintain proper accounts of the expenditure out of the grants, which shall be allowed only on approved forms of expenditure, list enclosed.

- e. Any change in the equipment as recommended/sanctioned shall not be acceptable in any circumstances.
- f. Any expenditure above the sanctioned amount of grant is to be incurred from Institute's own funds.
- g. The Institute/University shall not charge any overheads on this project and will provide all the administrative support for completion of the project.
- h. The accounts of the institute will be open for test check by the Comptroller & Auditor General of India or any other officer designated by them.

ii. Disbursement of funds to institutions

- a. The date of release of the grant by AICTE shall be taken as the date of commencement of the project. The Principal / Director / Registrar shall intima about the receipt of the grant to AICTE. Any expenditure incurred prior to the issuance of the approval letter will not be allowed to be adjusted in the grant and if the Institution / University do not take the project work within one month of the receipt of the grant, the approval shall ipso facto lapse.
- b. After receipt of the grant from AICTE, the Institute shall send a confirmation to AICTE within 2 months of receipt of grant that the sanctioned project has been started/is in progress.
- c. 100% grant of the sanctioned amount will be released to Government/Govt. Aided institutions. Utilization Certificate (UC) and other requisite documents are to be submitted within one month of the completion of the project.
- d. In self-financed/Pvt. Institutions 80% of the sanctioned amount will be released as first instalment followed by 20% as reimbursement after receipt of UC and other requisite documents as specified in terms & Conditions of MODROB Scheme.

iii. Submission of documents by university/institution

- a. The following mandatory relevant documents are required to be submitted by the university/institution within one month of the completion of the program:
 - (i) The **Annual Progress Report (APR)** in the prescribed format along with Statement of Expenditure and Audited Utilization Certificate shall be submitted to AICTE not later than one month after completion.
 - (ii) The **Utilization Certificate (UC)** supported by Audited Statement of Expenditure to the effect that the grant has been utilized for the purpose for which it has been sanctioned shall be furnished to the AICTE immediately after completion of the project. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council. In case of self-financing/private institutions, Statement of actual Expenditure & Utilization Certificate are required to be audited & signed and sealed by a Chartered Accountant possessing the membership number and complete postal address.
 - (iii) **Project Completion Report (PCR)** in the prescribed format along with the copies of invoices/bills for the equipments purchased and copy of stock entry register where entry of the equipments have made duly verified. Audited Statement of Expenditure indicating expenditure incurred in the total duration of the project in the prescribed format and GFR-19 shall be submitted to the Council. Photocopies of formats are enclosed.
- b. A complete Status Report of the project indicating the activities undertaken, number of students benefited, laboratory works photographs of students, together with their views is to be submitted.
- c. The balance amount of the grant will be reimbursed to the university/institution only on submission of the above documents. On receipt of these documents, the total amount of balance of financial assistance, admissible as per the norms, shall be worked out and grant-in-aid shall be released, as second instalment, in favour of the beneficiary institution.
- d. The university/institution is expected to submit the above said mandatory documents viz. Utilization certificate, Expenditure Statement and completion certificate etc. within one month of completion of MODROB project. However, delay of further 2 months may be condoned by AICTE in special circumstances as explained by the Institute. Delay in submission of documents after completion of the MODROB Project shall invite a penalty of 10% of the total sanctioned amount of the MODROB Project, to be deducted from the balance amount of 2nd instalment. The entire amount of grant already released, along with interest accrued thereon shall be refunded to AICTE if mandatory documents are not submitted by the institute beyond one year.
- e. **Program Evaluation Committee (PEC)** is required to be constituted at Institutional level. The constitution of the PEC shall be as under:
 - (i) Principal/Director/Registrar of the Institution (Chairperson)
 - (ii) Coordinator of the project (Member Secretary)
 - (iii) Two HODs and one subject expert (Members)

The members of the said PDC shall not be below the rank of Assistant Professor. The minutes of the meetings are to be submitted to the Council at end of the project along with other mandatory documents.

IV. General Instructions

- a. The amount of interest accrued on the grant should be treated as part of the grant to be utilized for that particular project. However, the interest amount accrued along with grant disbursed should not exceed the total grant sanctioned for the project. The institute receiving the grant should reflect the same in the audited statement of accounts. Utilization certificate and may either refund the interest amount to AICTE or AICTE shall adjust the same in the next installment of grant before its release.
- b. The duration of the project is for two years from the date of release of grant. It may be ensured that the project is completed within the stipulated time. If the project is not completed in time no further extension will be granted in any case and institute has to refund the entire amount to AICTE. The request for reimbursement of 20% of remaining amount in case of private institution shall be made with UC and other related documents in such a way that the entire project is completed in the prescribed period of two years.
- c. If project is not started within six months of the issuance of this Offer Letter, the released amount, along with interest accrued thereon, has to be returned to AICTE, by way of a demand draft in favour of Member Secretary, AICTE, New Delhi.
- d. Any unavoidable circumstantial change in the project with respect to name of Project Coordinator for the MOOROB project would mandatorily require prior approval of the Council. All such requests should be addressed to AICTE, in advance, recording the specific reasons for proposed changes, failing which the offer for the grant already issued would be treated as automatically withdrawn and the financial assistance released in favour of the beneficiary institution shall be refunded immediately to the Council. Kindly mention the File No. ¹⁻¹⁸ RIFDMOOROB/Policy/2017-18 in your future correspondence.
- e. The grantee shall maintain an audited record of assets acquired wholly or substantially out of the Grant-in-Aid and a register of assets shall be maintained by the institute in the prescribed form i.e. GFR-19.
- f. The University / Institute receiving grant under MOOROB is expected to put up a plaque at the main entrance of the Lab/Department, which has been modernized using the grant. All the equipment procured through the project should be super scribed with AICTE project file number.
- g. The assets acquired wholly or substantially out of All India Council for Technical Education's grant shall not be disposed or encumbered or utilized for the purpose other than those for which the Grant was given without proper sanction of the All India Council for Technical Education and should at any time the institution cease to function, such assets shall revert to the All India Council for Technical Education.
- h. GoI GFR rules should be followed during utilization of grant. URL address <http://doe.gov.in/cdops/circular/GFR>.

V. List of Equipments approved :

S.No.	Name of Equipment
1.	Parallel operation of 3-phase Alternator
2.	Parallel operation of Three Phase Transformer
3.	Chopper fed DC motor drive
4.	AC Motor drive
5.	Digital Storage Oscilloscope
6.	Hand Held Power and Harmonic Analyzer
7.	PSIM Software

Yours sincerely


28 MAR 2019

Copy forwarded for information and necessary action to:

1. **Name and Address of the Coordinator**
Dr. PARTHA PAI
NETAJI SUBHASH ENGINEERING COLLEGE
TECHNO CITY, GARIA, KOLKATA-152 KOLKATA
- 700152.
2. **The Registrar / Director / Principal**
Anil Kumar Ghosh
NETAJI SUBHASH ENGINEERING COLLEGE
TECHNO CITY, GARIA, KOLKATA-152 KOLKATA
- 700152
3. **Guard File**

भारत सरकार सेवार्थ
ON INDIA GOVERNMENT SERVICE

25.1



अखिल भारतीय तकनीकी शिक्षा परिषद्
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
भारत सरकार का सांविधिक निकाय
(A Statutory body of the Govt. of India)
नेल्सन मंडेला मार्ग, वसंत कुंज, नई दिल्ली-110070
Nelson Mandela Marg, Vasant Kunj, New Delhi-110070
Phone : 011-26131675-78, 80 Website : www.aicte-india.org

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
Nelson Mandela Marg, Vasant Kunj, New Delhi-110057

Ref. No. 9-119/RIFD/MODROB/Policy-1/2016-17

2017

The Drawing and Disbursing Officer
Local

Sub: Release of Grant-in-Aid under Modernization and Removal of Obsolescence Scheme (MODROBS) for the year 2017-18 payable during the current financial year 2017-18.

Sir,

I am directed to convey the sanction of the Council for payment of Rs. 768000/- (Rupees Seven Lakh Sixty Eight Thousand Only) for the year 2017-18 under the Modernization and Removal of Obsolescence Scheme (MODROBS) to Netaji Subhash Engineering College, Techno City, Garia, Kolkata-700152 West Bengal for meeting the expenditure for implementing the Scheme as per details given below:

1.	Name of the Beneficiary Institution	Netaji Subhash Engineering College, Techno City, Garia, Kolkata-700152 West Bengal
2.	Chief Coordinator's Name & Deptt.	Dr. Gautam Maity Deptt. of Electronics And Communications Engineering
3.	Title of the Project	Advanced communication laboratory
4.	Grant-in-aid Sanctioned (80% in advance and 20% as reimbursement on submission of DC and other related documents)	Rs. 960000/- [Rs. 790588 /- for non-recurring and Rs. 169412 /- for recurring expenditure]
5.	Amount to be released	Rs. 768000/-
6.	Approved Duration (in years)	2 Year

- The sanctioned grant-in-aid is debitable to the major Head 601.4-a MODROBS grant and is valid for payment during the financial year 2017-18.
- The grant-in-aid of the grant shall be drawn by the Drawing and Disbursing Officer (DDO), All India Council for Technical Education, New Delhi on the Grants-in-aid bill and shall be disbursed to and credited to the account of The Principal / Director / Registrar Netaji Subhash Engineering College, Techno City, Garia, Kolkata-700152 West Bengal.
- The Institute is requested to verify the correctness of the under mention bank account/ RTGD submitted by them along with the proposals, in which the grant is being released. In case of any omission the same should be reported to AICTE immediately along with refund of entire grant.

Bank Name	Bank Branch and address	Account Holder's Name	Account Number	Type of Account	IFSC Code	Type of Institution	Institution's PAN No.
PUNJAB NATIONAL BANK	NSEC, TECHNOCITY, GARIA, KOLKATA-152	NETAJI SUBHASH ENGINEERING COLLEGE	4885000100004310	Saving Account	PUNB0488500	Unaided Private	ADQP154821

- The date of release of the grant by AICTE shall be taken as the date of commencement of the project. The Principal / Director / Registrar shall intimate about the receipt of the grant to AICTE. Any Expenditure incurred prior to the issuance of the approval letter will not be allowed to be adjusted in the grant and if the Institution / University do not take the project work within one month of the receipt of the grant, the approval shall ipso facto lapse.
- Each project sanctioned by AICTE is assigned a specific Ref. No. given on the pre-page. All correspondences related to the project must contain this number along with year of sanction of the project; failing which correspondence will not be entertained.
- The accounts of the grants which are liable to be audited by the Council or Comptroller and Auditor General of India or by any Officer designated for the purpose.
- The Institute/University shall not charge any overheads on this project and will provide all the administrative support for completion of the project.

Contd.-2/-

8. The grantee shall utilize grants on only approved items of expenditure (list enclosed). However in case the grantee wishes to recast the project, approval of the Council must be obtained for the revised item of expenditure and they will maintain proper accounts of the expenditure as per the norms/procedures of AICTE/Government of India.
9. The assets acquired wholly or substantially out of All India Council for Technical Education's grant shall not be disposed or encumbered or utilize for the purpose other than those for which the Grant was given without proper sanction of the All India Council for Technical Education and should at any time the institution cease to function, such assets shall revert to the All India Council for Technical Education.
10. The grantee shall maintain an audited record of assets acquired wholly or substantially out of the grant-in-aid and a register or assets shall be maintained by the Institute in the prescribed form i.e. GFR-19.
11. The amount of interest accrued on the grant should be treated as part of the grant to be utilized for that particular project. However, the interest amount accrued along with grant disbursed should not exceed the total grant sanctioned for the project. The Institute receiving the grant should reflect the same in the audited statement of accounts/ utilization certificate and may either refund the interest amount to AICTE or AICTE should adjust the same in the next instalment of grant before releasing.
12. Since the duration of the project is for two years, the request for reimbursement of 20% of remaining amount shall be made with UC and other related documents in such a way that the entire project is completed in the prescribed period of two years.
13. The Annual Progress Report in the prescribed format along with Statement of Expenditure and Audited Utilization Certificate shall be submitted to AICTE not later than one month after completion.
14. Project Completion Report (PCR) in the prescribed format along with the Audited Statement of Expenditure indicating expenditure incurred in the total duration of the project in the prescribed format, utilization in the format and GFR-15 shall be submitted to the Council.
15. The Utilization Certificate (UC) supported by Audited Statement of Expenditure to the effect that the grant has been utilized for the purpose for which it has been sanctioned shall be furnished to the All India Council for Technical Education immediately after completion of the project. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council.
16. The grantee shall follow the terms and conditions of Modernization and Removal of Obsolescence (MODROB) as laid down in the scheme details under AICTE AQIS 2016-17.
17. The Grantee shall fully implement the official language policy of Union Government and comply with the official language Act, 1963 and official language (use of official purposes of the Union Rules, 1976 etc.)
18. The University / Institute receiving grant under MODROB is expected to put up a plaque at the main entrance of the Lab/Department, which has been modernized using the grant. All the equipment procured through the project should be super scribed with AICTE project file number.
19. The funds to the extent are available under the scheme.
20. The sanction issues in exercise of the powers delegated to the Council. It is also certified that grant-in-aid is being released in conformity with the Rules and Regulation of the scheme.

Yours Sincerely,

 (Dileep N. Malkhede)
 Advisor (RIFD)

08 SEP 2017

Copy forwarded for information and necessary action to:

1. The Principal / Director / Registrar,
 Netaji Subhash Engineering College,
 Techno City, Garia, Kolkata-700152 West Bengal
2. Dr. Gouram Maity,
 Deptt of Electronics And Communications Engineering
 Techno City, Garia, Kolkata-700153 West Bengal
3. Office of Director General of Audit,
 General Revenues, AGCR Building, I.P. Estate,
 New Delhi-110 002.
4. Guard File

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
Nelson Mandela Marg, Vasant Kunj, New Delhi - 110 067

Ref. No : 9-119/RIFD/MGROB/Policy-1/2016-17

Name of the Principal Investigator & Deptt: Dr. Goutam Maity
Dept. of ELECTRONICS AND COMMUNICATIONS ENGINEERING

Name of the Institution: Netaji Subhash Engineering College,
Techno City, Garia, Kolkata-700152, West Bengal

Title of the Project: Advanced communication laboratory

Approved items for expenditure on purchase of machinery/equipments (Non-Recurring)

S.No.	Approved Items (As per proposal)
1	Portable computing device
2	High-storage and processing data server
3	High photo quality printing/scanning/Xerox instrument
4	Digital Storage Oscilloscope
5	Qualnet E.1

Total approved amount is Rs.790588/- Non-recurring head and Rs.169412/- under Recurring head i.e. total approved amount is Rs.960000/- (Rupees Nine Lakh Sixty Thousand Only).


(Dileep N Malkhede)
Advisor (RIFD)
08 SEP 2017

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
Nelson Mandela Marg, Vasant Kunj, New Delhi-110067

Handwritten signature and date: 23/10/17

Ref. No. 9-155/RIFD/MODROB/Policy-1/2016-17

2017

The Drawing and Disbursing Officer
Local

Sub: Release of Grant-in-Aid under Modernization and Removal of Obsolescence Scheme (MODROBS) for the year 2017-18 payable during the current financial year 2017-18.

Sir,

I am directed to convey the sanction of the Council for payment of Rs. 288000/- (Rupees Two Lakh Eighty Eight Thousand Only) for the year 2017-18 under the Modernization and Removal of Obsolescence Scheme (MODROBS) to Netaji Subhash Engineering College, Techno City, Garia, Kolkata-700152 West Bengal for meeting the expenditure for implementing the Scheme as per details given below:

- | | | |
|---|---|--|
| 1. Name of the Beneficiary Institution | : | Netaji Subhash Engineering College, Techno City, Garia, Kolkata-700152 West Bengal |
| 2. ✓ Chief Coordinator's Name & Deptt. | : | Dr. Sukumar Roy,
Deptt. Of Biomedical Engineering |
| 3. Title of the Project | : | Modernization of Biomaterials and Biomechanics Lab |
| 4. Grant-in-aid Sanctioned
(80% in advance and 20% as reimbursement on submission of UC and other related documents) | : | Rs.360000/- [Rs.296471 /- for non-recurring and Rs.63529 /- for recurring expenditure] |
| 5. Amount to be released | : | Rs. 288000/- |
| 6. Approved Duration (in years) | : | 2 Year |

- The sanctioned grant-in-aid is debitible to the major Head 601.4 a MODROBS grant and is valid for payment during the financial year 2017-18.
- The grant-in-aid of the grant shall be drawn by the Drawing and Disbursing Officer (DDO) All India Council for Technical Education, New Delhi on the Grants-in-aid bill and shall be disbursed to and credited to the account of The Principal / Director / Registrar Netaji Subhash Engineering College, Techno City, Garia, Kolkata-700152 West Bengal.
- The Institute is requested to verify the correctness of the under mention bank account/ RTGD submitted by them along with the proposals, in which the grant is being released. In case of any omission the same should be reported to AICTE immediately along with refund of entire grant.

Bank Name	Bank Branch and address	Account Holder's Name	Account Number	Type of Account	IFSC Code	Type of Institution	Institution's PAN No.
PUNJAB NATIONAL BANK	NSEC, TECHNOCITY, GARIA, KOLKATA-152	NETAJI SUBHASH ENGINEERING COLLEGE	4885000100004310	Saving Account	PUNB0488500	Unaided Private	ADQP5482

- The date of release of the grant by AICTE shall be taken as the date of commencement of the project. The Principal / Director / Registrar shall intimate about the receipt of the grant to AICTE. Any Expenditure incurred prior to the issuance of the approval letter will not be allowed to be adjusted in the grant and if the Institution / University do not take the project work within one month of the receipt of the grant, the approval shall ipso facto lapse.
- Each project sanctioned by AICTE is assigned a specific Ref. No. given on the pre-page. All correspondences related to the project must contain this number along with year of sanction of the project, failing which correspondence will not be entertained.
- The accounts of the grantee which are liable to be audited by the Council or Comptroller and Audited General of India or by any Officer designated for the purpose.
- The Institute/University shall not charge any overheads on this project and will provide all the administrative support for completion of the project.

Contd...2/-

3. The grantee shall utilize grants on only approved items of expenditure (list enclosed). However in case the grantee wishes to recast the project, approval of the Council must be obtained for the revised item of expenditure and they will maintain proper accounts of the expenditure as per the norms/procedures of AICTE/Government of India.
9. The assets acquired wholly or substantially out of All India Council for Technical Education's grant shall not be disposed or encumbered or utilize for the purpose other than those for which the Grant was given without proper sanction of the All India Council for Technical Education and should at any time the institution cease to function, such assets shall revert to the All India Council for Technical Education.
10. The grantee shall maintain an audited record of assets acquired wholly or substantially out of the grant-in-aid and a register of assets shall be maintained by the Institute in the prescribed form i.e. GFR-19.
11. The amount of interest accrued on the grant should be treated as part of the grant to be utilized for that particular project. However, the interest amount accrued along with grant disbursed should not exceed the total grant sanctioned for the project. The Institute receiving the grant should reflect the same in the audited statement of accounts/ utilization certificate and may either refund the interest amount to AICTE or AICTE should adjust the same in the next installment of grant before releasing.
12. Since the duration of the project is for two years, the request for reimbursement of 20% of remaining amount shall be made with UC and other related documents in such a way that the entire project is completed in the prescribed period of two years.
13. The Annual Progress Report in the prescribed format along with Statement of Expenditure and Audited Utilization Certificate shall be submitted to AICTE not later than one month after completion.
14. Project Completion Report (PCR) in the prescribed format along with the Audited Statement of Expenditure indicating expenditure incurred in the total duration of the project in the prescribed format, utilization in the format and GFR-19 shall be submitted to the Council.
15. The Utilization Certificate (UC) supported by Audited Statement of Expenditure to the effect that the grant has been utilized for the purpose for which it has been sanctioned shall be furnished to the All India Council for Technical Education immediately after completion of the project. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council.
16. The grantee shall follow the terms and conditions of Modernization and Removal of Obsolescence (MODROB) as laid down in the scheme details under AICTE AQIS 2016-17.
17. The Grantee shall fully implement the official language policy of Union Government and comply with the official language Act, 1963 and official language (use of official purposes of the Union Rules, 1976 etc.)
18. The University / Institute receiving grant under MODROB is expected to put up a plaque at the main entrance of the Lab/Department, which has been modernized using the grant. All the equipment procured through the project should be super scribed with AICTE project file number.
19. The funds to the extent are available under the scheme.
20. The sanction issues in exercise of the powers delegated to the Council. It is also certified that grant-in-aid is being released in conformity with the Rules and Regulation of the scheme.

Yours Sincerely,



(Dileep N. Malkhede)
Advisor (RIFD)

12 SEP 2017

Copy forwarded for information and necessary action to:

1. The Principal / Director / Registrar,
Nataji Subhash Engineerin College,
Techno City, Garia, Kolkata-700152 West Bengal
2. ✓ Dr. Sukumar Roy,
Deptt Of Biomedical Engineering
Techno City, Garia, Kolkata-700152 West Bengal
3. Office of Director General of Audit,
General Revenues, AGCR Building, I.P. Estate,
New Delhi-110 002.
4. Guard File

A.I. INDIA COUNCIL FOR TECHNICAL EDUCATION
Nelson Mandela Marg, Vasant Kunj, New Delhi - 110 067

Ref. No. 9-155/RIFD/MODROB/Policy-1/2016-17

Name of the Principal Investigator & Deptt. : Dr. Sukumar Roy
Dept. of BIOMEDICAL ENGINEERING

Name of the Institution : **NETAJI SUBHASH ENGINEERING COLLEGE,**
Techno City, Garia, Kolkata-700152, West Bengal

Title of the Project : **Modernization of Biomaterials and Biomechanics Lab**

Approved items for expenditure on purchase of machinery/equipments (Non-Recurring)

S.No.	Approved Items (As per proposal)
1	Cone & Plate Viscometer
2	Digital Strain Gauge Indicator
3	Vickers Hardness Tester
4	BOD incubator

Total approved amount is Rs.296471/- Non-recurring head and Rs.63529/- under Recurring head i.e. total approved amount is Rs.360000/- (Rupees Three Lakh Sixty Thousand Only).


(Dilcep N Malkhede)
Advisor (RIFD)

University of Massachusetts Amherst

Contract for Services Amendment

Amendment No: 1

PO Number: A000736832
(10-digits)

Date: 10/11/2018

Between The University of Massachusetts, Amherst:

Center for International Education, Montague House

Department Name & Campus Address

And the Contractor:

Netaji Subhash Engineering College, Techno City Garia, Kolkata, 99 India

Contractor Name & Address (Street, City, State, Zip)

Contract Number and Description: _____

The CFS is amended as follows:

Please add \$610 to the original contract of 22,450 to cover unanticipated expenses.

Total contract nte \$23,060.00

UNIVERSITY OF MASSACHUSETTS AMHERST

Sig: _____

Name: David R. Evans

Title: PI

(Authorized University Official)

Sig: _____

Name: _____

Title: _____

Sig: _____

Name: _____

Title: _____

CONTRACTOR

Netaji Subhash Engineering College (Name)

Sig: Sujan Krishna Samanta

Sig: Sukumar Roy

Name: Sujan Krishna Samanta/Sukumar Roy

Title: Asst Professor/Dept Head BMET

S. K. SAMANTA
ASST. PROFESSOR
MSEC BME
GARIA, KOL-152

Prof. (Dr) SUKUMAR ROY
Head Of Bio-Medical Engineering Department
Netaji Subhash Engineering College
Techno City, Garia,
Kolkata - 700152



UNIVERSITY OF MASSACHUSETTS
CONTRACT FOR SERVICES
TERMS AND CONDITIONS
(For Professional Services Over \$10,000)

(P.O. No.) _____

(Bid No.) _____

This agreement is made, entered into, and effective on 08/15/2018 by and between the University of Massachusetts Amherst, (hereinafter called "University"), an agency of the Commonwealth of Massachusetts and

Netaji Subhash Engineering College, Techno City, Garia, Kolkata India

(Contractor's legal name and address)

(hereinafter called the "Contractor" and collectively the "Parties").

This agreement (the "Contract") is comprised of the following documents, listed in the order of precedence: (1) this Contract for Services Terms and Conditions; (2) any Contract Amendments, as identified in Section 2, below; and (3) any attached Scope of Services as identified in Section 1, below, including any addenda thereto. The Contract for Services Terms and Conditions and any agreed upon changes thereto included in any Contract Amendments shall take precedence over any additional or conflicting terms and conditions as may be included in any other document attached hereto.

1. **Scope of Services.** The Contractor agrees to perform the following services:
To provide logistical and technical support to the BMET Workshop per Attachment A, Scope of Services consisting of 4 pages and Attachment B, Payment Schedule attached here and made a part hereof.

or if applicable, those services described in the Attachment[s] attached hereto. Any Attachment attached hereto is made a part of this Contract and must be specifically labeled (e.g. "Attachment A, Scope of Services, consisting of 'n' pages"). Only the Scope of Services specifically referenced in this Contract and signed by the Parties' authorized representatives shall apply.

2. **Contract Amendments.** The following amendments to the Contract have been executed by duly authorized representatives of the Parties and are attached hereto and incorporated herein:

All amendments attached hereto must be specifically labeled (e.g. "Attachment B, Amendment No. 1, consisting of 'n' pages").

3. **Dates of Performance:** From: 08/18/2018 (Start Date) To: 10/10/2018 (Completion Date)

4. **Responsible University Official:** The University Official exercising managerial and budgetary control for this Contract shall be:

David R. Evans, PI

(Name and Title)

5. **Payment:**

A. The University shall compensate the Contractor for the services rendered at the rate of \$ 22,450 per workshop (e.g., hour, week, semester, project, etc.).

B. In no event shall the Contractor be reimbursed for time other than that actually spent providing the described service(s).

C. Payment will be made upon submittal and approval of the Contractor's Invoice(s) that is (are) received
Monthly Quarterly Other (specify) per payment schedule Attachment B

- D. **Reimbursement for Travel and Other Contractor Expenses:**

All travel and meals are part of this Contract. No reimbursement will be made

Contractor will be reimbursed for pre-approved travel in an amount not to exceed \$ _____
Copies of receipts must be submitted. Any expense claimed by the Contractor for which there is no supporting documentation shall be disallowed.

Contractor will be reimbursed for OTHER expenses in an amount not to exceed \$ _____

OTHER Expenses shall be limited to: _____
Copies of receipts must be submitted. Any expense claimed by the Contractor for which there is no supporting documentation shall be disallowed.

- E. The total of all payments made against this Contract shall not exceed \$ 22,450.00



F. The University's payment terms are net thirty (30) days from the date of receipt of Contractor's invoice, with late penalty interest assessable at rates established by the Commonwealth after 45 days in accordance with Mass. Gen. Laws ch 29 § 29C and with Commonwealth regulation 815 C.M.R. 4.00.

6. **Certification.** Contractor certifies under the pains and penalties of perjury that pursuant to Mass. Gen. Laws ch.62C, §49A, that the Contractor has filed all state tax returns; paid all taxes and complied with all applicable laws relating to taxes; and that pursuant to Mass. Gen. Laws ch.151A, §19A(b), has complied with all laws of the Commonwealth relating to contributions and payment in lieu of contributions to the Employment Security System; and, if applicable, with all laws of the Commonwealth relating to Worker's Compensation, Mass. Gen. Laws ch.152 and payment of wages, Mass. Gen. Laws ch. 149, § 148. Pursuant to federal law, Contractor shall verify the immigration status of all workers assigned to the contract without engaging in unlawful discrimination; and Contractor shall not knowingly or recklessly alter, falsify, or accept altered or falsified documents from any such worker.
7. **Conflict of Interest.** Contractor acknowledges that it may be subject to the Massachusetts Conflict of Interest statute, Mass. Gen. Laws ch. 268A, and to that extent, Contractor agrees to comply with all requirements of the statute in the performance of this Contract.
8. **Compliance With Laws.** Contractor agrees to comply with all applicable local, state, and federal laws, regulations and ordinances in the performance of its obligations under this Contract.
9. **Independent Contractor Status.** The Contractor is an independent contractor and not an employee or agent of the University. No act or direction of the University shall be deemed to create an employer/employee or joint employer relationship. The University shall not be obligated under any contract, subcontract, or other commitment made by the Contractor.
10. **Contractor's Qualifications and Performance.** In accordance with the terms and conditions of this Contract, the Contractor represents that it is qualified to perform the services set forth herein and has obtained all requisite licenses and permits to perform the services. In addition, the Contractor agrees that the services provided hereunder shall conform to the professional standards of care and practice customarily expected of firms engaged in performing comparable work; that the personnel furnishing said services shall be qualified and competent to perform adequately the services assigned to them; and that the recommendations, guidance, and performance of such personnel shall reflect such standards of professional knowledge and judgment.

11. Termination:

- A. **Without Cause.** This Contract may be terminated without cause by either party by giving written notice to the other at least thirty (30) calendar days prior to the effective date of termination stated in the notice.
- B. **With Cause.** If Contractor breaches any material term or condition stated herein or fails to perform or fulfill any material obligation required by this Contract, the University may terminate this Contract by giving written notice to the Contractor stating the circumstances of the breach at least seven (7) calendar days before the effective date of termination stated in the notice. Notwithstanding the foregoing, the notice of termination provided by the University may state a period during which the alleged breach may be cured by the Contractor, which cure shall be subject to approval by the University. In the event of a breach by Contractor, Contractor may be subject to any and all applicable contract rights and remedies available to the University. Applicable statutory or regulatory penalties may also be imposed.

12. Obligations in Event of Termination:

- A. Upon termination of this Contract, all finished or unfinished documents, data, studies, and reports prepared by the Contractor pursuant to this Contract, shall become the property of the University.
- B. Upon termination of this Contract without cause, the University shall promptly pay the Contractor for all services performed to the effective date of termination, subject to offset of sums due the Contractor against sums owed by the Contractor to the University, and provided Contractor is not in default of this Contract and Contractor submits to the University a properly completed invoice, with supporting documentation covering such services, no later than thirty (30) calendar days after the effective date of termination.

13. **Recordkeeping, Audit, and Inspection of Records.** The Contractor shall maintain books, records and other compilations of data pertaining to the requirements of the Contract to the extent and in such detail as shall properly substantiate claims for payment under the Contract. All such records shall be kept for a period of six (6) years or for such longer period as is specified herein. All retention periods start on the first day after final payment under this Contract. If any litigation, claim, negotiation, audit or other action involving the records is commenced prior to the expiration of the applicable retention period, all records shall be retained until completion of the action and resolution of all issues resulting therefrom, or until the end of the applicable retention period, whichever is later. The Governor, the Secretary of Administration and Finance, the State Comptroller, the State Auditor, the Attorney General, the Federal grantor agency (if any), the University, or any of their duly authorized representatives or designees shall have the right at reasonable times and upon reasonable notice, to examine and copy, at reasonable expense, the books, records, and other compilations of data of the Contractor which pertain to the provisions and requirements of this Contract. ^{10/1/16} ^{10/1/16} shall include on-site audits, review, and copying of records.



14. **Political Activity Prohibited.** The Contractor may not use any Contract funds and none of the services to be provided by the Contractor may be used for any partisan political activity or to further the election or defeat of any candidate for public office.
15. **Title, Ownership.** Unless provided otherwise by law or the University, title and possession of all data, reports, programs, software, equipment, furnishings, and any other documentation or product paid for with University funds shall vest with the University at the termination of the Contract. If the Contractor, or any of its subcontractors, publishes a work dealing with any aspect of performance under the Contract, or of the results and accomplishments attained in such performance, the University shall have a royalty-free non-exclusive and irrevocable license to reproduce, publish or otherwise use and to authorize others to use the publication.
16. **Confidentiality/Privacy.** The Contractor shall comply with all applicable state and federal laws and regulations relating to confidentiality and privacy. In addition, in the performance of this Contract, the Contractor may acquire or have access to "personal data" and become a "holder" of such personal data (as defined in Mass. Gen. Laws ch. 66A) or personal information (as defined in Mass. Gen. Laws ch. 93H). Personal data and personal information shall be deemed to be "Personal Information." Contractor shall implement feasible safeguards to restrict access and ensure the security, confidentiality and integrity of all Personal Information owned, controlled, stored, or maintained by University and provided to or accessed by Contractor in the performance of services irrespective of the medium in which it is held. The Contractor agrees that it shall inform each of its employees, servants or agents, having involvement with Personal Information of the laws and regulations relating to confidentiality and privacy.
17. **Assignment and Delegation.** The Contractor shall not assign or in any way transfer any interest in this Contract without the prior written consent of the University, nor shall the Contractor subcontract any service without the prior written approval of the University. Any purported assignment of rights or delegation of performance in violation of this Section is VOID.
18. **Nondiscrimination in Employment.** The Contractor shall not discriminate against any qualified employee or applicant for employment because of race, color, national origin, ancestry, age, sex, religion, physical or mental handicap, or sexual orientation or a person who is a member of, applies to perform, or has an obligation to perform service in a uniformed military service of the United States, including the National Guard on the basis of that membership, application or obligation. The Contractor agrees to comply with all applicable Federal and State employment statutes, rules and regulations.
19. **Severability.** If any provision of this Contract is declared or found to be illegal, unenforceable, or void, then both Parties shall be relieved of all obligations under that provision. The remainder of the Contract shall be enforced to the fullest extent permitted by law.
20. **Choice of Law.** This Contract is entered into in the Commonwealth of Massachusetts, and the laws of the Commonwealth, without giving effect to its conflicts of law principles, govern all matters arising out of or relating to this Contract and all of the transactions it contemplates, including, without limitation, its validity, interpretation, construction, performance and enforcement.
21. **Forum Selection.** The Parties agree to bring any action arising out of or relating to this Contract or the relationship between the Parties in the state courts of the Commonwealth of Massachusetts which shall have exclusive jurisdiction thereof. The Contractor expressly consents to the jurisdiction of the state courts of the Commonwealth of Massachusetts in any action brought by the Commonwealth or the University arising out of or relating to this Contract or the relationship between the Parties, waiving any claim or defense that such forum is not convenient or proper. This paragraph shall not be construed to limit any other legal rights of the Parties.
22. **Force Majeure.** Neither party shall be liable to the other or be deemed to be in breach of this Contract for any failure or delay in rendering performance arising out of causes beyond its reasonable control and without its fault or negligence. Such causes may include, but are not limited to, acts of nature or of a public enemy, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, or unusually severe weather. Dates or times of performance shall be extended to the extent of delays excused by this section, provided that the party whose performance is affected notifies the other promptly of the existence and nature of such delay.
23. **Indemnification of University.** The Contractor shall defend, indemnify, and hold harmless the Commonwealth, the University, its Trustees, Officers, servants, and employees from and against any and all claims, liability, losses, third party claims, damages, costs, or expenses (including attorneys' and experts' fees) arising out of or resulting from the performance of the services performed by the Contractor, its agents, servants, employees, or subcontractors under this Contract, provided that any such claims, liability, losses, third party claims, damages, costs, or expenses are attributable to bodily injury, personal injury, pecuniary injury, damage to real or tangible personal property, resulting therefrom and caused in whole or in part by any intentional or negligent acts or omissions of the Contractor, its employees, servants, agents, or subcontractors. The foregoing express obligation of indemnification shall not be construed to negate or abridge any other obligation of indemnification running to the Commonwealth and/or the University that would otherwise exist. The University shall give the Contractor prompt and timely notice of any claims, threatened or made, or any law suit instituted against it which could result in a claim for indemnification hereunder. The extent of this Contract of indemnification shall not be limited by any obligation or any term or condition of any insurance policy. The obligations set forth above shall survive the expiration or termination of this Contract.
24. **Risk of Loss.** The Contractor shall bear the risk of loss of any Contractor materials used for a Contract and for all deliverables and work in process.





USAID
FROM THE AMERICAN PEOPLE



**INTERNATIONAL PROFESSIONAL EXCHANGE PROGRAM
ON
"BIOMEDICAL EQUIPMENT TECHNOLOGY (BMET) ASSOCIATE
DEGREE"
ORGANIZED BY
DEPARTMENT OF BIOMEDICAL ENGINEERING
NETAJI SUBHASH ENGINEERING COLLEGE, KOLKATA, INDIA**

SEPTEMBER 16, 2018 TO SEPTEMBER 29, 2018

PROGRAM SCHEDULE

DAY 1, September 16, 2018		
VENUE: APC Roy Hall, NetajiSubhash Engineering College		
09:30-09:35	Welcome Address	Dr. Hrishikesh Mandal, Director, NSEC
09:35-09:40	Introduction to workshop	Dr. Sukumar Roy, Prof. & HOD, BME & Coordinator-BMET 2018
09:40-09:45	Address by	Prof. (Dr.) Amal K Ghosh, Principal, NSEC
09:45-09:50	Address by	Dr. Arindam Roy, Director, TIG
09:50-10:00	Opening Remarks	Hassan Aslami, Senior Manager of Associate Degrees, USDWP
10:00-10:10	Orientation & Detailed Overview	Larry F McNeese, CCS
10:10-10:25	Introduction of Participants & Trainers	
10:25-10:30	Vote of thanks	Mr. Sujan Krishna Samanta, Asstt. Prof., BME & Convener-BMET 2018
GROUP PHOTO SESSION		
10:35-10:45	Registration	
TEA BREAK		
11:15-13:00	Introduction to Biomedical Equipment Technology (BMET) - An overview	Mr. Susovan Dasgupta
LUNCH AND PRAYER BREAK		
14:00-15:15	Introduction to the electrocardiogram (ECG) machine	Mr. Ishan Kundu
TEA BREAK		
15:30-17:00	Hands-on laboratory to operate, evaluate, and troubleshoot an electrocardiogram (ECG) machine	Mr. IshanKundu

DAY 2, September 17, 2018		
VENUE: Project Lab-ECE Deptt., NetajiSubhash Engineering College		
09:30-10:45	<ul style="list-style-type: none"> ❖ Introduction to the IDL 800A-R digital circuitry laboratory trainer ❖ Hands-on laboratory using the IDL 800A-R to verify digital component operation 	Mr. Anupam Maiti, Mr. Tapas Kr. Dawn
TEA BREAK		
11:00-13:30	Hands-on laboratory using the IDL 800A-R equipment to verify digital gate operation	Mr. Anupam Maiti Mr. Tapas Kr. Dawn
LUNCH AND PRAYER BREAK		
14:30-16:00	Hands-on laboratory using the IDL 800A-R equipment to	Mr. Anupam Maiti

	construct and evaluate the operation of a digital counter circuit	Mr. Tapas Kr. Dawn
16:00-16:15	TEA BREAK	
16:15-17:30	Hands-on laboratory using the IDL 800A-R equipment to construct and evaluate the operation of a digital counter circuit	Mr. Anupam Maiti Mr. Tapas Kr. Dawn

DAY 3, September 18, 2018

VENUE: Project Lab-ECE Deptt., Netaji Subhash Engineering College

09:30-10:45	Introduction to digital memory	Mr. Anupam Maiti Mr. Tapas Kr. Dawn,
10:45-11:00	TEA BREAK	
11:00-13:30	Hands-on laboratory using the IDL 800A-R equipment to construct and evaluate the operation of a digital memory circuit.	Mr. Anupam Maiti Mr. Tapas Kr. Dawn
13:30-14:30	LUNCH AND PRAYER BREAK	
14:30-16:00	Hands-on laboratory using the IDL 800A-R equipment to construct a digital circuit using a schematic drawing of a circuit.	Mr. Anupam Maiti Mr. Tapas Kr. Dawn
16:00-16:15	TEA & SNACKS DURING THE SESSION	
16:15-17:30	Hands-on laboratory using the IDL 800A-R equipment, logic probe, and the oscilloscope to test and troubleshoot digital circuits.	Mr. Anupam Maiti Mr. Tapas Kr. Dawn

DAY 4, September 19, 2018

VENUE: Language Lab-BES Deptt., Netaji Subhash Engineering College

09:30-10:45	<ul style="list-style-type: none"> ❖ NSEC biomedical curriculum overview ❖ Curriculum development ❖ Curriculum updating process ❖ Student recruitment and retention ❖ Feed Back and interaction with Selected BME students 	Dr. Sukumar Roy
10:45-11:00	TEA BREAK	
11:00-13:30	<ul style="list-style-type: none"> ❖ NSEC Biomedical industry partners, Advisory boards, hospital support& program sustainability ❖ Globalization of the BMET program ❖ BMET program operation and development costs ❖ BMET program funding sources ❖ Summary of NSEC BMET program 	Dr. Sukumar Roy
13:30-14:30	LUNCH AND PRAYER BREAK	
14:30-15:30	Introduction to patient physiology monitoring	Mr. Ishan Kundu
15:30-15:45	TEA BREAK	
15:45-17:15	Hands-on laboratory to operate, evaluate, and troubleshoot a patient physiology monitor.	Mr. Ishan Kundu, Mr. Biswajit Pradhan

DAY 5, September 20, 2018

VENUE: Language Lab-BES Deptt., Netaji Subhash Engineering College

09:30-11:00	Electrosurgical unit (ESU)	Mr. Ishan Kundu
11:00-11:15	TEA BREAK	
11:15-13:10	ESU hands-on laboratory	Mr. Ishan Kundu Mr. Tapas Mitra
13:00-14:00	LUNCH AND PRAYER BREAK	
14:00-15:30	CPR and defibrillator	Mr. Ishan Kundu
15:30-15:45	TEA BREAK	
15:45-17:15	Defibrillator hands-on laboratory and troubleshooting	Mr. Ishan Kundu Mr. Prabir Dey

DAY 6, September 21, 2018

09:30-12:30	Cultural Visit	
12:30-14:30	LUNCH AND PRAYER BREAK	
14:30-18:00	Cultural visit	

DAY 7, September 22, 2018**VENUE:** Language Lab-BES Deptt., Netaji Subhash Engineering College

09:30-10:45	Ventilator and gas analyzer	Mr. IshanKundu
10:45-11:00	TEA BREAK	
11:00-13:30	Pumps: infusion and patient feeding,	Dr. Sukumar Roy Mr. IshanKundu
13:30-14:30	LUNCH AND PRAYER BREAK	
14:30-16:00	Hands on Ventilator machine	Mr. Prabir Dey
16:00-16:15	TEA BREAK	
16:15-17:30	Hands on Syringe pump, Pulse oximeter, Q&A session	Mr. Prabir Dey Mr. Prabir Dey

DAY 8, September 23, 2018**VENUE:** Language Lab-BES Deptt., Netaji Subhash Engineering College

09:30-11:00	Computerized Maintenance Management System (CMMS)	Mr. Ishan Kundu
11:00-11:15	TEA BREAK	
11:15-13:10	Computerized Maintenance Management System (CMMS)	Mr. Ishan Kundu
13:00-14:00	LUNCH AND PRAYER BREAK	
14:00-15:30	Health Technology Management, Standards and Recommended Practices	Mr. Ishan Kundu
15:30-15:45	TEA BREAK	
15:45-17:15	Computerized Management System for BME Program: Admission, Students Management, Assessment, Reforms & Quality Assurance	Dr. Sukumar Roy

DAY 9, September 24, 2018**VENUE:** United Healthcare Products India, Kolkata – Mfg. Industry

09:30-11:00	Medical Gas	United Healthcare Products India
11:00-11:15	TEA BREAK	
11:15-13:30	Anaesthesia System	United Healthcare Products India
13:30-14:30	LUNCH AND PRAYER BREAK	
14:30-17:30	OT Light	United Healthcare Products India

DAY 10, September 25, 2018

Visit to JIS College of Engineering – Similar Program

09:30-10:45	Interaction with faculty & administrative staffs	
10:45-11:00	TEA BREAK	
11:00-13:30	Laboratory visit	
12:30-13:30	LUNCH AND PRAYER BREAK	
14:30-16:30	Laboratory visit and interaction with students	

DAY 11, September 26, 2018**VENUE:** Nehru Memorial Techno Global Hospital, Barrackpore

09:30-11:00	Interaction with the Staff members of BME department Tour of the BMET facility (work shop, tools, etc.)	Mr. Subhankar Chowdhury -BME
11:00-11:15	TEA BREAK	
11:15-12:30	Operation of equipment (CT, USG, Hemodialyzer, X-rays, ESA, ICU instruments, defibrillator, etc)	Mr. Subhankar Chowdhury -BME
12:30-13:30	LUNCH AND PRAYER BREAK	
13:30-17:30	Hands on training, Core competencies of the HTM technician Hospital preventive maintenance (PM) procedure	Mr. Subhankar Chowdhury -BME

DAY 12, September 27, 2018**VENUE:** Language Lab, BES Deptt., Netaji Subhash Engineering College

09:30-11:30	Infrastructure visit of the college	
11:30-11:45	TEA BREAK	
11:45-13:30	Hands on training on syringe pump/ volumetric pump	Dr. Sukumar Roy Mr. I. Sarkar
13:30-14:30	LUNCH AND PRAYER BREAK	
14:30-15:30	Hands on training ECG & Patient Monitor	Mr. I. Sarkar
15:30-15:45	TEA BREAK	
15:45-17:15	Hands on training Defibrillator	Mr. I. Sarkar

DAY 13, September 28, 2018

09:30-12:30	Cultural Visit	
12:30-14:30	LUNCH AND PRAYER BREAK	
14:30-18:00	Cultural visit	

DAY 14, September 29, 2018**VENUE:** Physiology Lab-BME Deptt., Netaji Subhash Engineering College

09:30-11:00	BMET risks, responsibilities, and rewards	Mr. Larry F McNeese
11:00-11:15	TEA BREAK	
11:15-13:30	Laboratory equipment: microscopes, scales, centrifuge, and spectrophotometer	Mr. Sujan K Samanta Mr. Tapas dawn Mr. Saibal Sinha
13:30-14:30	LUNCH AND PRAYER BREAK	
14:30-15:30	Hematology and PCR machines	Mr. Sujan K Samanta Dr. Nandan K. Jana
15:30-16:15	Feedback and valediction	



Ref. No.:

Date:

Statement of Completion

Date:11-10-2018

This is to state that all the deliverables have been met in full as per the agreement dated 15/08/2018 by and between the University of Massachusetts, Amherst, an agency of the Commonwealth of Massachusetts and Netaji Subhash Engineering College, Technocity, Garia, Kolkata, India. The schedule provided for the USAID Sponsored USWDP program: "Biomedical Equipment Technology Associate Degree Programs' International Professional Exchange" dated 16th to 29th September, 2018 at Netaji Subhash Engineering College, Kolkata, WB. India, was successfully covered in all the aspects.

Following is the list of International Delegates who have attended the program:

S No.	Name	Designation	Institution
1	Karimullah Shahpar	Dean	Kabul University of Medical Sciences
2	Pashtana Banayee	Head of College	Kabul University of Medical Sciences
3	MOHD Mukhtar Sediqi	Technician	Kabul University of Medical Sciences
4	Asadullah Ghaznawi	Admin Staff	Kabul University of Medical Sciences
5	Mohammad Amin Amin	Faculty	Kabul Polytechnic University
6	Pazir Ahmad Ahmad	Faculty	Kabul Polytechnic University
7	MOHD Waleed Sami	Faculty	Kabul Polytechnic University
8	Enayatullah Fayaz	Faculty-Contracted	Kabul University of Medical Sciences
9	Shafiqullah Shinwari	Faculty-Contracted	Kabul University of Medical Sciences
10	Abdul Rashid Altaf	Senior Program Officer	USWDP
11	Hassan Aslami	Senior Manager	USWDP
12	Larry F McNeese	Instructor- Electronics/Biomedical	Electronics/Biomedical Spokane Community College

All tasks associated with this contract have been completed within the scheduled time.

Sujan Krishna Samanta

Mr. Sujan Krishna Samanta
Assistant Professor-BME

Sukumar Roy

Dr. Sukumar Roy
Professor & HOD-BME

S K SAMANTA
ASST PROFESSOR
NSEC BME
GARIA 700152

Prof.(Dr) SUKUMAR ROY
Head Of Bio-Medical Engineering Department
Netaji Subhash Engineering College
Techno City, Garia,
Kolkata - 700152



Remittance Maintenance

Action: Inquiry SOL ID: 455300 N S ENGG COLLEGE GARIA (WB)
 Remittance Type: IMTUPISBUP REG TYPE FOR UPLOAD - Remittance ID: 4553IMT18566318 USD 455300
 ISB
 ID: HFW000618

<u>B</u> ill Details	<u>M</u> iscellaneous Details	<u>H</u> istory	<u>I</u> nstructions	<u>D</u> ocument
<u>G</u> eneral Details	<u>P</u> arty Details	<u>I</u> nstrument Details	<u>L</u> imits	<u>A</u> dditional Details

Applicant Details

IF ID: HFW000618
 Operative A/c. ID: 4885000100004312 INR 488500 NETAJI SUBHASH ENGINEER
 Charge Debit A/c. ID: 4885000100004312 INR 488500 NETAJI SUBHASH ENGINEER
 Name: NETAJI SUBHASH ENGINEERING CO. LTD.
 Address Line 1: TECHNOCITY, GARIA, P.O. PANG...
 Address Line 2: P.S.-SONARPUR, SOUTH 24 PARGANA
 Address Line 3:
 City: KOLKATA
 State: WB
 Country: INDIA Postal Code: 700152
 Kolkata
 WEST BENGAL

Remittance Details

Remittance Amt. * USD 8,985.00 Lodge Date: 05-09-2018
 Transit Period (DDD) * 10 Grace Period (DDD) * 0
 Remit Country * US Due Date: 23-09-2018
 Purpose of Remittance: UNITED STATES OF AMERICA Notional Conversion Rate Code / Rate: TTB 71.6600
 OTHER SERVICES NOT INC. TT BUYING

Collection Bank Details

Currency Note & Traveler's Cheque details

Other Details

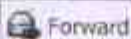
Repurchase / Sale: Yes No
 Other Bank's Ref. No.: 2018090400597490 Ref. Date: 04-09-2018
 Regulatory Approval Ref. No.:
 Free Code 1:
 Free Code 2:
 Free Code 3:
 Advance against Exports * None Partial Full
 Transfer Remit Id:
 Current Operation Verified: Inquire Yes Remittance Status Closed: Realised Yes
 Event Verification Flag: Y



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RE: reg imt 18566318 dtd 05.09.2018

newdelhi international service branch

Sent: Wednesday, September 26, 2018 02:26 PM

To: BO: N S C Garia

SIR

BRANCH CAN CHECK DETAILS OF INTERNATIONAL REMMITANCES IN FINNACLE MENU IRM.

YOU CAN UINQUIRE DETAILS IN IRM MENU.

THANKS

IMT C

Head Office

Punjab National Bank

International Services Branch,

K-16, Connaught Circus, New Delhi - 110 001.

Phones: USD 1-1500 (011-23415715)

USD 1501-5000 (011-40045918)

USD 5001-13000 (011-40045920)

USD 13001-30000 (011-40045919)

USD 30001-70000 (011-40045915)

USD 70001 AND ABOVE (011-40045918)

ALL OTHER CURRENCIES 1-5000 (011-40045916)

ALL OTHER CURRENCIES 5001-AND ABOVE (011-23415716)

please register your mail id for monthly e-statement in your mail box.

P Please don't print this Email unless you really need to. Th will preserve trees on our planet earth.

From: BO: N S C Garia**Sent:** Wednesday, September 26, 2018 2:00 PM**To:** newdelhi international service branch**Subject:** reg imt 18566318 dtd 05.09.2018

Sir,

Please send us the details of this international money transf dated 05.09.2018 for an amount of Rs 642056.00 in respect of the

above id.

Regards

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**REG: USD-8965-UNIVERSITY OF MASSACHUSETTS-NETAJI
 SUBHASH ENGINEERING COLLEGE**
 bo4553@pnb.co.in [bo4553@pnb.co.in]

To help protect your privacy, some content in this message has been blocked. If you're sure this message is from a trusted sender and you want to re-enable the blocked features, click here.

Sent: Thursday, September 13, 2018 03:04 PM

To: BO: N S C Garia

Dear Sir/Madam

REG:USD-8965-UNIVERSITY OF MASSACHUSETTS-NETAJI SUBHASH ENGINEERING COLLEGE

Inward remittance MT103 has been received in favour of your customer. Following is the details of confirmation that amount is credited to the beneficiary account

Account Number:- 4885000100004312
 Account Name:- NETAJI SUBHASH ENGINEERING COLLEGE
 Nostro Amount :- 8965
 foreign Currency Amount :- USD8980
 Rate:- 71.60
 Amount in INR:- 640090
 Commission:- 1136.00000
 GST :- 668.00000
 WorkItem No:- MT-0000000000002938521-Process
 Oding Customer Name:- UNIVERSITY OF MASSACHUSETTS
 Oding Customer Address:- 333 SOUTH ST STE 450 SHREWSBURY, MA 01545-7808
 IMT NO:- 4553IMT19111718 and 2018-09-13 15:03:54.353

Assuring you of our best services at all times

Regards,
PUNJAB NATIONAL BANK
 International Services Branch,
 K-16, Connaught Circus, New Delhi - 110 001.
 Phones: 011-23414237(D), 23415716 to 5717/65027240/65028371
 Fax: 011-23416089/23416092/23415715



Indian Council of Medical Research (ICMR)

Department of Health Research
(Ministry of Health and Family Welfare)

Online application of ICMR Adhoc Project Program detailed proposal

Date of submission: 10-Sep-2021 04:57:26 PM

Proposal Id: 2021-6467, **Version Id:** F1, **Proposal Title:** Unearthing the heterogeneity in virulence using both ICMR COVID-19 testing data and other primary data: A Data Mining approach & An Exploratory study from West Bengal

Personal Details of PI

Name of PI (IN BLOCK LETTERS)	PROF KUNTAL GHOSH	Designation	Associate Professor
Email	KUNTAL@ISICALAC.IN	Contact	9163993190
Date of Birth	13-Jul-1971	Date of Superannuation	31-Jul-2036
Nature of Employment	Permanent	Institute	Indian Statistical institute

Proposal Details

Advertisement	Call for proposals on management and analysis of COVID-19 testing data	Title of the Research Proposal	Unearthing the heterogeneity in virulence using both ICMR COVID-19 testing data and other primary data: A Data Mining approach & An Exploratory study from West Bengal
Institute Type	Govt	Valid DSIR Certificate (Validity)	YES (31-Mar-2022)
Broad Area	Bio-Medical and Informatics	Major Discipline	Integrated digital tools for planning, disease spread and forecasting
Detailed Proposal	1631273037_130251925.pdf View		
Project Duration (in Months)	18 Months	Data Collection/Analyzing Data (in Months)	6/12 Months
Objective of Study	(i) Whether there is any difference in the extent of maintaining COVID protocols across various socio-economic groups; (ii) Whether there is any difference in infectivity, severity, fatality etc. of Covid-19 among the people in several socio-economic groups; (iii) Whether there is association of the infectivity, severity, fatality etc. of COVID-19 and socio-eco-demographic status of the population under the study; (iv) Whether there is any relation of level of their exposure with the infectivity, severity, fatality etc. of COVID-19 in them; (v) Whether there is any role of social network for fighting against the COVID-19.		
Expected Outcome	Outcome in the form of Technical reports of the research is a must, and it may be considered for submission to the relevant government bodies after due approval from the concerned authority both for long-term as well as short-term planning. Important research findings will be published in good quality (high IF) journals.		
Ethical Clearance	yes	Participating Agencies (Project Type)	8 (Collaboration)
Fund received by ICMR before	N	Fund received by Other Agency before	Y

Investigator Details

Investigator Details

#	Name	Institute	Designation	Email	Contact No.	Role in Proposal
1	Prof Kuntal Ghosh	Indian Statistical institute	Associate Professor	kuntal@isical.ac.in	9163993190	PI
2	Dr Shubhra Sankar Ray	Indian Statistical institute	Associate Professor	shubhrasankar@yahoo.com	9874287750	Co-PI
3	Prof Ayanendranath Basu	Indian Statistical institute	Professor	ayanbasu@isical.ac.in	9433009630	Co-PI
4	Dr Indranil Saha	ICMR Centre on Non-Communicable Diseases	Scientist E	drsahaindranil@gmail.com	9830019016	Co-PI
5	Prof Biswabrata Pradhan	Indian Statistical institute	Professor	bis@isical.ac.in	9748858984	Co-PI
6	Dr CHANDRA DAS	Netaji Subhash Engineering College	Assistant Professor	daschandra08@gmail.com	9433506320	Co-PI
7	Dr PARTHA DE	Indian Statistical institute	ASSOCIATE SCIENTIST C	partha@isical.ac.in	9831321179	Co-PI
8	Dr Rabindranath Jana	Indian Statistical institute	Associate Scientist - B	rabindranathjana65@gmail.com	8961267319	Co-PI
9	Dr Prabir Kumar Chatterjee	Amader Haspatal	Medical Officer	prabirkc@yahoo.com	9433310060	Co-PI
10	Dr Satabdi Ghosh	Sports Authority of India (Bengaluru Office)	Exercise Physiologist	satabdicu@gmail.com	8910163145	Co-PI
11	Dr Arup Ranjan Mukhopadhyay	Indian Statistical institute	Senior Technical Officer	armukherjee@yahoo.co.in	9830855187	Co-PI
12	Dr sandip mitra	Indian Statistical institute	Associate Professor	sandipisi@gmail.com	7044218010	Co-PI
13	Prof Partha Pratim Majumder	Liver Foundation, West Bengal	Scientific Director	partha.nibmg@gmail.com	9831004230	Co-PI
14	Dr Gautam Das	Institute of Postgraduate Medical Education & Research	Professor	gautamdas_dr@yahoo.co.in	9830580728	Co-PI
15	Prof Manas Kumar Gumta	College of Medicine and Sagore Dutta Hospital	Professor	drmanasgumta@gmail.com	9830016397	Co-PI

Documents consideration

#	Proposal Id	Document Name	Is Applicable?	Uploaded Document	Remarks
1	2021-6467	Declaration & Attestation Form	Yes	View uploaded document	PI and Co-PI of host institute has signed, along with Head of Institute

Budget Details

Year	Institute Name	Manpower	Contingency	Equipment	Travel	Overhead Charges	Total Budget (Rs.)
Year:1	Indian Statistical institute	500,000.00	328,000.00	60,000.00	450,000.00	24,000.00	1,362,000.00

Budget Details

Year	Institute Name	Manpower	Contingency	Equipment	Travel	Overhead Charges	Total Budget (Rs.)
Year:2	Indian Statistical institute	186,000.00	20,000.00	0.00	20,000.00	6,000.00	232,000.00
Total(Rs.):		686,000.00	348,000.00	60,000.00	470,000.00	30,000.00	1,594,000.00

Budget Breakup Details (Staff/Manpower)

#	Budget Year	Institute	Designation	No. of Person(nos)	Require Month(nos)	Cost Per Person(Rs.)	Total Cost(Rs.)
1	Year: 1	Indian Statistical institute	Project Assistant	1	12	31,000	372,000.00
2	Year: 1	Indian Statistical institute	Junior Project Assistant (LDC)	4	2	16,000	128,000.00
3	Year: 2	Indian Statistical institute	Project Assistant	1	6	31,000	186,000.00
						Total (Rs.):	686,000.00

Budget Breakup Details (Contingency)

#	Budget Year	Institute	Contingency Name	Total Cost(Rs.)	Justification
1	Year: 1	Indian Statistical institute	A. Anti-SARS COVID-2 salivary IgA ELISA test for 480 cases to be done in-house by doctor team members (@ Rs 600/- per case on average) and Stationary goods, printing, computer consumables etc (@ Rs. 40000/- per annum) for 1 year	328,000.00	primary data collection
2	Year: 2	Indian Statistical institute	Stationary goods, printing, computer consumables etc (@ Rs. 40000/- per annum) for 0.5 year	20,000.00	printing
				Total (Rs.):	348,000.00

Budget Breakup Details (Equipment)

#	Budget Year	Institute	Equipment Name	Equipment Model	Equipment Manufacturer	Equipment Type	Total Cost(Rs.)	Justification
1	Year: 1	Indian Statistical institute	Laptop			Domestic	60,000.00	for data entry
							Total (Rs.):	60,000.00

Declaration

I hereby declare that the entries in this form and the additional particulars, if any, furnished herewith are true to the best of my knowledge and belief. I understand that in the event of my information being found false or incorrect at any stage, my project/proposal shall be liable to cancellation / termination without notice or any compensation in lieu thereof.



भारतीय सांख्यिकीय संस्थान INDIAN STATISTICAL INSTITUTE

203, बी. टी. रोड, कोलकाता - 700 108 / 203, B. T. Road, Kolkata- 700 108
(An Autonomous Body funded by Ministry of Statistics and Program Implementation, Govt)
(सांख्यिकी और कार्यक्रम कार्यान्वयन मंत्रालय द्वारा वित्तपोषित एक स्वायत्त निकाय, भारत सरकार)



No.PU/507/ADV/ 762/A

18 November 2022

ADVERTISEMENT

A walk-in-interview will be conducted on **05 December 2022 at 10:00 a.m.** with maintaining all precautionary measures to prevent the spread of COVID-19 global pandemic as directed by the Government of India in the Centre for Soft Computing Research, 1st Floor, R.A. Fisher Bhawan of the Indian Statistical Institute, Kolkata for the recruitment of **two (02) Project linked persons [one in Category 'A' (Project Assistant as per ICMR) and one in Category 'B' (Junior Project Assistant as per ICMR)]** purely on temporary basis to work for ICMR sponsored project titled "Unearthing the heterogeneity in virulence using both ICMR COVID-19 testing data and other primary data: A Data Mining Approach & Exploratory study from West Bengal" at the Centre for Soft Computing Research, Indian Statistical Institute, Kolkata

- Qualifications** : **Essential For Category 'A'**: M.Sc. in Microbiology/ Biochemistry/ Biotechnology/ Physiology/ Zoology/ any other relevant subject with good academic record.
Desirable For Category 'A': Candidates having at least one year experience in the area of virology/ microbiology.
Essential For Category 'B': M.Sc. or B.E./ B.Tech. in any relevant discipline with good academic record.
Desirable For Category 'B': Candidates having experience in data collection, data entry and data handling.
- Job profile** : **For Category 'A'**: The selected candidate will be required to collect and analysis appropriate samples under the supervision of relevant experts associated with the project.
For Category 'B': The selected candidate will be required to do socio-eco-demographic data collection, data entry and data handling under the supervision of relevant experts associated with the project.
- Pay** : **For Category 'A'**: ₹31000/- (Rupees thirty one thousand only) per month (consolidated).
For Category 'B': ₹16000/- (Rupees sixteen thousand only) per month (consolidated).
- Tenure of Appointment** : The tenure of appointments will initially be for **three months for Category 'A' and two month for Category 'B'** from the date of his/her joining the Institute which may be extended later/ terminated earlier, depending on availability of funds and performance of the candidates.
- Age (for both categories)** : Should not exceed 35 years as on 01 November 2022, with usual relaxation for SC/ST/OBC and differently abled candidates. Age relaxation may be given to outstanding candidates or candidates with relevant experience.

Candidates appearing for the interview will be required to bring their current resume **addressed to the Head, Centre for Soft Computing Research, Indian Statistical Institute stating (a) Name (In block letters), (b) Passport size photograph, (c) Permanent/ Present Address, (d) E-mail Address, (e) Telephone/Mobile No., (f) Parent's/Spouse's Name, (g) Date of birth, (h) Academic Qualifications (mentioning Board/ Council/University, year of passing, subject, percentage of marks obtained in each examination starting from 10th class), (i) Experience (if any), (j) Aadhaar Card/ Pan Card/ Voter Card, (k) SC/ST/OBC/Differently abled status along with originals and self attested copies of all documents/testimonials.** The original credentials should also be brought for verification. At the time of joining, selected candidates have to produce all relevant documents/testimonials in original for verification and a medical certificate of fitness from the Medical Officer of the Institute. Failing this, the institute will offer the position to the next candidate in the merit list prepared for this purpose. A resume with incomplete information or without supporting documents will be summarily rejected. Candidates having higher qualification and relevant experience are encouraged to apply. Candidates waiting for the final result may also apply. The Institute reserves the right not to appoint any of the above. This advertisement is also available on our website www.isical.ac.in/jobs.


(Dipti Prasad Mukherjee)
Deputy Director

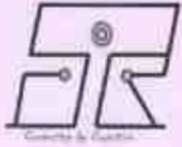
- Copy to :**
1. Head, Centre for Soft Computing Research
 2. Professor-in-Charge, Computer & Communication Sciences Division.
 3. Different Universities/Organisations.
 4. All Heads of Division/Departments/Sections/Units etc. for circulation amongst the workers and **NOTICE BOARD.**
 5. In-Charge, Despatch Section for arranging circulation accordingly.
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Center for Soft Computing Research: A National Facility

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फैक्स: +91 33 2578 8699/2577 3035 URL: <http://www.isical.ac.in/~scs>

Date: November 18, 2022

To
The Director
ISI

Sub: Request for advertisement of Project Linked Personnel (Project Assistant as per ICMR) and Junior Project Linked Personnel (Junior Project Assistant as per ICMR)

You may be aware of the fact that the Indian Council for Medical Research has approved a project titled "Unearthing the heterogeneity in virulence using both ICMR COVID-19 testing data and other primary data: A Data Mining Approach & Exploratory study from West Bengal" to Dr. Kuntal Ghosh in March 2022. Kindly note that there is a provision for recruitment of **Project Linked Personnel (Project Assistant as per ICMR)** and **Junior Project Linked Personnel (Junior Project Assistant as per ICMR)** under the above mentioned scheme.

In view of the above, we would like to advertise for **01** position each for Project Linked Personnel (Project Assistant as per ICMR) and Junior Project Linked Personnel (Junior Project Assistant as per ICMR) (total 2) under the said scheme. In this regard, I enclose a draft advertisement. Necessary fund is available in A/C. no. **E184**.

Kindly do the needful.

Thanking you,

Sincerely yours,

(S. S. Ray)
In-Charge

① Approved.
S. S. Ray 18/11/2022

CENTRE FOR SOFT COMPUTING		CAPITAL / REVENUE YEAR 22-23 Rs P.	
Acc. No.	E184	Cont. Bl. no.	NIL
Budget	5,00,000/-	Proposed Expd.	1,25,000/-
Date	16.11.22	Balance	3,75,000/-

K. Ghosh
18/11/22

13-11-22
S. S. Ray
18/11/2022

INDIAN STATISTICAL INSTITUTE
203 BARRACKPORE TRUNK ROAD
KOLKATA- 700 108

No. PU/ /ADV/C

Date: November , 2022

A walk-in-interview will be conducted on 5th December, 2022 at 10:00 a.m to work for ICMR sponsored project titled "Unearthing the heterogeneity in virulence using both ICMR COVID-19 testing data and other primary data: A Data Mining Approach & Exploratory study from West Bengal" at the Center for Soft Computing Research, ISI, Kolkata maintaining all preventive measures to prevent the spread of Covid-19 Global Pandemic as directed by the Government of India for the recruitment of following temporary positions.

1. PROJECT LINKED PERSONNEL (PROJECT ASSISTANT AS PER ICMR)

- No. of Positions** : One (01)
- Qualifications** : M.Sc in Microbiology / Biochemistry/Biotechnology/Physiology/Zoology/any other relevant subject with good academic record.
- Desirable** : Candidate having at least one year experience in the area of virology/microbiology
- Remuneration** : Rs. 31,000/- p.m. (consolidated)
- Tenure of Appointment** : The tenure of appointment will be for three months.
- Job Profile** : The selected candidate will be required to collect and analyse appropriate samples under the supervision of relevant experts associated with the project.
- Age** : The age limit is 35 years as on November 1, 2022 with usual relaxation for SC/ST/OBC and differently abled candidates. Age relaxation may be given to outstanding candidates or candidates with relevant experience.

2. JUNIOR PROJECT LINKED PERSONNEL (JUNIOR PROJECT ASSISTANT AS PER ICMR)

- No. of Positions** : One (01)
- Qualifications** : M.Sc or B.E/B..Tech in any relevant discipline with good academic record.
- Desirable** : Candidate having experience in data collection, data entry and data handling
- Remuneration** : Rs. 16,000/- p.m. (Consolidated)
- Tenure of Appointment** : The tenure of appointment will be for two months.
- Job Profile** : The selected candidate will be required to do socio-eco-demographic data collection, data entry and data handling under the supervision of relevant experts associated with the project.
- Age** : The age limit is 35 years as on November 1, 2022 with usual relaxation for SC/ST/OBC and differently abled candidates. Age relaxation may be given to outstanding candidates or candidates with relevant experience.

Eligible and interested candidates are required to appear in the interview with all relevant original documents and self-attested photocopies of all the documents/testimonials/ photo identity with current resume. The current resume (signed) will cover (a)Name (In block letters), (b)Parents'/Spouse's Name, (c) Gender, (d)Permanent and Present Address, (e)E-mail Address, (f)Phone/Mobile No., (g)Date of birth, (h)Academic Qualifications (mentioning Board/Council/University, year of passing, subjects, percentage of marks obtained in each examination starting from 10th class), (i) Experience and Publications (if any), (j)AADHAR Card No., (k)SC/ST/OBC/differently abled status. Candidates having higher qualification and relevant experience are encouraged to apply. Candidates waiting for the final result may also apply.

The Institute reserves the right not to appoint anyone in the above positions. This advertisement is also available in our website www.isical.ac.in/jobs.php.

Date:

(Dipti Prasad Mukherjee)
Deputy Director

Copy to:

1. In-charge, Center for Soft Computing Research
2. Different Universities/Organizations
3. All Heads of Division/Departments/Sections/Units etc. for circulation amongst the workers and NOTICE BOARD
4. In-charge, Despatch Section for arranging circulation accordingly
5. Director's Office



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MEDICAL RESEARCH
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भारतीय चिकित्सा अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार

Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

No. BMI/12(86)/2021
ID No.2021-6467

Dated: 28/3/22

To,

**The Deputy Director
Indian Statistical Institute
203, Barrackpore Trunk Road, Kolkata-700108**

Sub: - Sanction and budget allotment for the 1st Year new ad-hoc research schemes entitled-
"Unearthing the heterogeneity in virulence using both ICMR COVID-19 testing data and other
primary data: A Data Mining Approach & Exploratory study from West Bengal" under Prof. Kuntal
Ghosh, Associate Professor, Department of center for soft computing Research & Machine
Intelligence Unit, Indian Statistical Institute , west Bengal.

Sir,

1. The Director General, ICMR sanction the above-mentioned Project initially for a period of One year from 15.04.2022 to 14.04.2023 subject to extension up to the total duration specified in para 3(c) below.
2. The Director General, ICMR also sanction the budget allotment of Rs.13,02,840/- (Rupees Thirteen Lakh two Thousand Eight Hundred Forty Only) as detailed in the attached statement for the year 2022-23 subject to the condition that the grant will be utilized after following the provisions laid down in the GFRs-2017 & TA Rules. Please keep the funds in a separate Saving Bank account opened for ICMR funded Research Projects so that interest earned thereon is credited into this account.
3. The grant-in-aid will be given subject to the following conditions:
 - a) The payment of the grant will be made in lump-sum to the Head of the Institution. The first installment of the grant will be paid generally as soon as a report regarding the commencement of the project and appointment of the staff is received by the Council.
 - b) The staff appointed on the project should be paid as indicated in the budget statement attached. Joining report of the staff as well as Undertaking Part II may also send to this office.
 - c) The approved duration of the scheme is for 2 Years. The annual extension will be given after a review of the work done on the scheme during the previous year
 - d) Two copies of the annual progress report (with a soft copy also) of work done to be submitted to the Council every year after completion of ten months of the project, failure of submitting the report in time may lead to termination of the project.

Cont...

- e) The institute will maintain a separate account of the receipts and the expenditure incurred on the scheme. A utilization certificate and an audited statement of account pertaining to the grant may be furnished to ICMR for the period of 15.04.2022 to 14.03.2023.
- f) The next year grant will only be released after receipt of the Progress Report along with Utilization Certificate and Statement of Expenditure.
- g) The other terms and conditions will be followed as per the ICMR guidelines. The receipt of this letter may please be acknowledged.

Yours faithfully

Sr. Admin. Officer
for Director General.

RFC No. BMI/Adhoc/39/2021-22 dated 15.03.2022

Copy together with a copy of the budget statement forwarded for information to :-

1. Prof. Kuntal Ghosh, Associate Professor, Department of center for soft computing Research & Machine Intelligence Unit, Indian Statistical Institute , west Bengal.
2. Copy together with two copies of the budget statement forwarded to the Accounts Section V ICMR for information and necessary action. RFC No. BMI/Adhoc/39/2021-22
3. IRIS ID No.2021-6467

Sr. Admin. Officer
for Director General.

Sanction and budget allotment for the new schemes entitled:-“Unearthing the heterogeneity in virulence using both ICMR COVID-19 testing data and other primary data: A Data Mining Approach & Exploratory study from West Bengal” under Prof. Kuntal Ghosh, Associate Professor, Department of center for soft computing Research & Machine Intelligence Unit, Indian Statistical Institute , west Bengal.

**Budget statement
(15.04.2022 to 14.04.2023)**

S. No	Head	1 st Year
1	Manpower	
	Project Assistant-(one) @Rs. 31,000/- pm	3,72,000
	Junior Project Assistant- (four) @Rs.16,000/- pm x 2 months	1,28,000
	Project Assistant-(one) @ Rs.31,000/- pm x 6 months	--
2	Contingencies	3,28,000
3	Non Recurring (Equipment)	
4	Recurring	--
5	Travel	4,50,000
6	Overhead @3%	24,840
	Total	13,02,840

(Rupees Thirteen Lakh two Thousand Eight Hundred Forty Only)

RFC No. BMI/Adhoc/39/2021-22 dated 15.03.2022

DOS: 15.04.2022

Duration: Two Years

Sr. Admin. Officer
for Director General.

वी. रामलिंगस्वामी भवन, पोस्ट बॉक्स नं. 491,
अंसारी नगर, नई दिल्ली - 110 029, भारत
V. Ramalingaswami Bhawan, P.O. Box No. 491,
Ansari Nagar, New Delhi - 110 029, India

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+91-11-26589336 / 26588707
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MEDICAL RESEARCH
SINCE THE YEAR 1952

भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग, स्वास्थ्य और परिवार
कल्याण मंत्रालय, भारत सरकार
Indian Council of Medical Research
Department of Health Research, Ministry of Health
and Family Welfare, Government of India

No BMI/12(86)/2021

Dated: 28/3/22

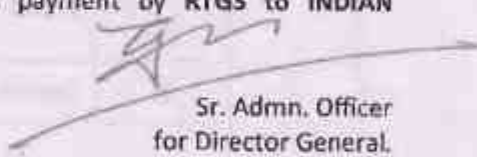
Sub: - Payment of 1st installment of the 1st year grant-in-aid for the research adhoc scheme entitled,- "Unearthing the heterogeneity in virulence using both ICMR COVID-19 testing data and other primary data: A Data Mining Approach & Exploratory study from West Bengal" under Prof. Kuntal Ghosh, Associate Professor, Department of center for soft computing Research & Machine Intelligence Unit, Indian Statistical Institute , west Bengal.

OFFICE MEMORANDUM

Reference this office letter No BMI/12(86)/2021, dated: 28/3/22

The Director-General, ICMR sanction the payment of Rs.13,02,840/- (Rupees Thirteen Lakh two Thousand Eight Hundred Forty Only) as the 1st installment of the 1st year grant for the period from 15.04.2022 to 14.03.2023 for incurring expenditure in connection with the above mentioned research project. The amount of Rs.13,02,840/- may be debited out of the funds allocated to the division of BMI for the above mentioned research scheme for the year 2021-22.

A formal bill for Rs.13,02,840/- is sent herewith for payment by RTGS to INDIAN STATISTICAL INSTITUTE.


Sr. Admn. Officer
for Director General.

Accounts Section-V, ICMR.

RFC No. BMI/Adhoc/39/2021-22 dated 15.03.2022 along with a formal bill of Rs. 15,08,291/- for necessary payment (Mandate from/ Cancelled cheque/ and PFMS form are enclosed).

Copy to:

1. The Deputy Director Indian Statistical Institute, west Bengal.
2. Prof. Kuntal Ghosh, Associate Professor, Department of center for soft computing Research & Machine Intelligence Unit, Indian Statistical Institute , west Bengal.

Sr. Admn. Officer
For Director General.



Government of West Bengal
Department of Science & Technology and Biotechnology
Vigyan Chetana Bhavan, 26/B DD Block, Sector-I, Salt Lake, Kolkata - 700 064, Ph : 033-2340 2767

No: 129 /WBSCST/F/0460/13

Date: 19.04.2024

From:

The Special Secretary to the Govt. of West Bengal

To:

Dr. Shilpi Bose Convener,

NSEC Institution's Innovation Council,

Coordinator, NSEC Incubation Center, Nodal Officer, ARIIA

& The Nodal Officer

IPR Cell, Netaji Subhash Engineering College,

Sub: Setting up of IPR Cell at the campus of your University

Sir,

Your proposal on setting up of IPR cell has been sanctioned and Rs.50,000/- has been disbursed from West Bengal State Council of Science and Technology (WBSCST) on 27th March, 2024 under this Department for the same. You are requested to send the UC and SoE of the fund utilized after setting up of the IPR cell at your institute after organizing one workshop and FDP programmes.

Following are the mandate activities of the Cell

- Mandate of IPR cell is to create awareness, target to file at least 10 Patents/ 10 file other forms of IPR (Design, Trademark/GI, Plant Variety Protection) within your institutes or the institute mentored by your nearby institutes, identify cutting edge technology from your area for Promotion and branding through Technology transfer and Commercialization through Technology Development and Adaptation Centre- TDAC of this Council.

Contd...p/2

- Mentoring local grass root innovators for final patenting
- Taking up IPR sensitization programmes in local colleges, ITI, Schools and sending the report to us
- Identification of granted patents for commercialization and sent to Patent Information Centre under WBCSST, DSTBT-GoWB
- Local technology promotion/ organizing idea /technology hunt
- Identification and recommending potential innovators to idea clinic organised by this department for branding the ideas and mentoring to next level
- Annual reporting to this Department for better functioning
- Special focus need to be taken to commercialization and market channel improvement, quality checking of GI products of your region.(List enclosed)

You are requested to collaborate / to take advice from Patent Information Centre, WBCSST, DSTBT regarding fruitful implementation of all IPR related activities.

You are also requested to acknowledge the receipt of the fund and send us the report of IPR cell on the above mentioned activities every year with a hard copy of **audited UC and SoE of the fund received** from this Council to Dr. Mahuya Hom Choudhury, Scientist C, Patent Information Centre, WBCSST, DSTBT, 26 B, DD block, Vigyan Chetana Bhavan, Salt Lake, Kolkata-700064 and scanned copy of UC and SoE to picwbcsst2023@gmail.com

Thanking you,

Yours faithfully,


(Dipanjan Bhattacharyya)

Special Secretary to the Govt. of West Bengal

&
Administrative Officer, WBCSST



IOT based Grid- microgrid integration and smart Energy management for uninterrupted electricity to the community

Reference No. : 432023000753

Saved By : Dr. Shampa De


[SERB Qualified Unique Identification Document: SQUID-1977-SD-8143]

Saved Date : 09-Apr-2023


Council of Scientific and Industrial Research
Human Resource Development Group
CSIR-A Special Call for Research Grants for Women Scientists (CSIR-ASPIRE)
under Extramural Research(EMR) Schemes

[Back \(welcome.php?page=proposal&propid=-/fsgECd6gfMnquZRddRaSKV3iekukcFGI-/QF5Ey2w==&step=step-4\)](http://welcome.php?page=proposal&propid=-/fsgECd6gfMnquZRddRaSKV3iekukcFGI-/QF5Ey2w==&step=step-4)

Proposal

 CSIR-ASPIRE: A Special Call for Research Grants for Women Scientists R&D Proposal Submitted			
1. CSIR Funding Scheme	CSIR-ASPIRE		
2. General area of the proposed research:	Engineering Sciences		
3. Institute to Administer the Grant	Netaji Subhash Engineering College [Private]		
*(Recognition/Affiliation Certificate is attached)			
4. Title of the Proposal	Modeling and characterization of novel TFETs for high efficiency ultra-low power circuits and sensor applications		
5. Details of Project Investigator(PI)			
Name:	Dr. Saheli Sarkhel	Department:	Electronics and Communication Engineering
Gender:	Female	Institute:	Netaji Subhash Engineering College
Date of Birth:	29-05-1986	City:	Kolkata
Position:	Assistant Professor	PIN:	700152
Email:	saheli.sarkhel@nsec.ac.in	State:	West Bengal
Mobile No.:	9051645157		
6. Highest Degree University & Date of Award:	Jadavpur University/2019		
7. Total Time to be devoted to project (in man months per year):	12		
8. Contact Details Co-PIs			
Name:	NIL	Name:	NIL
Email:		Email:	
Highest Degree:	NIL	Highest Degree:	NIL
Address:	NIL	Address:	NIL
9. Details of Research Scientistts actively engaged in the general area of the proposed research			



A Novel Design of a Compact, Portable and Multifunctional Air Purifier System to Eliminate Microbes and Viruses

File Number : SUR/2023/001760

Submitted By : Dr. Sujan Krishna Samanta
[SERB Qualified Unique Identification Document: SQUID-1975-SS-6833]
Submission Date : 09-Dec-2023

PROPOSAL DETAILS

(SUR/2023/001760)

Dr. Sujan Krishna Samanta

sujank.samanta@nsec.ac.in

Asst.Professor (Biomedical Engineering)

Netaji Subhash Engineering College

Technocity, panchpota, garia kolkata, Kolkata, West bengal-

700152

[College (Private)]

Technical Details :

Scheme :	State University Research Excellence (SERB SURE)		
Research Area :	Environmental Engineering (Engineering Sciences)		
Duration :	36 Months	Contact No :	+918240553172
Date of Birth :	14-Dec-1975		
Nationality :	INDIAN	Total Cost (INR) :	26,53,200

Project Summary :

The huge growth of microbes and viruses in the atmosphere has increased the demand for the creation of a unique device which can prevent human society from being infected by the deadly viruses and microbes. The IDSP-IHIP (Integrated Disease Surveillance Programme-Integrated Health Information Platform) has confirmed and reported the laboratory cases of airborne diseases by the States from January 2023 till 9th March 2023 as - (a) various subtypes of Influenza including H3N2: 1245 in January, 1307 in February & 486 in first 9 days of March 2023; (b) Acute Respiratory Illness/Influenza-like Illness (ARI/ILI): 397814 in January, 436523 in February & 133412 in first 9 days of March 2023; (c) Severe Acute Respiratory Illness (SARI): 7041 in January, 6919 in February & 1866 during the first 9 days of March 2023; and (d) Swine Flu (H1N1): 955 till 28th February 2023 from Tamil Nadu (545), Maharashtra (170), Gujarat (74), Kerala (42) & Punjab (28). The proposed Air Quality Index (AQI) sensor-based air purifier system with alarm will indicate microbe density in the air and have a 4-way attack on microbes which consists of: a) Far UVC Ray b) Plasma Ion Generator c) Silver Nano Particles (AgNPs) Diffuser d) Warm Humidified Carbon Dioxide This work aims to develop a compact portable medical electronic device not only to destroy airborne microbes but also to increase the immunity of the human body. This will find wide applications in Residential Rooms, Hospitals, Restaurants, Vehicles, etc. Far UVC is used in the Project in order to eradicate microbes without damaging the normal tissues in the body. The Plasma Ion Generator will generate sufficient ions: oxygen ion (O²⁻), hydrogen ion (H⁺) and hydroxyl ion (OH⁻). In addition to improving the quality of the air, negative hydroxyl radical (OH⁻) will combine with positive (H⁺) ion of microbes and viruses to breakdown their structure. The Silver Nano Particles (AgNPs) in the diffuser are very penetrating and sensitive in destroying the microbial components. The AgNPs gel on heating through thermostat control will start fume generation and disperse in the environment. This mixed air entering the nasopharyngeal cortex will help to attack the microbes in the upper respiratory tract and will trigger T-cell production. This enhanced activity of T-cells will improve the immunity of the human body and will be considered an immunological booster. AgNPs itself famous for their natural antimicrobial and antibacterial efficacy and on the other hand, AgNPs will enhance the growth of good bacteria as silver does not disrupt the natural diversity in the gut microbiome. The Warm Humidified CO₂ generator in control low dose will destroy the microbes inside the body. A low dose of carbon dioxide generally will suppress the activity of the viruses including SARS-Cov2 present in the body and at the same time it will act as an anti-oxidant and will increase the oxygenated blood within the body.

Objectives :

- Develop a compact, low-cost portable medical electronic device based on an AQI sensor with remote control capability and alarm to attack microbes in four directions and increase immunity overall.
- Far UVC destroys microbes without damaging normal tissues in the body.
- Plasma ion generator generates (OH⁻) ions, which bind to the positive (H⁺) ions of microbes and viruses to break them down.
- Nanoparticles of silver from the diffuser bind with spikes of the virus and destroy them.
- Warm Humidified CO₂ generator in low doses to suppress any microbial element.
- Digital AQI Sensor to quantify the amount of microbes present in the rooms or any closed chambers.

Keywords :

Far UVC, Silver Nano Particles, Plasma Ion, Diffuser, AQI, HEPA filter

Expected Output and Outcome of the proposal :

Expected Output: We are expecting a superb anti-microbial and anti-viral air purifier system through a 4-way attack on microbes. The concentration of airborne microbes will be decreased substantially by 99.9%. The device will also trigger the immune system and will serve as immunity booster. The device will operate at regular voltage, consume low current & will be ideal solution in the field of air purifiers. The applications are: 1. Far UVC Ray ranging from 200 to 222 nm at low dose of 2 mj/cm². 2. Warm Humidified Carbon Dioxide at 4 to 14%. 3. Silver Nano Particles at optimal oral intake of 70-90 µg/day (as per WHO) or 10 gm (for the whole life). 4. Plasma ion at 25000 to 30,000 per cm³ per second. Expected Outcome:

- Trained manpower: 1 Ph.D. (Research Scholar), 1 M.Tech student, and 1-2 B.Tech students
- Journal publications (in reputed scientific journals): 2-3
- Conference publications: 2-4
- Patent filing: 1-2
- Developing a compact portable medical electronic device and collaborating closely with the industries to commercialize the product.

Any other relevant information:

Design and development of an indigenous prototype Air Purifier- 4 ways attack on microbes and probable collaboration for commercialization.

Suitability of the proposed work in major national initiatives of the Government:

Make in India, Swasth Bharat, Startup India

Theme of Proposed Work:

Health, Environment

Collaboration Details for last 5 Years :

Planned Collaboration for the proposed work with any foreign scientist/ institution ?

No