



**SRI SIVASUBRAMANIYA NADAR COLLEGE OF  
ENGINEERING**

(An Autonomous Institution)  
Kalavakkam – 603 110

**SELF STUDY REPORT**

3.2.1 Research funding received by the institution and its faculties through Government and non-government sources such as industry, corporate houses, international bodies for research project, endowment research chairs during the last five years

Submitted to

**The National Assessment and Accreditation Council**

**February 2024**

03.03.2023  
The Principal  
Sri Sivasubramaniya Nadar College of Engineering,  
Kalavakkam , Chennai – 603110

Sir/Madam,

Sub: TNSCST – Student Project Scheme – 2022-2023 – approval intimation–grant  
release- reg.

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With respect to the above scheme, the list of projects approved by the State Council is enclosed along with terms and conditions. You are requested to adhere to terms and conditions such as submission of UC and Seminar Paper on Time.

|    |                                                                                                                                                                     |                                                                                                 |                                                   |          |               |            |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------|----------|---------------|------------|
| 1. | Dr. Sundareswaran R,<br>Associate Professor,<br>Department of Mathematics,<br>Sri Sivasubramaniya Nadar<br>College of Engineering,<br>Kalavakkam , Chennai - 603110 | Analysing diabetic<br>neuropathy - A graph<br>theoretic approach                                | R Dhanush Babu,<br>M Vahini<br>Shakti Varsha      | MS-0733  | The Principal | Rs 7500/-  |
| 2. | Mr.Pandikumar M,<br>Associate Professor,<br>Department of EEE,<br>Sri Sivasubramaniya Nadar<br>College of Engineering,<br>Kalavakkam, Chennai – 603 110             | Design and<br>development of low-<br>cost solar powered<br>electric vehicle                     | R Sriganesh,<br>S Rajadurai,                      | EEE-1852 | The Principal | Rs 7500/-  |
| 3. | Dr.P.Sangeetha,<br>Associate Professor,<br>Department of Civil Engineering,<br>SSN College of Engineering,<br>Kalavakkam, Chennai - 603 110.                        | Structural Behaviour<br>of Deficient Hollow<br>Steel Stub Columns<br>Strengthened using<br>GFRP | T.R.Sathya Shree,<br>S.N.Rakshana,<br>S. Sadhana, | ECV-418  | The Principal | Rs 7500/-  |
|    |                                                                                                                                                                     |                                                                                                 |                                                   |          |               | Rs 22500/- |

Herewith enclosed the cheque for the approved grant and disburse the grant to the concerned students through the guides at the earliest

Kindly send the utilisation certificate (format enclosed) and seminar paper (Ref.T&C) on completion of the project.

Thanking you,

Yours faithfully,

  
Member Secretary.

- Encl: a) Terms & Conditions (T&C)  
b) Format of Utilisation Certificate (UC)  
c) Cheque for Rs.22500/- Cheque No:575036 dt.03.03.2023

Copy to: Individual Guides

To Mr RG  
\* cheque to accounts  
\* info to faculty concerned  
14/3



Branch : DOTE CAMPUS  
DOTE OFFICE BUILDINGS  
GUINDY, CHENNAI  
IFS Code : IDIB000D050

A/c. Payee Only

दिनांक  
Date

VALID FOR THREE MONTHS ONLY  
02 02 2023  
D D M M Y Y Y Y

PAY The Principal, SSN College of Engineering, Kalavakkam, OR BEARER  
RUPEES रुपये Twenty Two Thousand five Hundred only Chennai या धारक को  
अदा करें ₹ 22,500/-

SB खा. से  
A/c. No. 479135159

FOR MEMBER SECRETARY, TAMILNADU STATE COUNCIL SCIENCE & TECHNOLOGY

CBS Code: 01636

992000095

PAYABLE AT PAR AT ALL OUR BRANCHES

AUTHORISED SIGNATORY  
Please sign above

⑈ 575036⑈ 600019119⑈ 135159⑈ 31

## TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

DOTe campus, Chennai-600 025

### STUDENT PROJECT SCHEME 2022-2023

#### Terms and Conditions for the granted SPS projects

1. Every sanctioned project will be given a Project code Number. Please refer to this number while corresponding with TNSCST.
2. The project team **SHOULD NOT** change the topic of the project and should not deviate from the objectives of the sanctioned proposal. In the event of any such changes, sponsoring will be treated as canceled and the college should return the sanctioned amount to TNSCST.
3. The sanctioned projects should be completed and the reports should be submitted before the end of **MAY 2023**.
4. On completion of the project, a soft copy (CD) of the final project report and **TWO** copies of 2-3 page seminar paper (500 words-MS Word format), utilization certificate (UC) and statement of expenditure (SE) should be sent to **The Member Secretary, Tamilnadu State Council For Science and Technology, DOTE Campus, CHENNAI-600 025**.
5. The seminar paper will be included in the form of PROCEEDINGS which will be brought out during the Seminar cum Exhibition, only for those who submit the **UC & SE**.
6. The Utilization Certificate and Statement of Expenditure should be countersigned by the GUIDE, HOD and Principal/Registrar with an official seal as the case may be.
7. The guides are responsible for the timely submission of SEMINAR PAPER, UC and SE.
8. It is mandatory for the project team (**anyone student**) should present and exhibit the findings before the experts in the Seminar cum Exhibition which will be organized during **JULY / AUGUST 2023**.
9. During the Seminar cum Exhibition, "the best project award and certificate" will be presented to the outstanding projects and completion certificates to all.





**TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**  
DOTE CAMPUS, CHENNAI - 600 025

**STUDENT PROJECT SCHEME 2022-2023**  
**UTILISATION CERTIFICATE**

(TWO COPIES)

1. Name of the guide and address :

2. Name of the student(s) :

3. Title of the project :

4. Project code :

It is certified that a sum of Rs..... (Rupees )  
sanctioned by the Council for carrying out above mentioned student project has been  
utilized for the purpose for which it was sanctioned and sum of Rs.....  
remaining unutilized is refunded.

Signature of the Guide

Signature of the HOD

Signature of the  
REGISTRAR / PRINCIPAL / D  
with seal



**SCIENCE & ENGINEERING RESEARCH BOARD(SERB)**

(A statutory body of the Department of Science &amp; Technology, Government of India)

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

Dated: 08 June, 2022

**ORDER**

Subject: Research project entitled **EXPERIMENTAL ANALYSIS AND OPTIMIZATION OF ELECTRIC FIELD DISTRIBUTION AROUND POLYMERIC INSULATORS IN EXTRA HIGH VOLTAGE TRANSMISSION LINES** under the guidance of Dr. Usha K, Electrical and Electronics, Sri Sivasubramaniya Nadar College of Engineering, Old mahabalipuram road, kalavakkam, Chennai, Tamil nadu-603110.

1. In continuation of SERB's sanction order No. SPG/2021/003623 dated 08 June, 2022, sanction of the competent authority is hereby accorded to the payment of a sum of **Rs.614700/-** under 'Grants-in-aid General' to Sri Sivasubramaniya Nadar College Of Engineering, Old Mahabalipuram Road, Kalavakkam, Chennai, Tamil Nadu-603110 being the grant for the financial year 2022-2023 for implementation of the above said project.

2. Sanction of the grant is subject to the conditions as detailed in Terms & Conditions available at the website (www.serb.gov.in) and as mentioned in the sanction order of even number dated 08 June, 2022.

3. As this is the first grant being released under 'Grants-in-aid General' for the project, no previous U/C is required.

4. The expenditure involved is debitable to Fund for Science & Engineering Research (FSER) This release is being made under SERB POWER Grant (General).

5. The Sanction has been issued with the approval of the competent authority on **07 June, 2022** and vide Diary No. **SERB/F/1371/2022-2023** dated **08 June, 2022**.

6. The release amount of **Rs. 614700/-** (Rupees Six Lakh Fourteen Thousand Seven Hundred only) will be drawn by the Under Secretary of the SERB and will be disbursed by means of RTGS transaction as per their Bank details given below:

|                        |                                                                                                          |
|------------------------|----------------------------------------------------------------------------------------------------------|
| PFMS Unique Code       | SSNCE                                                                                                    |
| Account Name           | THE PRINCIPAL, SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING                                          |
| Account Number         | 158100710400509                                                                                          |
| Bank Name & Branch     | TAMILNAD MERCANTILE BANK LTD THIRUVANMIYUR BRANCH NO,3 THIRUVALLUVAR SALAI, THIRUVANMIYUR, CHENNA 600041 |
| IFSC/RTGS Code         | TMBL000015                                                                                               |
| Email id of A/C Holder | principal@ssn.edu.in                                                                                     |
| Email id of PI         | ushak@ssn.edu.in                                                                                         |

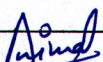
*for* (Dr. Monika Agarwal)  
Scientist F  
monika@serb.gov.in

To,  
Under Secretary  
SERB, New Delhi

Copy forwarded for information and necessary action to: -

|    |                                                                                          |
|----|------------------------------------------------------------------------------------------|
| 1. | The Principal Director of Audit, A.G.C.R.Building, IIIrd Floor I.P. Estate, Delhi-110002 |
| 2. | Sanction Folder, SERB, New Delhi.                                                        |
| 3. | File Copy                                                                                |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. | <p><b>Dr. Usha K</b><br/> <b>Electrical and Electronics</b><br/> <b>Sri Sivasubramaniya Nadar College of Engineering , Old mahabalipuram road, kalavakkam, Chennai, Tamil nadu-603110</b><br/> <b>Email: ushak@ssn.edu.in</b><br/> <b>Mobile: 919677238170</b><br/> (Start date of the project may be intimated by name to the undersigned. For guidance, terms &amp; Conditions etc. Please visit <a href="http://www.serb.gov.in">www.serb.gov.in</a>.)</p> |
| 5. | <p><b>PRINCIPAL,</b><br/> <b>Sri Sivasubramaniya Nadar College Of Engineering, Old Mahabalipuram Road, Kalavakkam</b><br/> <br/> (Receipt of Grant may be intimated by name to the undersigned)</p>                                                                                                                                                                                                                                                           |

  
**(Dr. Monika Agarwal)**  
Scientist F  
monika@serb.gov.in



The updated RTGS details of the Sri Sivasubramaniya Nadar College of Engineering , Old mahabalipuram road, kalavakkam, Chennai, Tamil nadu-603110 is as below:

|                           |                                                                                                             |
|---------------------------|-------------------------------------------------------------------------------------------------------------|
| PFMS<br>Unique Code       | SSNCE ✓                                                                                                     |
| Account<br>Name           | <b>THE PRINCIPAL, SRI SIVASUBRAMANIYA NADAR COLLEGE OF<br/>ENGINEERING</b> ✓                                |
| Account<br>Number         | <b>158100710400509</b> ✓                                                                                    |
| Bank Name<br>& Branch     | TAMILNAD MERCANTILE BANK LTD THIRUVANMIYUR BRANCH NO.3<br>THIRUVALLUVAR SALAI, THIRUVANMIYUR, CHENNA 600041 |
| IFSC/RTGS<br>Code         | TMBL0000158 ✓                                                                                               |
| Email id of<br>A/C Holder | principal@ssn.edu.in ✓                                                                                      |

*Principal*  
*29/06/2022*



संख्या 11(1)/2022-HCC(TDIL)  
No.....

दिनांक 18.02.2022  
Date.....

ADMINISTRATIVE APPROVAL

Subject : Administrative Approval for implementation of the Project '**Speech technologies in Indian languages**' under the Project titled 'National Language Translation Mission (NLTM) : BHASHINI'.

Implementing Agency: IIT Madras as (Consortium Leader), And IIIT-Hyderabad, IIT Kanpur, IIT Hyderabad, IISc Bangalore, NITK-Surathkal, CDAC Mumbai, IIT Dharwad, NIT Goa, IIT Mandi, IIT Guwahati, CDAC Kolkata, NIT Manipur, IIIT Sri City, SNU Chennai, IIT-Kharagpur, DA-IICT Gandhinagar, SSNCE Chennai, KLEF Vaddeswaram (Consortium Members).

The undersigned is directed to refer to this Ministry's letter of No.11(14)/2018-HCC(TDIL) dated 13.10.2021 conveying the Administrative Approval for the implementation of the Project titled 'National Language Translation Mission (NLTM) : BHASHINI' by Digital India Corporation (DIC), C-DAC, R&D Institutions for research through call for proposals and Other Implementing Agencies (To be identified) with the total outlay of the project of Rs. 495.51 Crore (Rupees four hundred ninety-five crore fifty one lakh only) as Grants-in-aid from Ministry of Electronics and Information Technology (MeitY). The duration of the projects is 36 months. The start of the Mission will be the date of the first release of Grant-in-aid. However, disbursement may go beyond duration of the Mission.

2. Now, the undersigned is directed to convey the Administrative Approval for the implementation of the sub-project namely '**Speech technologies in Indian languages**' under the Project titled 'National Language Translation Mission (NLTM) : BHASHINI' to be implemented by IIT Madras as (Consortium Leader), And IIIT-Hyderabad, IIT Kanpur, IIT Hyderabad, IISc Bangalore, NITK-Surathkal, CDAC Mumbai, IIT Dharwad, NIT Goa, IIT Mandi, IIT Guwahati, CDAC Kolkata, NIT Manipur, IIIT Sri City, SNU Chennai, IIT-Kharagpur, DA-IICT Gandhinagar, SSNCE Chennai, KLEF Vaddeswaram as consortium members at the total outlay of the project is Rs. 50,65,47,00/- (Rupees fifty crore sixty-five lakh forty-seven thousand only) as Grants-in-aid from Ministry of Electronics and Information Technology (MeitY) for a period of 03 years. The details of the project are at Annexure- I2.

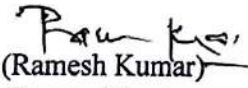
3. The standard terms and conditions governing the Grants-in-aid are enclosed at Annexure II.

*Hema*

Hema A Murthy  
Professor  
Dept of CSE  
IIT Madras 600036



4. This issues with the approval of Secretary, MeitY vide computer no. 3083369 dated 18.02.2022 and concurrence of Integrated Finance Division, MeitY vide computer no. 3083369 dated 17.02.2022.

  
(Ramesh Kumar)  
Deputy Director

Copy to:

1. Pay & Accounts Officer, Pay & Accounts Office. MeitY.
2. Office of Principal Director of Audit, Finance and Communication, Shamnath Marg, Civil Lines, Delhi – 110 054.
3. Finance Division. MeitY.
4. DDO, MeitY.
5. Chief Investigator, Co-Investigators and Head of Implementing Agencies of the Projects.
6. Economic Advisor, MeitY.
7. Shri Vijay Kumar, Scientist 'F', MeitY.
8. Shri Rajeshwar Singh Janwar, Scientist 'E', MeitY.
8. Shri Bharat Gupta, Scientist 'D', MeitY and Sanction File.





Hema A Murthy  
Professor  
Dept of CSE  
IIT Madras 600036



**Annexure – I** to the Administrative Approval No. 11(1)/2022-HCC(TDIL) dated 18.02.2022.

|    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | <b>Title of Project:</b>        | Speech technologies in Indian languages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. | <b>Implementation Agencies:</b> | IIT Madras as Consortium Leader,<br><br>And<br><br>IIIT-Hyderabad, IIT Kanpur, IIT Hyderabad, IISc Bangalore, NITK-Surathkal, CDAC Mumbai, IIT Dharwad, NIT Goa, IIT Mandi, IIT Guwahati, CDAC Kolkata, NIT Manipur, IIIT Sri City, SNU Chennai, IIT-Kharagpur, DA-IICT Gandhinagar, SSNCE Chennai, KLEF Vaddeswaram – Consortium Members.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. | <b>Chief Investigator:</b>      | Prof. Hema A Murthy<br>Computer Science and Engineering Dept.<br>IIT Madras Chennai<br>And<br>C V Jawahar (IIIT-Hyderabad), Vipul Arora (IIT Kanpur), K Sri Rama Murty (IITHyderabad), Sriram Ganapathy (IISc Bangalore), Deepu Vijayasanen (NITK-Surathkal), Pranaw Kumar (CDAC Mumbai), S R Mahadeva Prasanna (IIT Dharwad), T. Veena (NIT Goa), A. D. Dileep (IIT Mandi), Padmanabhan R (IIT Mandi), Prasanta Kumar Ghosh (IISc Bangalore), Preethi Jyothi (IIT Bombay), Rohit Sinha (IIT Guwahati), Joyanta Basu (CDAC Kolkata), Y Jina Chanu (NIT Manipur), Achintya Kumar Sarkar (IIIT Sri City), T. Nagarajan (SNU Chennai), K Sreenivasa Rao (IIT-Kharagpur), Hemant A Patil (DA-IICT Gandhinagar), P Vijayalakshmi (SSNCE Chennai), Suryakanth V Gangashetty (KLEF Vaddeswaram) |



Hema A Murthy  
Professor  
Dept of CSE  
IIT Madras 600036



| Annexure X: Budget (R&D SNU: Prosody Modeling) in lakhs of rupees |              |              |              |               | Annexure X: Budget (R&D IITKgp: Prosody Modeling) in lakhs of rupees |              |              |               |
|-------------------------------------------------------------------|--------------|--------------|--------------|---------------|----------------------------------------------------------------------|--------------|--------------|---------------|
| Head                                                              | Year 1       | Year 2       | Year 3       | Total         | Year 1                                                               | Year 2       | Year 3       | Total         |
| Equipment**                                                       | 8.50         | 0.00         | 0.00         | 8.50          | 8.50                                                                 | 0.00         | 0.00         | 8.50          |
| Manpower*                                                         | 25.00        | 25.00        | 25.00        | 75.00         | 25.00                                                                | 25.00        | 25.00        | 75.00         |
| Consumables                                                       | 1.25         | 1.25         | 1.25         | 3.75          | 1.25                                                                 | 1.25         | 1.25         | 3.75          |
| Travel                                                            | 1.00         | 1.00         | 1.00         | 3.00          | 1.00                                                                 | 1.00         | 1.00         | 3.00          |
| Contingency                                                       | 0.50         | 0.50         | 0.50         | 1.50          | 0.50                                                                 | 0.50         | 0.50         | 1.50          |
| Overhead (8% excl. equip)                                         | 2.22         | 2.22         | 2.22         | 6.66          | 2.22                                                                 | 2.22         | 2.22         | 6.66          |
| <b>Total</b>                                                      | <b>38.47</b> | <b>29.97</b> | <b>29.97</b> | <b>98.410</b> | <b>38.47</b>                                                         | <b>29.97</b> | <b>29.97</b> | <b>98.410</b> |

| Annexure XI: Budget (R&D DAICT: Assistive Speech Technologies) in lakhs of rupees |              |              |              |              | Annexure XI: Budget (R&D SSNCE: Assistive Speech Technologies) in lakhs of rupees |              |              |              |              |
|-----------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|-----------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|
| Head                                                                              | Year 1       | Year 2       | Year 3       | Total        | Head                                                                              | Year 1       | Year 2       | Year 3       | Total        |
| Equipment*                                                                        | 7.50         | 0.00         | 0.00         | 7.50         | Equipment*                                                                        | 7.50         | 0.00         | 0.00         | 7.50         |
| Manpower*                                                                         | 21.00        | 21.00        | 21.00        | 63.00        | Manpower*                                                                         | 21.00        | 21.00        | 21.00        | 63.00        |
| Consumables                                                                       | 1.00         | 1.00         | 1.00         | 3.00         | Consumables                                                                       | 1.00         | 1.00         | 1.00         | 3.00         |
| Travel                                                                            | 1.00         | 1.00         | 1.00         | 3.00         | Travel                                                                            | 1.00         | 1.00         | 1.00         | 3.00         |
| Contingency                                                                       | 1.00         | 1.00         | 1.00         | 3.00         | Contingency                                                                       | 1.00         | 1.00         | 1.00         | 3.00         |
| Overhead(8% excl. equip)                                                          | 1.92         | 1.92         | 1.92         | 5.76         | Overhead(8% excl. equip)                                                          | 1.92         | 1.92         | 1.92         | 5.76         |
| <b>Total</b>                                                                      | <b>33.42</b> | <b>25.92</b> | <b>25.92</b> | <b>85.26</b> | <b>Total</b>                                                                      | <b>33.42</b> | <b>25.92</b> | <b>25.92</b> | <b>85.26</b> |

| Annexure XII: Budget (R&D KLU: Speech Quality Control) in lakhs of rupees |        |        |        |       |
|---------------------------------------------------------------------------|--------|--------|--------|-------|
| Head                                                                      | Year 1 | Year 2 | Year 3 | Total |
| Minor Equipments**<br>(From Minor Equipments Table)                       | 16.00  | -      | -      | 16.00 |

*Hema*

Hema A Murthy  
Professor  
Dept of CSE  
IIT Madras 600036



संख्या 11(1)/2022-HCC(TDIL)  
No.....

दिनांक 18.02.2022  
Date.....

ADMINISTRATIVE APPROVAL

Subject : Administrative Approval for implementation of the Project '**Speech technologies in Indian languages**' under the Project titled 'National Language Translation Mission (NLTM) : BHASHINI'.

Implementing Agency: IIT Madras as (Consortium Leader), And IIIT-Hyderabad, IIT Kanpur, IIT Hyderabad, IISc Bangalore, NITK-Surathkal, CDAC Mumbai, IIT Dharwad, NIT Goa, IIT Mandi, IIT Guwahati, CDAC Kolkata, NIT Manipur, IIIT Sri City, SNU Chennai, IIT-Kharagpur, DA-IICT Gandhinagar, SSNCE Chennai, KLEF Vaddeswaram (Consortium Members).

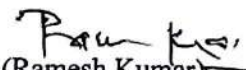
The undersigned is directed to refer to this Ministry's letter of No.11(14)/2018-HCC(TDIL) dated 13.10.2021 conveying the Administrative Approval for the implementation of the Project titled 'National Language Translation Mission (NLTM) : BHASHINI' by Digital India Corporation (DIC), C-DAC, R&D Institutions for research through call for proposals and Other Implementing Agencies (To be identified) with the total outlay of the project of Rs. 495.51 Crore (Rupees four hundred ninety-five crore fifty one lakh only) as Grants-in-aid from Ministry of Electronics and Information Technology (MeitY). The duration of the projects is 36 months. The start of the Mission will be the date of the first release of Grant-in-aid. However, disbursement may go beyond duration of the Mission.

2. Now, the undersigned is directed to convey the Administrative Approval for the implementation of the sub-project namely '**Speech technologies in Indian languages**' under the Project titled 'National Language Translation Mission (NLTM) : BHASHINI' to be implemented by IIT Madras as (Consortium Leader), And IIIT-Hyderabad, IIT Kanpur, IIT Hyderabad, IISc Bangalore, NITK-Surathkal, CDAC Mumbai, IIT Dharwad, NIT Goa, IIT Mandi, IIT Guwahati, CDAC Kolkata, NIT Manipur, IIIT Sri City, SNU Chennai, IIT-Kharagpur, DA-IICT Gandhinagar, SSNCE Chennai, KLEF Vaddeswaram as consortium members at the total outlay of the project is Rs. 50,65,47,00/- (Rupees fifty crore sixty-five lakh forty-seven thousand only) as Grants-in-aid from Ministry of Electronics and Information Technology (MeitY) for a period of 03 years. The details of the project are at Annexure- I2.

3. The standard terms and conditions governing the Grants-in-aid are enclosed at Annexure II.



4. This issues with the approval of Secretary, MeitY vide computer no. 3083369 dated 18.02.2022 and concurrence of Integrated Finance Division, MeitY vide computer no. 3083369 dated 17.02.2022.

  
(Ramesh Kumar)  
Deputy Director

Copy to:

1. Pay & Accounts Officer, Pay & Accounts Office. MeitY.
2. Office of Principal Director of Audit, Finance and Communication, Shamnath Marg, Civil Lines, Delhi – 110 054.
3. Finance Division. MeitY.
4. DDO, MeitY.
5. Chief Investigator, Co-Investigators and Head of Implementing Agencies of the Projects.
6. Economic Advisor, MeitY.
7. Shri Vijay Kumar, Scientist 'F', MeitY.
8. Shri Rajeshwar Singh Janwar, Scientist 'E', MeitY.
8. Shri Bharat Gupta, Scientist 'D', MeitY and Sanction File.





Hema A Murthy  
Professor  
Dept of CSE  
IIT Madras 600036

**Annexure – I** to the Administrative Approval No. 11(1)/2022-HCC(TDIL) dated 18.02.2022.

|    |                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | <b>Title of Project:</b>        | Speech technologies in Indian languages                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2. | <b>Implementation Agencies:</b> | IIT Madras as Consortium Leader,<br><br>And<br><br>IIIT-Hyderabad, IIT Kanpur, IIT Hyderabad, IISc Bangalore, NITK-Surathkal, CDAC Mumbai, IIT Dharwad, NIT Goa, IIT Mandi, IIT Guwahati, CDAC Kolkata, NIT Manipur, IIIT Sri City, SNU Chennai, IIT-Kharagpur, DA-IICT Gandhinagar, SSNCE Chennai, KLEF Vaddeswaram – Consortium Members.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. | <b>Chief Investigator:</b>      | Prof. Hema A Murthy<br>Computer Science and Engineering Dept.<br>IIT Madras Chennai<br>And<br>C V Jawahar (IIIT-Hyderabad), Vipul Arora (IIT Kanpur), K Sri Rama Murty (IITHyderabad), Sriram Ganapathy (IISc Bangalore), Deepu Vijayasanen (NITK-Surathkal), Pranaw Kumar (CDAC Mumbai), S R Mahadeva Prasanna (IIT Dharwad), T. Veena (NIT Goa), A. D. Dileep (IIT Mandi), Padmanabhan R (IIT Mandi), Prasanta Kumar Ghosh (IISc Bangalore), Preethi Jyothi (IIT Bombay), Rohit Sinha (IIT Guwahati), Joyanta Basu (CDAC Kolkata), Y Jina Chanu (NIT Manipur), Achintya Kumar Sarkar (IIIT Sri City), T. Nagarajan (SNU Chennai), K Sreenivasa Rao (IIT-Kharagpur), Hemant A Patil (DA-IICT Gandhinagar), P Vijayalakshmi (SSNCE Chennai), Suryakanth V Gangashetty (KLEF Vaddeswaram) |



Hema A Murthy  
Professor  
Dept of CSE  
IIT Madras 600036



| Annexure X: Budget (R&D SNU: Prosody Modeling) in lakhs of rupees |              |              |              |               | Annexure X: Budget (R&D IITKgp: Prosody Modeling) in lakhs of rupees |              |              |               |
|-------------------------------------------------------------------|--------------|--------------|--------------|---------------|----------------------------------------------------------------------|--------------|--------------|---------------|
| Head                                                              | Year 1       | Year 2       | Year 3       | Total         | Year 1                                                               | Year 2       | Year 3       | Total         |
| Equipment**                                                       | 8.50         | 0.00         | 0.00         | 8.50          | 8.50                                                                 | 0.00         | 0.00         | 8.50          |
| Manpower*                                                         | 25.00        | 25.00        | 25.00        | 75.00         | 25.00                                                                | 25.00        | 25.00        | 75.00         |
| Consumables                                                       | 1.25         | 1.25         | 1.25         | 3.75          | 1.25                                                                 | 1.25         | 1.25         | 3.75          |
| Travel                                                            | 1.00         | 1.00         | 1.00         | 3.00          | 1.00                                                                 | 1.00         | 1.00         | 3.00          |
| Contingency                                                       | 0.50         | 0.50         | 0.50         | 1.50          | 0.50                                                                 | 0.50         | 0.50         | 1.50          |
| Overhead (8% excl. equip)                                         | 2.22         | 2.22         | 2.22         | 6.66          | 2.22                                                                 | 2.22         | 2.22         | 6.66          |
| <b>Total</b>                                                      | <b>38.47</b> | <b>29.97</b> | <b>29.97</b> | <b>98.410</b> | <b>38.47</b>                                                         | <b>29.97</b> | <b>29.97</b> | <b>98.410</b> |

| Annexure XI: Budget (R&D DAICT: Assistive Speech Technologies) in lakhs of rupees |              |              |              |              | Annexure XI: Budget (R&D SSNCE: Assistive Speech Technologies) in lakhs of rupees |              |              |              |              |
|-----------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|-----------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|
| Head                                                                              | Year 1       | Year 2       | Year 3       | Total        | Head                                                                              | Year 1       | Year 2       | Year 3       | Total        |
| Equipment*                                                                        | 7.50         | 0.00         | 0.00         | 7.50         | Equipment*                                                                        | 7.50         | 0.00         | 0.00         | 7.50         |
| Manpower*                                                                         | 21.00        | 21.00        | 21.00        | 63.00        | Manpower*                                                                         | 21.00        | 21.00        | 21.00        | 63.00        |
| Consumables                                                                       | 1.00         | 1.00         | 1.00         | 3.00         | Consumables                                                                       | 1.00         | 1.00         | 1.00         | 3.00         |
| Travel                                                                            | 1.00         | 1.00         | 1.00         | 3.00         | Travel                                                                            | 1.00         | 1.00         | 1.00         | 3.00         |
| Contingency                                                                       | 1.00         | 1.00         | 1.00         | 3.00         | Contingency                                                                       | 1.00         | 1.00         | 1.00         | 3.00         |
| Overhead(8% excl. equip)                                                          | 1.92         | 1.92         | 1.92         | 5.76         | Overhead(8% excl. equip)                                                          | 1.92         | 1.92         | 1.92         | 5.76         |
| <b>Total</b>                                                                      | <b>33.42</b> | <b>25.92</b> | <b>25.92</b> | <b>85.26</b> | <b>Total</b>                                                                      | <b>33.42</b> | <b>25.92</b> | <b>25.92</b> | <b>85.26</b> |

| Annexure XII: Budget (R&D KLU: Speech Quality Control) in lakhs of rupees |        |        |        |       |
|---------------------------------------------------------------------------|--------|--------|--------|-------|
| Head                                                                      | Year 1 | Year 2 | Year 3 | Total |
| Minor Equipments**<br>(From Minor Equipments Table)                       | 16.00  | -      | -      | 16.00 |

*Hema*





December 26, 2021

**Dr Thiruvankadam T**  
**SSN School of Management**  
**Old Mahabalipuram Road**  
**Kalavakkam Off, Chennai**  
**Kanchipuram DT - 603110**

Dear Dr. Thiruvankadam. T,

Reference to our discussions with you, we are pleased to appoint you as a consultant for the period of six months (starting with January 02, 2022) to work on the requirements pertaining to spiritual360.com ecommerce marketplace project of the company. As a consultant, we expect you to advise us in the following areas:

1. Building a credible supplier database that leads to creating Ideal Vendor Profile.
2. Building a strategy document that supports expanding the scope and scalability.
3. Identification of market opportunities for the product lines of the company.

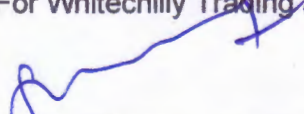
**The other important terms and conditions are:**

1. **Confidentiality:** The consultant is expected to maintain the confidentiality regarding the company business details and should not be used for any other purpose. However the company can selectively agree to share the information that assists in research publications.
2. **Contract Period:** This assignment is contracted for a period of six months (January 02, 2022 – June 30, 2022) and extendable for a further period based on mutual interest.
3. **Data and Business Models:** All the business models of the company and the survey/ market research outcomes coming out from the consultant's work are part of company's property.
4. **IPR:** The consultant or the company sponsoring him for consulting role has no control on any of the intellectual property of the company.
5. **Consulting Fee:** The consultant is paid a consulting fee for the projects identified in mutual discussion. Each of the projects will have approved commercials based on the scope defined for the projects. All payments will be made in the name of SSN School of Management Chennai.
6. **Engagement window:** The consultant is expected to be engaged for a period of six months. The work can be executed through a flexible way of working. The consultant could visit company/ offer the services on a virtual mode according to the requirements.

We look forward to work with you for mutually beneficial outcomes.

Thanking you

For Whitechilly Trading and Services Pvt Ltd

  
Gnanasekaran Saravanakumar  
Director

**WHITECHILLY TRADING AND SERVICES PVT LTD**  
No.2 Marudhupandiar Road, Second Floor Phase II  
Velachery, Chennai – 600 042  
Ph: 94454 77032 Email: [contactus@whitechilly.com](mailto:contactus@whitechilly.com)



December 26, 2021

**Dr Thiruvenkadam T**  
**SSN School of Management**  
**Old Mahabalipuram Road**  
**Kalavakkam, Off Chennai**  
**Kanchipuram DT 603110**

Dear Dr. Thiruvenkadam. T,

Reference to our discussions with you, we are happy to accept your recommendation to work towards creating a Seller Data warehouse for our company.

The assignment involves identification and listing of maximum number of "Categories" that fall into Spiritual Domain, use data technologies to build the database of potential sellers of products under the identified categories and set up a path for company to move the leads towards creating Ideal Vendor Profile (IVP) that leads to the vendor registration on our portal.

Based on your recommendation, we are happy to appoint a three-member consulting team that can work towards building the Seller Data Warehouse.

**Dr. T. Thiruvenkadam,**  
Associate Professor, SSN School of Management (**Chief Consultant**)

**Dr. Valli Devi,**  
Associate Professor, Department of Computer Science,  
SSN College of Engineering (**Technical Consultant**)

**Dr. Hariharanath K,**  
Director, SSN School of Management (**Mentor for the project**)

**Scope and Coverage:**

1. Identifying different categories of products
2. Identifying different types of products under each category
3. Identifying prospective sellers for each category
4. Getting required coordinates of sellers for each of the products.

**Outcomes:**

1. List of categories of products (expected to provide a minimum of 50 categories).
2. A detailed list of products under each category
3. 1000 Seller coordinates (Demographics - name, address, contact details, Firmographics- products produced, specifications, any other relevant information).

The other important terms and conditions are:

1. **Confidentiality:** The consultants are expected to maintain the confidentiality regarding the company business details and should not be used for any other purpose. However, the company can selectively agree to share the information that assists in research publications.
2. **Contract Period:** This assignment is contracted for a period of three months (January 02, 2022 – March 31, 2022) and extendable for a further period based on mutual interest.

**WHITECHILLY TRADING AND SERVICES PVT LTD**

**No.2 Marudhupandiar Road, Second Floor Phase II**

**Velachery, Chennai – 600 042**

**Ph: 94454 77032 Email: [contactus@whitechilly.com](mailto:contactus@whitechilly.com)**

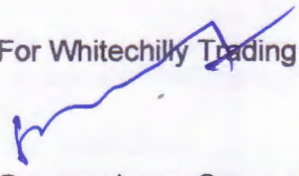


3. **Data and Business Models:** All the business models of the company and the survey/ market research outcomes coming out from the consultant's work are part of company's property.
4. **IPR:** The consultants or the company sponsoring them for consulting role has no control on any of the intellectual property of the company.
5. **Consulting Fee:** The assignment involves a consulting fee of Rs. 1,60,000/- (one lakh sixty thousand only) payable in Rs. 80000 + taxes as fixed component for consulting and market research. 50% of this can be paid on Jan 31, 2022, and balance at the closure of the project. Rs. 80000 + taxes for leads generated @ Rs. 80/ lead. The payments can be made in two stages, 500 leads per stage. All payments will be made in the name of SSN School of Management Chennai.
6. **Engagement window:** The consultants are expected to spend about 350 hours during the period of three months towards the above defined assignments. The work can be executed through a flexible way of working. The consultants could visit company as deemed necessary for discussions.

We look forward to work with the team of SSN.

Thanking you

For Whitechilly Trading and Services Pvt Ltd



Gnanasekaran Saravanakumar  
Director



# **Project Proposal for Creating a Seller Data Warehouse**

**Submitted to**

**WhiteChilly Trading & Services Pvt Ltd., Chennai on 21-12-2021  
(Confidential)**

## **1. About company:**

WhiteChilly Trading & Services Pvt Ltd., Chennai is a recognized Startup Company under the Ministry of Industries, Govt. of India and in the process of launching an e-commerce marketplace called Spritual360.com for specialty products (**Spiritual & Religious Products/Services**).

## **2. Statement and Scope of work:**

The client is in the process of populating the portal with Vendors (Suppliers) to initiate the commercial business.

Data Search needs to be conducted to identify the potential sellers across India and the process involves capturing their details that largely fall into the following categories:

Demographics - name, address, contact details

Firmographics- products produced, specifications, any other relevant information.

This will help the firm to identify Ideal Vendor Profiles (IVPs) who can register on portal and convert them into business partners.

If the data warehouse is created with reliable data, the firm can create Ideal Vendor Profiles (IVPs) who can register on portal and convert them into business partners.

The different stages involved in the process are:

- a. Identification and listing of maximum number of "Categories" that fall into Spiritual Domain.
- b. Use data technologies to build the database of potential sellers of products under the identified categories.
- c. Set up a path for company to move the leads towards IVP that leads to the vendor registration.

## **3. Technical approach:**

Suitable web crawling and data scraping is followed using the internal resources.

#### 4. Proposed plan of for Seller Acquisition along with deliverables:

| Milestone                                                         | Process                                                                                                                                                                                                                                                                                                          | Estimated Man-Hours            | Deliverables                                                                                                                                                                           |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Define the client requirements and make a proposal                | Requirements understanding and establishing a process                                                                                                                                                                                                                                                            | 5 hours                        | Proposal document (Approval required from client)                                                                                                                                      |
| Identifying different categories of products                      | <p>Benchmarking with the market leader, and other market players.</p> <p>Review a minimum of 10 top selling portals/retails to build an effective categories list.</p> <p>The characteristics of categories should reflect the inclusivity and diversity to ensure wide variety is made available on portal.</p> | 15 hours                       | <p>List of categories of products.</p> <p>Expected to provide a minimum of 50 categories.</p>                                                                                          |
| Identifying different types of products under each category       | <p>Benchmarking with the market leader, and other market players.</p> <p>Each category will have all possible products that are commonly sought by customers. An effort will be made to get a minimum of 10 products and a maximum of 25 products in each of the categories subject to the scope.</p>            | 20 hours                       | A detailed list of products under each category                                                                                                                                        |
| Identifying prospective sellers for each category                 | Web Crawling/Data Scraping                                                                                                                                                                                                                                                                                       | For each category, 5 -6 hours, | Sellers List                                                                                                                                                                           |
| Getting required coordinates of sellers for each of the products. |                                                                                                                                                                                                                                                                                                                  | Total: 250-300 hours           | <p>1000 Seller coordinates (Minimum)</p> <p>Demographics - name, address, contact details</p> <p>Firmographics- products produced, specifications, any other relevant information.</p> |

Proposed work involves 350-man hours of work.



## **5. Resources Deployment**

### **Mentor:**

**Dr. K. Hariharanath, Director, SSN School of Management**

### **Principal Investigators:**

#### **1. Dr. Thiruvankadam. T**

Associate Professor  
SSN School of Management  
Kalavakkam, OMR, Chennai – 603 110.

#### **2. Dr. K. Vallidevi,**

Associate Professor,  
Department of CSE,  
Sri Sivasubramaniya Nadar College of Engineering,  
Kalavakkam-603110

A group of 5-6 students with good technical capabilities will be used to clean the data and provide in the right format.

## **6. Time Frame:**

350 hours of work = 45 working days. However, the progress on work can be reviewed at the end of every 15 days (in three stages).

Start date: Jan 3, 2022.

End date: March 4, 2022

However, seller database in specified format will be released as and when a category is completed so that the company can move towards supplier acquisition.

## **7. Budget: Rs.1.6 lacs + taxes**

## **8. Specified Deliverables:**

- a. Categories of products and different varieties of products under each category.
- b. Coordinates of prospective sellers

## **9. Invoicing and Payments:**

Rs. 80000 + taxes as fixed component for consulting and market research. 50% of this can be paid on Jan 31, 2022, and balance at the closure of the project.

Rs. 80000 + taxes for leads generated @ Rs. 80/ lead. The payments can be made in two stages, 500 leads per stage.

All payments will be made in the name of SSN School of Management Chennai against the invoices raised.



#### 10. Non-disclosures and data protection:

All the data that is being generated will be handed over to the company. SSN has no right on data. SSN will not share this data with any other competing players of the client company.

#### 11. Visits to the company:

Permission to interact with decision makers of company need to be provided. Consultants from SSN will make visits to the company in a mutually agreed manner.

#### 12. Contact and Escalation points:

SSN: Dr. Hariharanath K, Director, SSN School of Management, Chennai.  
Whitechilly: Mr. Kabaleeswaran, Consultant.

#### 13. Jurisdiction:

Parties agree to submit to exclusive jurisdiction of **Courts at Chennai.**

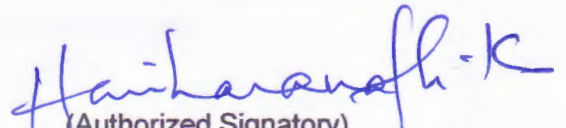
For Whitechilly Trading and Services Pvt. Ltd

  
Director

(Authorized Signatory)  
WhiteChilly Trading and Services Pvt Ltd  
Gnanasekaran Saravanakumar  
Director

Date: 21-12-2021



  
(Authorized Signatory)  
SSN School of Management

**Director**  
SSN School of Management  
Old Mahabalipuram Road  
Kalavakkam - 603 110.  
Tamilnadu

\*\*\*\*\*



## ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

Nelson Mandela Marg, Vasant Kunj,

New Delhi-110070

## RPS - Sanction Letter

File No. 8-136/FDC/RPS/POLICY-1/2021-22

## The Drawing and Disbursing Officer

All India Council for Technical Education

Nelson Mandela Marg,

Vasant Kunj, New Delhi-110070,



**Sub:** Release of a sum of Rs. 839125/- being the 1<sup>st</sup> installment of the total grant of Rs. 959000/- for conduct of Project under Research Promotion Scheme (RPS) during the financial year 2021-22.

Sir,

With reference to the proposal submitted by the institute, this is to convey the sanction of the Council for payment of Rs. 839125/- (Rupees Eight Lakh Thirty Nine Thousand One Hundred Twenty Five Only) as 1<sup>st</sup> installment out of a total approved grant-in-aid of Rs.959000/- for conduct of a Project under the Research Promotion Scheme (RPS), as per details given below:-

|      |                                                                                      |   |                                                                                                                                                                       |
|------|--------------------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I.   | Name and address of the Beneficiary Institution (University / College / Institution) | : | Registrar / Director / Principal,<br>SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING,<br>RAJIV GANDHI SALAI (OMR) KALAVAKKAM,<br>KANCHIPURAM DIST-603110, TAMIL NADU |
| II.  | Principal Investigator's Name & Dept./Course                                         | : | Dr. SURESH JAGANATHAN<br>(COMPUTER SCIENCE & ENGINEERING)                                                                                                             |
| III. | Co-Principal Investigator's Name & Dept.                                             | : | DATTULURI VARAPRASAD<br>(COMPUTER SCIENCE AND ENGINEERING)                                                                                                            |
| IV.  | Grant-in-aid Sanctioned                                                              | : | Rs. 959000/- (Rs. 719250/- for non-recurring and<br>Rs.239750/- for recurring expenditure)                                                                            |
| V.   | Amount to be Released during the year 2021-22 (as 1 <sup>st</sup> installment)       | : | Rs. 839125/-<br>(Rs. 719250/- Full amount of non-recurring & Rs. 119875/-<br>recurring i.e. 50 % of total sanctioned recurring grant)                                 |
| VI.  | Project Duration                                                                     | : | 3 Years                                                                                                                                                               |
| VII. | Title of the Project                                                                 | : | Designing a lightweight Consensus Mechanism in Block-chain for<br>IoT based Asset Management                                                                          |

## I. Release of funds:

- The amount 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 SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING, RAJIV GANDHI SALAI (OMR) KALAVAKKAM, KANCHIPURAM DIST-603110, TAMIL NADU through PFMS.
- The sanctioned grant-in-aid is debitable to the Major Head "601.12.a (RPS Plan)" Gen. and is valid for payment during the financial year 2021-22.
- 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 principles of the Scheme.
- 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.

## II. Maintenance of account by the Institute/PI:

- 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.
- The grant is intended to cover items of expenditure/equipment approved by AICTE.
- Acknowledgement of receipt of grant and letter of acceptance of terms and conditions is to be submitted to AICTE within 15 days from the receipt of the grant to the following address:

Director (Faculty Development Cell), AICTE, Nelson Mandela Marg, Vasant Kunj, New Delhi-110070



4. The accounts of the grantee will be opened for test check by the Council or Comptroller & Auditor General of India or by any officer designated by them.
5. The Principal and PI of the institute are requested to verify the correctness of the undermentioned bank account/RTGS/PFMS details submitted by them alongwith the Proposal, 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: -

| Institute Pan No. | Bank Name                     | Bank Branch   | Bank Branch Add.                            | Account Holder Name                       | Account Type   | Account Number  | IFSC Code   |
|-------------------|-------------------------------|---------------|---------------------------------------------|-------------------------------------------|----------------|-----------------|-------------|
| AAATS224 OQ       | TAMILNAD MERCANTILE BANK LTD. | Thiruvanniyur | No.3, Thiruvalluvar Salai, Chennai - 600041 | The Principal, SSN College of Engineering | Saving Account | 158100050070022 | TMBL0000158 |

6. The grantee Institution shall observe all financial norms and guidelines as prescribed by the AICTE/Government of India from time to time. Grantee institution must follow GFR guidelines in procuring the sanctioned items and maintain an audited record of assets acquired wholly or substantially out of the grant-in-aid and a register for assets shall be maintained by the Institute in the prescribed form i.e. GFR-19.
7. **Interest accrued on the sanctioned grant-in-aid will be reported and refunded to AICTE and not adjusted against the subsequent installment.**

### III. General Instructions:

1. It should be ensured that no RPS project in favour of the same P.I. has been sanctioned during the last 03 years before utilizing this amount and the matter be brought to the notice of this Council immediately in case a faculty is sanctioned multiple RPS Projects.
2. The duration of Project is 03 years and the **date of release of the grant by AICTE shall be taken as the date of commencement of the project.** The Registrar/Director/Principal shall intimate about the receipt of the grant to AICTE. Any Expenditure, incurred prior to issuance of this Sanction Order, would not allowed to be adjusted in the grant and if the University/Institution do not take-up the project work **within 6 months** of the receipt of the grant, approval shall *ipso facto* lapse and the Institute has to necessarily refund the entire grant to AICTE along with interest within a month. In case the grant is not refunded within said duration 18% interest will be levied on it. The grant has to be refunded to AICTE, through RTGS as per details given below:

|                            |                                    |
|----------------------------|------------------------------------|
| Account Number             | 55113199952                        |
| Name of the Account Holder | Member Secretary, AICTE, New Delhi |
| Bank Name                  | State Bank of India                |
| Branch Name                | Shashtri Bhawan, New Delhi         |
| IFSC Code                  | SBIN0050203                        |

3. The Institute may constitute a Project Monitoring Committee (PMC). The composition of the PMC shall be as under:
  - i. Principal/Director of the institution (Chairperson)
  - ii. Two HODs from institute (Members)
  - iii. In case of private institute one subject expert from government institute, not below the rank of Associate Professor (Member)
  - iv. Coordinator of the project (Member Secretary)
4. The grant shall be utilized strictly for the purpose as specified in the sanction letter. Re-appropriation of funds from one Head to another is strictly not permitted viz. Recurring and non-recurring Heads. Further, the equipment(s)/item(s) purchased should be as per the specifications and individual item-wise costs sanctioned by AICTE, and not taking the total grant sanctioned as one entity. Item-wise purchase cost shall be matched with the sanctioned cost, and the cost of item purchased below the sanction cost shall be restricted as actual cost. If the item purchase cost is higher than its sanctioned cost, the cost shall be restricted to the sanctioned cost and the additional amount shall be met by the Institute from its own resources.
5. Similarly, the recurring grant can be used for the items (non-recurring) sanctioned by the AICTE. No money be used for going abroad to attend Conference / seminars. However, for presenting a Paper in a Seminar / Conference **within the country**, the travel expenses may be met from the recurring grant.



:: 3 ::

6. No request for additional grant over and above the sanctioned grant shall be considered by the AICTE. The additional amount, if any, expended beyond the sanctioned grant shall be met by the Institute from its own resources.
7. The institute/University shall not charge any overheads on this Project and will provide all the administrative support **and timely release of grant to PI** for completion of the Project.
8. The grantee shall utilize grants only on approved items as per list of equipment attached. However, if the grantee wishes to recast the Project, approval of 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. **The revised proposal should be within the total grant sanctioned and duly supported with reasons and recommendations of the Project Monitoring Committee (PMC).**
9. 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.
10. Each project sanctioned by AICTE is assigned a specific Reference Number, which is given on pre-page. All correspondence address to AICTE regarding the project must quote this number alongwith year of sanction of the project, otherwise correspondence may not be entertained.
11. The grantee shall follow the terms and conditions of Research Promotion Scheme (RPS) as laid down by the Council from time to time.

#### IV. Submission of documents by the institute/PI to AICTE:

##### A. Documents to be submitted within one month of completion of each financial year:

- i. Annual Progress Report, indicating therein the number of patents, publications or any other achievement.
- ii. Utilization Certificate, Audited Utilization Certificate, Receipt & Payments, Statement of Expenditure.
- iii. Audited record of assets acquired wholly or substantially out of the grant-in-aid and a register for assets in the prescribed form i.e. GFR-19.
- iv. Separate Bills/vouchers related to Non-recurring and recurring expenditures duly signed & stamped by the PI & Head of the institution.
- v. Stock entry register duly verified by the Store-in-charge and PI & counter signed by Head of institution.

##### B. Documents to be submitted within two month of completion of the Project:

- i. The consolidated Utilization Certificate (UC) and Receipt & Payment Account for the Project duration, duly audited.
- ii. Consolidated audited statement of expenditure, to the effect that the grant has been utilized for the purpose for which it has been sanctioned. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council.
- iii. Project Completion Report duly signed & stamped by the PI & Head of the institution and Project Evaluation Committee (PEC) Members.
- iv. Principal Investigator/institute to submit the Feed Back Form in AICTE format.
- v. The prescribed formats for submission of necessary mandatory documents and Terms & Conditions may please be downloaded from [www.aicte-india.org/schemes/research-innovations-development-schemes](http://www.aicte-india.org/schemes/research-innovations-development-schemes).

**Note: Any deviation from the above said time schedule will cause serious action against the institute.**



## V. Approved List of Items under Non-recurring grant:

| S. No. | Approved Items (As per proposal)                                                           | No. of Units | Amount recommended<br>(in Rs.) |
|--------|--------------------------------------------------------------------------------------------|--------------|--------------------------------|
| A.     | Non-recurring                                                                              |              |                                |
| i)     | Camera Module                                                                              | 5            | Rs. 719250/-                   |
| ii)    | Dell Desktop                                                                               | 1            |                                |
| iii)   | Dell Workstation                                                                           | 1            |                                |
| iv)    | Display (10.1 inch Diagonal IPS screen)                                                    | 5            |                                |
| v)     | IoT Device                                                                                 | 5            |                                |
| vi)    | RFID Reader                                                                                | 5            |                                |
| vii)   | RFID Tags                                                                                  | 500          |                                |
| viii)  | Wireless Router                                                                            | 5            |                                |
| B.     | Recurring i.e. 50% of total approved recurring grant) for Contingencies & Consumables only |              | Rs. 119875/-                   |
|        | Grand Total (A) + (B)                                                                      |              | Rs. 839125/-                   |

Copy forwarded for information and necessary action to:

## 1. REGISTRAR / DIRECTOR / PRINCIPAL,

SRI SIVASUBRMANIYA NADAR COLLEGE OF ENGINEERING,  
RAJIV GANDHI SALAI (OMR) KALAVAKKAM,  
KANCHIPURAM DIST-603110,  
TAMIL NADU

## 2. NAME OF PRINCIPAL INVESTIGATOR,

Dr. SURESH JAGANATHAN,  
(COMPUTER SCIENCE & ENGINEERING)  
SRI SIVASUBRMANIYA NADAR COLLEGE OF ENGINEERING,  
RAJIV GANDHI SALAI (OMR) KALAVAKKAM,  
KANCHIPURAM DIST-603110, TAMIL NADU

3. OFFICE OF DIRECTOR GENERAL OF AUDIT  
GENERAL REVENUES, AGCR BUILDING  
I.P. ESTATE, NEW DELHI-110002.

## 4. GUARD FILE

10 FEB 2022



(Col. B. Venkat)  
Director (FDC)



## ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

Nelson Mandela Marg, Vasant Kunj,  
New Delhi-110070

## RPS - Sanction Letter

File No. 8-197/FDC/RPS(SC&amp;ST)/POLICY-1/2021-22

Date: 27 JAN 2022

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

**Sub: Release of a sum of Rs.361375/- being the 1<sup>st</sup> installment of the total grant of Rs.413000/- for conduct of Project under Research Promotion Scheme (RPS) during the financial year 2021-22.**

Sir,

With reference to the proposal submitted by the institute, this is to convey the sanction of the Council for payment of **Rs.361375/- (Rupees Three Lakh Sixty One Thousand Three Hundred Seventy Five Only)** as 1<sup>st</sup> installment out of a total approved grant-in-aid of **Rs. 413000/-** for conduct of a Project under the Research Promotion Scheme (RPS), as per details given below:-

|      |                                                                                         |   |                                                                                                                                                                  |
|------|-----------------------------------------------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I.   | Name and address of the Beneficiary Institution<br>(University / College / Institution) | : | Registrar / Director / Principal,<br>SRI SIVASUBRMANIYA NADAR COLLEGE OF ENGINEERING,<br>RAJIV GANDHI SALAI (OMR) KALAVAKKAM,<br>KANCHIPURAM -603110, TAMIL NADU |
| II.  | Principal Investigator's Name & Dept./Course                                            | : | Dr. VIJAY JEYAKUMAR<br>(BIOMEDICAL ENGINEERING)                                                                                                                  |
| III. | Co-Principal Investigator's Name & Dept.                                                | : | NIRMALA K<br>(BIOMEDICAL ENGINEERING)                                                                                                                            |
| IV.  | Grant-in-aid Sanctioned                                                                 | : | Rs.413000/- (Rs. 309750/- for non-recurring and Rs.103250/- for recurring expenditure)                                                                           |
| V.   | Amount to be Released during the year 2021-22 (as 1 <sup>st</sup> installment)          | : | Rs. 361375/-<br>(Rs.309750/- Full amount of non-recurring & Rs.51625/-recurring i.e. 50 % of total sanctioned recurring grant)                                   |
| VI.  | Project Duration                                                                        | : | 3 Years                                                                                                                                                          |
| VII. | Title of the Project                                                                    | : | An Integrated Framework to aid Non-Contact Measurement of vital parameters for mass Infection Screening                                                          |

**I. Release of funds:**

- The amount 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 **SRI SIVASUBRMANIYA NADAR COLLEGE OF ENGINEERING, RAJIV GANDHI SALAI (OMR) KALAVAKKAM, KANCHIPURAM -603110, TAMIL NADU** through PFMS.
- The sanctioned grant-in-aid is debitable to the **Major Head "601.12.b (RPS Plan)" SC.** and is valid for payment during the financial year 2021-22.
- 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 principles of the Scheme.
- 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.

**II. Maintenance of account by the Institute/PI:**

- 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.
- The grant is intended to cover items of expenditure/equipment approved by AICTE.
- Acknowledgement of receipt of grant and letter of acceptance of terms and conditions is to be submitted to AICTE **within 15 days** from the receipt of the grant to the following address:

Director (Faculty Development Cell), AICTE, Nelson Mandela Marg, Vasant Kunj, New Delhi-110070



4. The accounts of the grantee will be opened for test check by the Council or Comptroller & Auditor General of India or by any officer designated by them.
5. The Principal and PI of the institute are requested to verify the correctness of the undermentioned bank account/RTGS/PFMS details submitted by them alongwith the Proposal, 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: -

| Institute Pan No. | Bank Name                           | Bank Branch   | Bank Branch Add.                                  | Account Holder Name                             | Account Type      | Account Number  | IFSC Code   |
|-------------------|-------------------------------------|---------------|---------------------------------------------------|-------------------------------------------------|-------------------|-----------------|-------------|
| AAATS224<br>0Q    | TAMILNAD<br>MERCANTILE<br>BANK LTD. | Thiruvanniyur | No.3, Thiruvalluvar<br>Salai, Chennai -<br>600041 | The Principal,<br>SSN College of<br>Engineering | Saving<br>Account | 158100050070022 | TMBL0000158 |

6. The grantee Institution shall observe all financial norms and guidelines as prescribed by the AICTE/Government of India from time to time. Grantee institution must follow GFR guidelines in procuring the sanctioned items and maintain an audited record of assets acquired wholly or substantially out of the grant-in-aid and a register for assets shall be maintained by the Institute in the prescribed form i.e. GFR-19.
7. **Interest accrued on the sanctioned grant-in-aid will be reported and refunded to AICTE and not adjusted against the subsequent installment.**

### III. General Instructions:

1. It should be ensured that no RPS project in favour of the same P.I. has been sanctioned during the last 03 years before utilizing this amount and the matter be brought to the notice of this Council immediately in case a faculty is sanctioned multiple RPS Projects.
2. The duration of Project is 03 years and the **date of release of the grant by AICTE shall be taken as the date of commencement of the project.** The Registrar/Director/Principal shall intimate about the receipt of the grant to AICTE. Any Expenditure, incurred prior to issuance of this Sanction Order, would not allowed to be adjusted in the grant and if the University/Institution do not take-up the project work **within 6 months** of the receipt of the grant, approval shall *ipso facto* lapse and the Institute has to necessarily refund the entire grant to AICTE along with interest within a month. In case the grant is not refunded within said duration 18% interest will be levied on it. The grant has to be refunded to AICTE, through RTGS as per details given below:

|                            |                                    |
|----------------------------|------------------------------------|
| Account Number             | 55113199952                        |
| Name of the Account Holder | Member Secretary, AICTE, New Delhi |
| Bank Name                  | State Bank of India                |
| Branch Name                | Shashtri Bhawan, New Delhi         |
| IFSC Code                  | SBIN0050203                        |

3. The Institute may constitute a Project Monitoring Committee (PMC). The composition of the PMC shall be as under:
  - i. Principal/Director of the institution (Chairperson)
  - ii. Two HODs from institute (Members)
  - iii. In case of private institute one subject expert from government institute, not below the rank of Associate Professor (Member)
  - iv. Coordinator of the project (Member Secretary)
4. The grant shall be utilized strictly for the purpose as specified in the sanction letter. Re-appropriation of funds from one Head to another is strictly not permitted viz. Recurring and non-recurring Heads. Further, the equipment(s)/item(s) purchased should be as per the specifications and individual item-wise costs sanctioned by AICTE, and not taking the total grant sanctioned as one entity. Item-wise purchase cost shall be matched with the sanctioned cost, and the cost of item purchased below the sanction cost shall be restricted as actual cost. If the item purchase cost is higher than its sanctioned cost, the cost shall be restricted to the sanctioned cost and the additional amount shall be met by the Institute from its own resources.
5. Similarly, the recurring grant can be used for the items (non-recurring) sanctioned by the AICTE. No money be used for going abroad to attend Conference / seminars. However, for presenting a Paper in a Seminar / Conference **within the country**, the travel expenses may be met from the recurring grant.



:: 3 ::

6. No request for additional grant over and above the sanctioned grant shall be considered by the AICTE. The additional amount, if any, expended beyond the sanctioned grant shall be met by the Institute from its own resources.
7. The institute/University shall not charge any overheads on this Project and will provide all the administrative support **and timely release of grant to PI** for completion of the Project.
8. The grantee shall utilize grants only on approved items as per list of equipment attached. However, if the grantee wishes to recast the Project, approval of 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. **The revised proposal should be within the total grant sanctioned and duly supported with reasons and recommendations of the Project Monitoring Committee (PMC).**
9. 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.
10. Each project sanctioned by AICTE is assigned a specific Reference Number, which is given on pre-page. All correspondence address to AICTE regarding the project must quote this number alongwith year of sanction of the project, otherwise correspondence may not be entertained.
11. The grantee shall follow the terms and conditions of Research Promotion Scheme (RPS) as laid down by the Council from time to time.

#### IV. Submission of documents by the institute/PI to AICTE:

##### A. Documents to be submitted within one month of completion of each financial year:

- i. Annual Progress Report, indicating therein the number of patents, publications or any other achievement.
- ii. Utilization Certificate, Audited Utilization Certificate, Receipt & Payments, Statement of Expenditure.
- iii. Audited record of assets acquired wholly or substantially out of the grant-in-aid and a register for assets in the prescribed form i.e. GFR-19.
- iv. Separate Bills/vouchers related to Non-recurring and recurring expenditures duly signed & stamped by the PI & Head of the institution.
- v. Stock entry register duly verified by the Store-in-charge and PI & counter signed by Head of institution.

##### B. Documents to be submitted within two month of completion of the Project:

- i. The consolidated Utilization Certificate (UC) and Receipt & Payment Account for the Project duration, duly audited.
- ii. Consolidated audited statement of expenditure, to the effect that the grant has been utilized for the purpose for which it has been sanctioned. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council.
- iii. Project Completion Report duly signed & stamped by the PI & Head of the institution and Project Evaluation Committee (PEC) Members.
- iv. Principal Investigator/institute to submit the Feed Back Form in AICTE format.
- v. The prescribed formats for submission of necessary mandatory documents and Terms & Conditions may please be downloaded from [www.aicte-india.org/schemes/research-innovations-development-schemes](http://www.aicte-india.org/schemes/research-innovations-development-schemes).

**Note: Any deviation from the above said time schedule will cause serious action against the institute.**



:: 4 ::

## V. Approved List of Items under Non-recurring grant:

| S. No. | Approved Items (As per proposal)                                                           | No. of Units | Amount recommended<br>(in Rs.) |
|--------|--------------------------------------------------------------------------------------------|--------------|--------------------------------|
| A.     | Non-recurring                                                                              |              |                                |
| i)     | HP Z4 – G4 Work station with Nvidia RTX 2080Ti-11GB graphics card                          | 1            | Rs.309750/-                    |
| B.     | Recurring i.e. 50% of total approved recurring grant) for Contingencies & Consumables only |              | Rs.51625/-                     |
|        | Grand Total (A) + (B)                                                                      |              | Rs.361375/-                    |

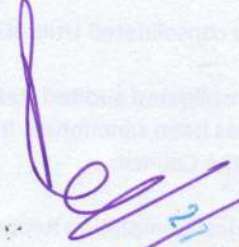
Copy forwarded for information and necessary action to:

1. REGISTRAR / DIRECTOR / PRINCIPAL,  
SRI SIVASUBRMANIYA NADAR COLLEGE OF ENGINEERING,  
RAJIV GANDHI SALAI (OMR) KALAVAKKAM,  
KANCHIPURAM -603110, TAMIL NADU

2. NAME OF PRINCIPAL INVESTIGATOR,  
Dr. VIJAY JEYAKUMAR  
(BIOMEDICAL ENGINEERING),  
SRI SIVASUBRMANIYA NADAR COLLEGE OF ENGINEERING,  
RAJIV GANDHI SALAI (OMR) KALAVAKKAM,  
KANCHIPURAM -603110, TAMIL NADU

3. OFFICE OF DIRECTOR GENERAL OF AUDIT  
GENERAL REVENUES, AGCR BUILDING  
I.P. ESTATE, NEW DELHI-110002.

4. GUARD FILE

  
27 JAN 2022

(Col. B. Venkat)  
Director (FDC)



Date: 05.04.2022

To

The Principal

Sri Sivasubramaniya Nadar College of Engineering  
OMR, Rajiv Gandhi Salai, Kalavakkam-603110, Tamil Nadu.

Dear Sir,

**Sub: Funded Project – Grant Letter – Dr. N. Lakshmi Narasimhan, Assoc. Prof/Mech- Release of Grant amount Rs. 1,50,000/- to your institution – Reg:-**

Post our Review of the project proposal submitted by Dr. N. Lakshmi Narasimhan, Associate Professor in the department of Mechanical Engineering of your institution and further discussions, on the "Design and Development of a Thermal Chamber" for one of our applications, We are pleased to grant and release a sum of Rs. 1,50,000/- (Rupees One Lakh and Fifty Thousand only) to your institution's account towards the project expenses covering fabrication, purchase of related equipments, testing, consumables, overheads, labour, and other miscellaneous expenses if any. As a Principal Investigator (PI), Dr. N. Lakshmi Narasimhan shall take the responsibility for the completion of the project on time as per the terms and conditions stated below. We request you to kindly acknowledge the receipt of the grant. Our transaction details shall be communicated to the principal investigator. We wish to have long term relations with your Institution and will be glad to support in future, faculty Projects in key areas that are of mutual interests and benefits.

**Project Title:** Design and Development of a Thermal Chamber

**Duration:** Max time period of 2 Months from the date of release of the grant

**Grant Released:** Rs. 1,50,000/- (Rupees One Lakh and Fifty Thousand Only)

**Principal Investigator:** Dr. N. Lakshmi Narasimhan, Associate Professor, Dept. of Mechanical Engineering, SSN College of Engineering, Kalavakkam-603110.

**Terms & Conditions**

1. Project Expenditures shall be under the mentioned heads.
2. The grant shall not cover any "salary to manpower" components under this project.
3. A duly audited report on the utility of the funds to be made available to the company after the completion of the project or at end of the financial year 2022-23 whichever is earlier.
4. Any unused balance funds available from the grant to be returned to the company within two months from the date of completion of the project.
5. In case of PI leaving the institute before completion of the project, the PI shall nominate a suitable faculty member of your institution who can take charge as PI and complete the project.

CC to Dr. N. Lakshmi Narasimhan,

Associate Professor, Dept. of Mechanical Engineering, SSNCE.

For SRUSHTY GLOBAL SOLUTIONS PVT. LTD.



Authorised Signatory



## ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

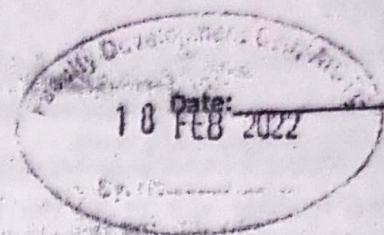
Nelson Mandela Marg, Vasant Kunj,

New Delhi-110070

RPS - Sanction Letter

File No. 8-135/FDC/RPS/POLICY-1/2021-22

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



Sub: Release of a sum of Rs. 1272771/- being the 1<sup>st</sup> installment of the total grant of Rs. 1454596/- for conduct of Project under Research Promotion Scheme (RPS) during the financial year 2021-22.

Sir,

With reference to the proposal submitted by the institute, this is to convey the sanction of the Council for payment of Rs. 1272771/- (Rupees Twelve Lakh Seventy Two Thousand Seven Hundred Seventy One Only) as 1<sup>st</sup> installment out of a total approved grant-in-aid of Rs. 1454596/- for conduct of a Project under the Research Promotion Scheme (RPS), as per details given below:-

|      |                                                                                      |                                                                                                                                                                                                        |
|------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| I.   | Name and address of the Beneficiary Institution (University / College / Institution) | : Registrar / Director / Principal, SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING, RAJIV GANDHI SALAI (OMR) KALAVAKKAM, KANCHIPURAM DIST-603110, TAMIL NADU                                         |
| II.  | Principal Investigator's Name & Dept./Course                                         | : Dr. RAJKUMAR (MECHANICAL ENGINEERING)                                                                                                                                                                |
| III. | Co-Principal Investigator's Name & Dept.                                             | : KANNAPPAN GOPINATH (CHEMICAL ENGINEERING)                                                                                                                                                            |
| IV.  | Grant-in-aid Sanctioned                                                              | : Rs. 1454596/- (Rs. 1090947/- for non-recurring and Rs. 363649/- for recurring expenditure)                                                                                                           |
| V.   | Amount to be Released during the year 2021-22 (as 1 <sup>st</sup> installment)       | : Rs. 1272771/- (Rs. 1090947/- Full amount of non-recurring & Rs. 181824/- recurring i.e. 50 % of total sanctioned recurring grant)                                                                    |
| VI.  | Project Duration                                                                     | : 3 Years                                                                                                                                                                                              |
| VII. | Title of the Project                                                                 | : Upgradation of Municipal Solid Wastes into Commercial Grade Fuel using Co-Liquefaction and Study of its Effects on Performance and Emission characteristics of Dual Fuel Compression Ignition Engine |

## I. Release of funds:

- The amount 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 SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING, RAJIV GANDHI SALAI (OMR) KALAVAKKAM, KANCHIPURAM DIST-603110, TAMIL NADU through PFMS.
- The sanctioned grant-in-aid is debitable to the Major Head "601.12.a (RPS Plan)" Gen. and is valid for payment during the financial year 2021-22.
- 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 principles of the Scheme.
- 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.

## II. Maintenance of account by the Institute/PI:

- 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.
- The grant is intended to cover items of expenditure/equipment approved by AICTE.
- Acknowledgement of receipt of grant and letter of acceptance of terms and conditions is to be submitted to AICTE within 15 days from the receipt of the grant to the following address:  
Director (Faculty Development Cell), AICTE, Nelson Mandela Marg, Vasant Kunj, New Delhi-110070



Tele : 011-2390 7661  
Fax : 011-2301 4085  
E-mail: [dnrdo@hq.drdo.in](mailto:dnrdo@hq.drdo.in)

NRB/4003/MAT/21-22  
DRDO HQ Annexe  
Naval Research Board  
Room No.410, 4<sup>th</sup> Floor  
Old LASTEC Building  
Metcalf House, Civil Lines  
New Delhi - 110 054

12 Oct 2021

The Registrar  
Sri Sivasubramaniya Nadar College of Engineering  
Kalavakkam, Chennai - 603 110, Tamil Nadu

**SANCTION OF PROJECT UNDER NAVAL RESEARCH BOARD (NRB)**

Under the powers vested in the NRB vide Government of India, Ministry of Defence, letter No.DNRD/0100/NRB/4179/D (R&D) dated 20 Aug 96, amended from time to time and in terms of Sl. No. 3.1 of GOI, MoD letter No.DRDO/DFMM/PL/83226/M/01/1976/D(R&D) dated 18 Dec 2019, I am directed to convey the sanction of the CFA i.e DG(TM) for the following project:-

Title : "Understanding the influence of corrosion on the shock response of DMR 249A steel plates and welded joints"

Project No. : NRB-485/MAT/21-22

PI : Dr. S. Suresh Kumar, Associate Professor  
Department of Mechanical Engineering.  
Sri Sivasubramaniya Nadar College of Engineering  
Old Mahabalipuram road, Kalavakkam  
Chennai - 603 110, Tamil Nadu

Co PI : Dr. S. R Koteswara Rao, Professor, SSNCE  
Dr. Ajay Krishanan

Lab Collaborator : Dr. Atul Kumar, Sc 'F', DMRL

2. **Cost and duration of the project:** - Total budget for the project is Rs. 42,05,000/- (Rupees Forty Two Lakhs & Five Thousand only) for 3 years duration. The breakup of fund for various activities of the project is as given below: -

| Head                                            | 1 <sup>st</sup> Year | 2 <sup>nd</sup> Year | 3rd Year   | Total       |
|-------------------------------------------------|----------------------|----------------------|------------|-------------|
| Research Staff                                  | 3,72,000/-           | 3,72,000/-           | 4,20,000/- | 11,64,000/- |
| Specific Equipment                              | 23,40,000/-          |                      |            | 23,40,000/- |
| Consumable Stores                               | 50,000/-             | 25,000/-             | 15,000/-   | 90,000/-    |
| Contingencies                                   | 50,000/-             | 40,000/-             | 21,000/-   | 1,11,000/-  |
| Travel (TA/DA)                                  | 50,000/-             | 50,000/-             | 50,000/-   | 1,50,000/-  |
| Others (Operation and maintenance of equipment) | 50,000/-             | 25,000/-             | 25,000/-   | 1,00,000/-  |
| Institute Over heads                            | 1,00,000/-           | 1,00,000/-           | 50,000     | 2,50,000/-  |
| Grand Total                                     | 30,12,000/-          | 6,12,000/-           | 5,81,000   | 42,05,000/- |

Contd.....2/-



  
Revathy Vishwanath  
Deputy Director  
RP Division In-charge  
Tel #011-26716690  
E-mail: rpsicssr@gmail.com

*Research file*

Indian Council of Social Science Research  
(Ministry of Education)  
JNU Institutional Area, Aruna Asaf Ali Marg  
New Delhi 110067  
Website: [www.icssr.org](http://www.icssr.org)

**SANCTION ORDER**

F.No. 02/60/2021-22/ICSSR/RP/MN

Dated: 25-03-2022

The Principal  
Sri Sivasubramaniya Nadar College of Engineering  
Rajiv Gandhi Salai (OMR)  
Kalavakkam 603110

**Subject:** Sanction of Minor Project entitled "A Project on Identifying Social Entrepreneurial Opportunities for Women in New Areas of Urbanisation" to Dr. Srinivas Gumparthi, Professor, Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam 603110.

Dear Madam,

1. The Indian Council of Social Science Research (ICSSR) considered the above Research Programme project submitted by **Dr. Srinivas Gumparthi**, Professor, Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam 603110, Co-Project Directors of the study are: **1. Dr. K. Sampath Kumar**, Professor, Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam 603110, **2. Dr. T. Girija**, Associate Professor, Sri Sivasubramaniya Nadar College of Engineering, Kalavakkam 603110.
2. The study, as proposed by the researcher, is to be located at and financially administered by your institution as per the guidelines of this award.
3. The ICSSR has sanctioned a grant-in-aid of **Rs.4,00,000** (Rupees **Four lakh** only) for the above research project and the grant will be released as follows:

|                            |                       |
|----------------------------|-----------------------|
| First instalment @40% :    | Rs. 1,60,000/-        |
| Second instalment @20%:    | Rs. 80,000/-          |
| Third instalment @10% :    | Rs. 40,000/-          |
| Fourth Instalment @10% :   | Rs. 40,000/-          |
| Final instalment @15%:     | Rs. 60,000/-          |
| Publication Grant* @5-6% : | Rs. 20,000/-          |
| <b>Total</b>               | <b>Rs. 4,00,000/-</b> |

Overhead charges over and above

5% or maximum Rs.1,00,000 : Rs20,000/-\*\*

(\* to be retained by the ICSSR. ICSSR would publish it subject to the recommendation by the expert and relevant Committees for the purpose, from the overall budget, so to be retained by the ICSSR).

\*\*will be released on successful completion of project after evaluation.

(The break-up budget approved by the ICSSR of Rs. 4,00,000/- is enclosed.)

4. The **First** installment of the approved grant-in-aid will be released after receiving the grant-in-aid bill duly filled in, stamped and signed by the Project Director as well as the affiliating organization. **(GIB already received).**
5. In case, the study involves survey research, the finalized schedules/questionnaires (2 copies) designed to elicit information should be sent to the ICSSR as per the following schedule:
  - a) If the schedule /questionnaire for eliciting information is as per standard questionnaire, these will have to be sent to ICSSR immediately,
  - b) If the schedule /questionnaire for eliciting information are to be designed afresh keeping in view the requirements of the project, these will have to be sent to the ICSSR within a period of six months in any case.

*Revathy*



# MOUNT CARMEL COLLEGE, AUTONOMOUS

# 58, Palace Road, Bengaluru - 560 052

20.1.22

Dr. R. Sundareswaran

Co-Investigator

Associate Professor, Department of Mathematics

Sri Sivasubramaniya Nadar College of Engineering

Chennai.

Subject: Sanction of Research Proposal under management funded projects (Major) entitled "Vulnerability parameters of graphs and their applications in Biomedical Engineering".

With reference to the project sanctioned order no. MCC/RC-MRP-33/2021-22, I am glad to inform you that our project proposal entitled "Vulnerability parameters of graphs and their applications in Biomedical Engineering" has been approved a grant-in-aid not exceeding Rs.1,20,000/- for this project. A copy of the approved budget is attached herewith for your kind information.

| Sl.No | Head                                                                                                                                           | Total in Rupees                                 |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 1     | Non-Recurring(Capital Head)<br>1. Books<br>2. Journals(Publication)<br>3. Equipment                                                            | <br>5000<br>5000<br>.....                       |
| 2     | Recurring(General head)<br>1. Chemicals and Galssware<br>2. Contingency including special need<br>3. Hiring charges<br>4. Fieldwork and Travel | <br>.....<br><br>30,000<br>40,000<br><br>40,000 |
|       | Total                                                                                                                                          | 1,20,000                                        |

Encl; Sanction order (original)

With best wishes

*Vijaya lakshmi* - 13

Dr. Vijaya Lakshmi  
HEAD OF THE DEPARTMENT  
DEPARTMENT OF MATHEMATICS  
MOUNT CARMEL COLLEGE (AUTONOMOUS),  
58, PALACE ROAD, BANAGLORE - 560 052

"College with Potential for Excellence". UGC

College No: +91 80 2226 1759

E-mail: mails@mccblr.edu.in

Re-accredited with A+ by NAAC

Fax: +91 80 2228 6386, Placement: +91 80 2225 0978

Web: www.mccblr.edu.in



金研研  
令和4年3月9日  
9 March, 2022

SSN Institutions  
Dear Dr. Manickam Srinivasan

令和4年度研究部共同利用研究課題の審査結果について(通知)  
Review Results for FY2022 GIMRT Proposals  
of Research Divisions and Groups

先に申請のありました下記共同研究課題について、審査の結果「採択」となりましたので、お知らせします。

なお、本採択通知は課題代表者にのみ通知しますので、貴職から所属長、分担者ほか関係者にご連絡願います。

Thank you for GIMRT proposal application. I am pleased to inform you that your proposal has been accepted. Please notify this to your collaborator, your department head and other relevant persons.

1. 課題番号 Proposals Number : 202112-RDKGE-0503
2. 申請課題 Proposal Title :  
Computational and Experimental Investigations of Novel Heusler Thermoelectric Materials for Waste Heat Recovery

東北大学金属材料研究所  
所長 古原 忠  
Tadashi Furuvara  
Director of Institute for Materials Research, Tohoku University



Ref: CRS/2021-22/01/413

Date: 24-06-2022

**Sanction Order**

To,  
The Registrar/Principal/Financial Authority,  
Through Dr. Nafis Ahmed  
Sri Sivasubramaniya Nadar College of Engineering

**Subject: Collaborative Research Scheme(CRS) Project of UGC-DAE CSR entitle ':**  
*Investigations on Ag/Au nanoparticles decorated Au assisted PECVD grown Si nanowires for highly sensitive SERS substrate ' by Dr. Nafis Ahmed.*

Dear Madam/Sir,

In continuation to our sanction letter the CRS project submitted to UGC-DAE CSR by **Dr. Nafis Ahmed** of your institution has been approved by the competent authority. The principal collaborator from UGC-DAE CSR is **Dr. Vasant Sathe**. The details of the remittance are given below:

| Student fellowship(@<br>₹14,000/- pm+HRA)    | Consumable | Contingency | Total Amount | Date of remittance | UTR No.          |
|----------------------------------------------|------------|-------------|--------------|--------------------|------------------|
| ₹Nil                                         | ₹30,000    | ₹15,000     | ₹45000       | 2022-04-04         | SBIN322097937964 |
| No overheads are available under this scheme |            |             |              |                    |                  |

This project has been approved as per the guidelines given below:

1. This is a Collaborative Research Scheme (CRS) of UGC-DAE CSR. In view of the complex and involved nature of the experiments, any publication emerging under the project must be of collaborative in nature with due consents from the scientists at UGC-DAE CSR and/or DAE centres, and in consultation with the Principal Collaborator/Coordinator. Following phrase must be included in the acknowledgement: "This work was partially/fully carried out using the facilities of UGC-DAE CSR. The authors acknowledge the financial support from UGC-DAE CSR through a Collaborative Research Scheme (CRS) project number **CRS/2021-22/01/413**."
2. This project is sanctioned for **one year** but it may be extended on yearly basis subject to a total period of three years.
3. In case the CRS project has been approved without student fellowship, it will not be possible to grant student fellowship in subsequent years as well.
4. The PI must '**Apply for an Experiment Time**' through our online user portal <https://csruserportal.com/> for utilization of each experimental facility each time.
5. The project will be reviewed at the end of each year to consider sanction and financial allocation for the succeeding year.



**6. The release of grants for the subsequent years can be made only upon receipt of funds from UGC towards the scheme. A separate sanction order will be issued for the subsequent years.**

7. At the end of the financial year (i.e. by March 31) the PI should submit:

- (i) Utilization Certificate in the format provided at our website for the amount spent and
- (ii) A Statement of Expenditure duly signed by the Registrar/Principal/competent financial authority of your university/institution to the Centre-Director of respective Centre. The release of funds for the subsequent year(s) can only be made after receiving the above documents.

8. The UGC-DAE CSR will be able to reimburse the travel expenses to Project Investigators as per rules, limited to 2nd AC train fare visiting a centre on project work. However, the student participant is permitted for a sleeper class train fare by the shortest route and is as per prevailing norms of UGC-DAE CSR.

#### **Rules for selection of a CRS project fellow**

The CRS project fellow (if approved) should be made by an open selection procedure as per UGC guidelines. The recruitment procedure should be completed within 3 months after the release of the sanction order. The details for recruitment are given below:

| # | Designation                    | Remuneration  | Qualifications                                                                                                                                                                                                                                                                                                                                                                                          |
|---|--------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | CRS Project Fellow (Junior) -I | ₹14,000 + HRA | M.Sc. (not earlier than 3 years) with a minimum of 55% marks in the concerned subject ( <b>for Science</b> )<br>M.E. / M. Tech. (not earlier than 3 years) 1st Class ( <b>for Engineering</b> )                                                                                                                                                                                                         |
| 2 | CRS Project Fellow (Senior)-I  | ₹16,000 + HRA | After completion of 2 years as a <b>CRS Project Fellow (Junior) -I</b><br>+ at least one research paper in a reputed SCI journal<br>+ assessment of the student by a 3 member expert committee approved by the Centre-Director                                                                                                                                                                          |
| 3 | CRS Project Fellow (Junior)-II | ₹31,000 + HRA | <b>Same as (1)</b><br>+ valid (a) National Eligibility Tests- CSIR-UGC NET including lectureship(Assistant Professor) or GATE or(b) A selection process through National level examinations conducted by Central Government Department and their Agencies and Institutions.<br>+ Ph.D. registration of the student under the supervision of the PI at the University where PI's institute is affiliated |
| 4 | CRS Project Fellow (Senior)-II | ₹35,000 + HRA | After completion of 2 years as a <b>CRS Project Fellow (Junior)-II</b><br>+ at least one research paper in a reputed SCI journal<br>+ assessment of the student by a 3 member expert committee approved by the Centre-Director                                                                                                                                                                          |

1. All recruitment should be authorized by a selection committee as per rules of University/Institution in which the PI is working. The advertisement should be widely circulated electronically and a copy should be sent to the Principal Collaborator.

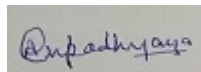
2. For appointing a student in the CRS project, the interview panel must be approved by the Centre-Director of the respective Centre. The PI should inform the interview schedule as least 2 weeks in advance. The entire process should be conducted in an online/hybrid mode.

3. A UGC-DAR CSR nominee along with Principal Collaborator is needed for all interviews and upgradations.

4. For all appointments, it has to be mentioned that it is on purely temporary basis and will co-terminate with the CRS project. Leave rules for the appointed fellow will be as per the host institution of PI.

5. Appointment of student in the project is not permitted in the second or third year of the project.
6. While appointing as well as upgrading, a copy of relevant documents including CV along with educational qualification documents (incl. NET/GATE, etc.), minutes of the selection committee/upgradation committee, appointment letter, joining report etc. must be send to the Centre-Director of the respective Centre.
7. The student appointed under this project should spend a substantial amount of time at UGC-DAE CSR.
8. Contingency fund to be utilized for computational work, purchase of stationary and other consumables pertaining to the concerned project. No grant is allocated for any capital equipment/asset.

Copy to: Through User Portal to: Director, concerned Centre-Director, User Office, Dr. Nafis Ahmed, Dr. Vasant Sathe, AO for remittance of funds



Administrative Officer-II  
(UGC-DAE CSR)



8

FILE NO. CRG/2021/002239  
SCIENCE & ENGINEERING RESEARCH BOARD

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

Dated: 21-Feb-2022

**ORDER**

Subject: Financial Sanction of the research project titled "Characterization of Novel Mutants of Human Protein Z-dependent Protease Inhibitor (ZPI): Potential Therapeutics for Hemophilia" under the guidance of Dr. Tanusree Sengupta, Chemistry, SSN College of Engineering, Sri sivasubramaniya nadar college of engineering rajiv gandhi salai (omr), kalavakkam, Kanchipuram, Tamil nadu-603110 and by Dr. N Manoj, Associate Professor, Department Of Biotechnology, Indian Institute Of Technology Madras - Release of 1st grant.

Sanction of Science and Engineering Research Board (SERB) is hereby accorded to the above mentioned project at a total cost of Rs. 6046392/- (Rs. Rupees Sixty Lakh Forty Six Thousand Three Hundred and Ninety Two only Only) with break-up of Rs. 1250000/- under Capital (Non-recurring) head and Rs. 4796392/- under General (Recurring) head for a duration of 36 months. The items of expenditure for which the total allocation of Rs. 6046392/- has been approved are given below:

The following budget may be considered for SSN College Of Engineering, Sri Sivasubramaniya Nadar College Of Engineering Rajiv Gandhi Salai (OMR), Kalavakkam

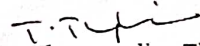
| S. No     | Head                                                                                                                                     | Total (in Rs.)             |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>A</b>  | <b>Non-recurring</b>                                                                                                                     |                            |
| 1         | Equipment<br>-> Autoclave<br>-> Dry bath<br>-> Thermal Cycler<br>-> UV transilluminator<br>-> Orbital shaker incubator                   | 850000                     |
| <b>A'</b> | <b>Total (Non-Recurring)</b>                                                                                                             | <b>850000</b>              |
| <b>B</b>  | <b>Recurring Items</b>                                                                                                                   |                            |
| 1         | Recurring - I (Manpower)<br>Recurring - II : ( Consumables, Travel, Contingencies)<br>Recurring - III : Scientific Social Responsibility | 1443360<br>600000<br>10000 |
| 2         | Recurring - IV : (Overhead Charges)                                                                                                      | 290336                     |
| <b>B'</b> | <b>Total (Recurring)</b>                                                                                                                 | <b>2343696</b>             |
| <b>C</b>  | <b>Total cost of the project (A' + B')</b>                                                                                               | <b>3193696</b>             |

The following budget may be considered for Indian Institute Of Technology Madras, I.I.T. Post Office Chennai

| S. No     | Head                                                                                                                                   | Total (in Rs.)         |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>A</b>  | <b>Non-recurring</b>                                                                                                                   |                        |
| 1         | Equipment<br>-> Dry shipper CX-100<br>-> Shipping case CX100<br>-> Wizard Cubic LCP Kit                                                | 400000                 |
| <b>A'</b> | <b>Total (Non-Recurring)</b>                                                                                                           | <b>400000</b>          |
| <b>B</b>  | <b>Recurring Items</b>                                                                                                                 |                        |
| 1         | Recurring - I (Manpower)<br>Recurring - II ( Consumables, Travel, Contingencies)<br>Recurring - III : Scientific Social Responsibility | 1443360<br>750000<br>0 |
| 2         | Recurring - IV (Overhead Charges)                                                                                                      | 259336                 |
| <b>B'</b> | <b>Total (Recurring)</b>                                                                                                               | <b>2452696</b>         |
| <b>C</b>  | <b>Total cost of the project (A' + B')</b>                                                                                             | <b>2852696</b>         |

2. Sanction of the grant is subject to the conditions as detailed in Terms & Conditions available at website ( www.serb.gov.in).

3. Overhead expenses are meant for the host Institute towards the cost for providing infrastructural facilities and general administrative support etc. including benefits to the staff employed in the project
4. While providing operational flexibility among various subheads under head Recurring-A, it should be ensured that not more than Rs. 1.5 lakh each should be spent for travel and contingency.
5. As per rule 211 of GFR, the accounts of project shall be open to inspection by sanctioning authority/audit whenever the institute is called upon to do so.
6. The institute will furnish to the SERB, New Delhi, separate Utilization certificate(UCs) financial year wise to the SERB for Recurring (Grants-in-aid General) & Non-Recurring (Grants for creation of capital assets) and an audited statement of accounts pertaining to the grant immediately after the end of each financial year.
7. The manpower sanctioned in the project, if any is co-terminus with the duration of the project and SERB will have no liability to meet the fellowship and salary of supporting staff if any beyond the duration of the project
8. The institute will maintain separate audited accounts for the project. A part or whole of the grant must be kept in an interest earning bank account which is to be reported to SERB. The interest thus earned will be treated as credit to the institute to be adjusted towards further installment of the grant.
9. The sanctioned equipments and consumables would be produced as per GFR 2005 and its disposal would be done with prior approval of SERB.
10. The institute may refund any unspent balance to SERB by means of a Demand Draft favoring "FUND FOR SCIENCE AND ENGINEERING RESEARCH" payable at New Delhi.

  
 (Dr. Thangaradjou T)  
 Scientist F  
 msls@serb.gov.in

To,  
Under Secretary  
SERB, New Delhi

Copy forwarded for information and necessary action to: -

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | The Principal Director of Audit, A.G.C.R. Building, 11th Floor I.P. Estate, Delhi-110002                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2. | Sanction Folder, SERB, New Delhi.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 3. | File Copy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4. | <p>Dr. Tanusree Sengupta<br/>Chemistry<br/>SSN College of Engineering, Sri sivasubramaniya nadar college of engineering rajiv gandhi salai (omr),<br/>kalavakkam, Kanchipuram, Tamil nadu-603110<br/>Email: tanusrees@ssn.edu.in<br/>Mobile: 919940401250</p> <p>Dr. N Manoj<br/>Department Of Biotechnology<br/>Indian Institute Of Technology Madras<br/>(Start date of the project may be intimated by name to the undersigned. For guidance, terms &amp; Conditions etc.<br/>Please visit <a href="http://www.serb.gov.in">www.serb.gov.in</a>.)</p> |
| 5. | <p>PRINCIPAL,<br/>SSN College Of Engineering, Sri Sivasubramaniya Nadar College Of Engineering Rajiv Gandhi Salai (OMR),<br/>Kalavakkam<br/>Dean ICSR,<br/>Indian Institute Of Technology Madras, I.I.T. Post Office Chennai</p> <p>(Receipt of Grant may be intimated by name to the undersigned)</p>                                                                                                                                                                                                                                                   |

  
 (Dr. Thangaradjou T)  
 Scientist F  
 msls@serb.gov.in



No. DST/INT/SL/P-28/2021

Government of India  
Ministry of Science and Technology  
Department of Science & Technology  
(International Cooperation Division)

\*\*\*\*\*

Technology Bhavan,  
New Mehrauli Road,  
New Delhi-110016  
Date: 27.09.2021

**ORDER**

**Subject:** Implementation of Indo-Sri Lanka Project proposal entitled, “Design, Development and Experimental Evaluation of Highly Integrated Multi-Standard Antennas for MIMO Implementation in Automobiles as a Part of Intelligent Transport System”, submitted by Dr. Malathi Kanagasabai, Professor, Department of Electronics and Communication Engineering Anna, University, Guindy Campus, Sardar Patel Road, Chennai-600025, India,

Sanction of the President is hereby accorded for incurring an expenditure not exceeding Rs.20,88,364/- (Rupees Twenty Lakh Eighty Eight Thousand Three Hundred Sixty Four Rupees Only) for implementation of the Indo-Sri-Lanka joint project entitled, “Design, Development and Experimental Evaluation of Highly Integrated Multi-Standard Antennas for MIMO Implementation in Automobiles as a Part of Intelligent Transport System”, coordinated by Dr. Malathi Kanagasabai, Professor, Department of Electronics and Communication Engineering Anna, University, Guindy Campus, Sardar Patel Road, Chennai-600025, India, in collaboration with Dr. Jeevani Jayasinghe, Senior Lecturer, Department of Electronics, Wayamba, University of Sri Lanka., for a total duration of 2 years from the date of issue of the Sanction Order. The detailed breakups of the grant for General as well as Capital Components are given below:

|                   |   |                  |
|-------------------|---|------------------|
| General Component | : | Rs.20, 88,364/-  |
| Capital Component | : | Rs. ____N.A.____ |

2. Under the existing terms and conditions of the PoC, sending side cover international travel expenses to the state of the receiving country. The receiving side will make local logistic arrangements including local travel and stay arrangements (halt expenses, per diem etc.) in the country visited. The break-up of approved expenditure is as indicated below:



| S. no | Items of Expenditure                                                                                                           | 1 <sup>st</sup> year<br>(I <sup>st</sup> 6 months)<br>INR | 1 <sup>st</sup> year<br>(II <sup>nd</sup> 6 months)<br>INR | 2 <sup>nd</sup> year<br>INR | Total<br>INR     |
|-------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------|-----------------------------|------------------|
| 1     | Manpower @ 01 JRF for two years<br><br>Rs.31,000/- per month and 24 percent HRA i.e., Rs.7440/-<br><br>Total=Rs.38,440/- month | 4,61,280                                                  |                                                            | 4,61,280                    | 9,22,560         |
| 2     | Mobility of Indian Scientist to Sri Lanka for 2 visits per year<br><br>(*as calculated below)                                  | Nil                                                       | 1,30,000                                                   | 1,30,000                    | 2,60,000         |
| 3     | Mobility of Sri-Lankan scientist to India for 2 visits per year<br><br>(**as calculated below)                                 | Nil                                                       | 1,50,000                                                   | 1,50,000                    | 3,00,000         |
| 4     | Contingency                                                                                                                    | 50,000/-                                                  | -                                                          | 50,000                      | 1,00,000         |
| 5.    | Consumables & Minor equipment                                                                                                  | 2,00,000                                                  | -                                                          | 2,00,000                    | 4,00,000         |
| 6.    | <b>Total</b>                                                                                                                   | <b>7,11,280</b>                                           | <b>2,80,000</b>                                            | <b>9,91,280</b>             | <b>19,82,560</b> |
| 7     | Overhead @ 8%                                                                                                                  | 52,902                                                    | -                                                          | 52,902                      | 1,05,804         |
| 8     | <b>Grand total</b><br><b>(column 6 + column 7)</b>                                                                             | <b>7,64,182</b>                                           | <b>2,80,000</b>                                            | <b>10,44,182</b>            | <b>20,88,364</b> |

\*Breakup of expenditure on each visit of Indian Scientist visiting Sri Lankan collaborative institute is calculated broadly as below:

|                                                                                                    |                          |
|----------------------------------------------------------------------------------------------------|--------------------------|
| a. International Fare Delhi-Colombo-Delhi<br>By excursion /economy class (cheapest available fare) | Rs 40,000                |
| b. Medical Insurance (silver class)                                                                | Rs 5,000                 |
| c. Domestic Travel related to visit                                                                | Rs 10,000                |
| d. Visa Fee (as per actual)                                                                        | Rs 10,000                |
| <b>Total:</b>                                                                                      | <b><u>Rs.65, 000</u></b> |



**\*\* Break up of expenditure on each visit of Sri Lankan Scientists and project staff visiting Indian collaborative Institute (for an average duration of one month).**

|                                   |                         |
|-----------------------------------|-------------------------|
| a. Per diem@ RS 2500*14 days      | Rs 35, 000              |
| b. Accommodation@ Rs 2500*14 days | Rs 35,000               |
| c. Local Transport                | Rs 5000                 |
| <b><u>Total:</u></b>              | <b><u>Rs 75,000</u></b> |

3. Sanction of the President is hereby accorded for release of 1st installment amounting to Rs.7, 64,182/- (**Rupees Seven Lakh Sixty Four Thousand One Hundred Eighty Two Rupees Only**) to the grantee Institute. The amount of grant will be drawn by the Drawing and Disbursing Officer, DST and will be disbursed to, Varanasi, India. The bank details for electronic transfer of funds through RTGS are given below:

|   |                                   |                                                                                     |
|---|-----------------------------------|-------------------------------------------------------------------------------------|
| 1 | Agency name as registered         | The Director, Centre for International Relations<br>Anna University, Chennai-600025 |
| 2 | Account Holders name/ designation | The Director, Centre for International Relations<br>Anna University, Chennai-600025 |
| 3 | Name of Bank and Address          | State Bank of India, Anna University Chennai-<br>600025, CEG Campus                 |
| 4 | Bank Account Number               | 31753273528                                                                         |
| 5 | IFSC Code                         | SBIN0006463                                                                         |
| 7 | Email ID                          | malijan2011@gmail.com                                                               |

**Condition for placing of grant amount:**

4. The institute will maintain separate audited account for the project and the amount of grant will be kept in a bank account earning interest. The interest earned should be reported to DST while submitting the (financial year wise) Statement of Expenditure/Utilization Certificate.

**As per Financial Rule 230 (8), "All interests or other earnings against Grants-in-aid or advances (other than reimbursement) released to any grantee institution should be mandatorily remitted to the Consolidated Fund of India immediately after finalization of the accounts. Such advances should not be allowed to be adjusted against future releases".**

**Conditions for submission of SE/UC and Progress report:**

5. (a) The grantee organisation will furnish to the Department of Science & Technology, financial year wise Utilization Certificate (UC) in the proforma prescribed as per GFR 2017 and audited statement of expenditure (SE) along with up to date progress report at the end of each financial year duly reflecting the interest earned / accrued on the grants received under the project. This is also subject to the condition of submission of the final statement of expenditure, utilization certificate and project completion report within one year from the scheduled date of completion of the project.

*Chau*



(b) While submitting Utilisation Certificate/Statement of Expenditure, the organisation has to ensure submission of supporting documentary evidences with regard to purchase of equipment/capital assets as per the provisions of GFR 2017. Subsequent release of grants under the project shall be considered only on receipt of the said documents.

(c) A transparent procurement procedure in line with the Provisions of General Financial Rules 2017 will be followed by the Institute/ Organisation under the appropriate rules of the grantee organisation while procuring capital assets sanctioned for the above-mentioned project and a certificate to this effect will be submitted by the Grantee organisation immediately on receipt of the grant;

6. The grantee organisation will have to enter & upload the Utilization Certificate in the PFMS portal besides sending it in physical form to this Division. The subsequent/final instalment will be released only after confirmation of the acceptance of the UC by the Division and entry of previous Utilization Certificate in the PFMS.

7. In the event grant has been released under capital head through separate sanction order under the same project for purchase of equipment(s), separate SE/UC has to be furnished for the released Capital head grant.

**Conditions of Assets (if any):**

8. (a) DST reserves sole rights on the assets created out of grants. Assets acquired wholly or substantially out of government grants (except those declared as obsolete and unserviceable or condemned in accordance with the procedure laid down in GFR 2017), shall not be disposed of without obtaining the prior approval of DST.

(b) The equipment/instrument shall have to be purchased within twelve months from the date of release of the capital grant. Fresh permission shall have to be sought from DST, in the event, the Institute fails to purchase the equipment/instrument within the prescribed period of twelve months from the date of release of sanctioned amount.

**Conditions for International Visits:**

9. All project related visits to be undertaken by the Scientists from either side in connection with the implementation of the project shall require prior approval from this Department separately on a case to case basis before any expenditure is incurred in this regard.

10. As per MoF instructions, it has been decided that in all cases of air travel, both domestic and international, where the Government of India bears the cost of air passage, the officials concerned may travel only by Air India. For travel to stations not connected by Air India, the officials may travel by Air India to the hub/point closest to their eventual destination, beyond which they may utilize the services of another airline which should also preferable be an alliance partner of Air India.

*Chauhan*



11. The foreign visit of the PI (being non-official) would be subject to approval by the competent authority as mentioned in the guidelines issued by DoE vide OM dated 5<sup>th</sup> January, 2016. The travel may be considered once the travel restrictions were lifted by the Govt.

**Other Conditions:**

12. The account of the grantee organisation shall be open to inspection by the sanctioning authority and audit (both by C&AG of India and Internal Audit by the Principal Accounts Office of the DST), whenever the organisation is called upon to do so, as laid down under Rule 236(1) of General Financial Rules 2017.

13. Due acknowledgement of technical support / financial assistance resulting from this project grant should mandatorily be highlighted by the grantee organisation in bold letters in all publications / media releases as well as in the opening paragraphs of their Annual Reports during and after the completion of the project.

14. In case the scheme provides for payment of honorarium / remuneration / fellowship / scholarship to the PI, a para may suitably be incorporated in the DSO to the effect that "PI is not drawing any emoluments/ salary/fellowship from any other project either supported by DST or by any other funding agency.

15. As per the GFR 2017 Rule 230 (8) the Grantee Institute should ensure that all the interests or other earnings against Grant-in-Aid or advances (other than reimbursement) released to any Grantee institution should be mandatorily remitted to the Consolidated Fund of India (through Non-Tax Receipt Portal (NTRP), i.e. [www. Bharatkhoosh.gov.in](http://www.Bharatkhoosh.gov.in)) immediately after finalisation of the accounts, as it shall not be adjusted towards future release of Grant. A certificate to the effect shall have to be submitted along with Statement of Expenditure / Utilisation Certificate for considering subsequent release of Grant Closure of Project account.

16. GI should also follow Rule 230 (17) of GFR, 2017 concerning reservation of SC/ST/OBC, if applicable.

17. Goods (consumable/equipment) available in Government eMarket (GeM) Portal are to be procured mandatorily online through GeM only.

**18. Failure to comply with the terms and conditions of the Bond will entail full refund with interest in terms of Rule 231 (2) of GFR 2017.**

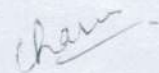
19. The expenditure involved is debatable to **Demand No.88**, Department of Science & Technology for the financial year **2021-22**:

|                                      |   |                                            |
|--------------------------------------|---|--------------------------------------------|
| 3425                                 | : | Other Scientific Research (Major Head)     |
| 60                                   | : | Others                                     |
| 60.798                               | : | International Cooperation (Minor Head)     |
| 14                                   | : | Research & Development                     |
| 14.00.31                             | : | Grants-in-aid General for the year 2021-22 |
| (Previous: ICD-3425.60.798.12.00.31) |   |                                            |

*Chauhan*



20. This sanction order being 1<sup>st</sup> installment for implementation of this project, no SE/UC is due from the grantee institution against this project.
21. This issues with the concurrence of IFD vide their Diary No **2243/IFD**, dated: **27.09.2021**
22. As per Rule 234 of GFR 2017, this sanction has been entered at S. No. **104**...in the register of grants maintained in the Division.
23. PI to procure consumable and permanent equipment with price implication in accordance with provisions contained in GFR-2017 as far as possible.
24. Continuation of the Project beyond 31st March 2021 will be subject to appraisal and approval of the continuation of the Umbrella Scheme "Research and Development" under which the Project is funded.
25. All grantee organizations in respect of various Research and Development Schemes in DST has to compulsorily use Expenditure Advance & Transfer (EAT) Module of Plan Finance Management System (PFMS) for maintaining expenditure and processing further releases.



(Dr. Charu Agarwal)  
Scientist-C  
International Cooperation Division, DST

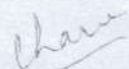


To,

The Pay & Accounts Officer,  
Department of Science & Technology,  
New Delhi-110016

**Copy to:**

1. Office of the Principal Director of Audit, AGCR Bldg., IP Estate, New Delhi-110002
2. Cash Section (3 copies), DST
3. I.F.D/Accounts Section, DST
4. **Dr. Dr. Malathi Kanagasabai, Professor, Department of Electronics and Communication Engineering, Anna University, Guindy Campus, Sardar Patel Road, Chennai-600025**
5. **Director, Anna, University, Guindy Campus, Sardar Patel Road, Chennai-600025**
6. Sanction Folder
7. Project File
8. Office of Head IC Division



(Dr. Charu Agarwal)  
Scientist-C  
International Cooperation Division, DST





दूरभाष / Tel : 26962819, 26567373,  
26562134, 26562122 (EPBAX)  
फैक्स / Fax : 26569908, 26515637,  
26863847, 26862418  
वेबसाइट/website : www.dst.gov.in

भारत सरकार  
विज्ञान और प्रौद्योगिकी मंत्रालय  
विज्ञान और प्रौद्योगिकी विभाग  
टेक्नोलॉजी भवन, नया महरौली मार्ग  
नई दिल्ली-110 016

GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
TECHNOLOGY BHAVAN, NEW MEHRAULI ROAD  
NEW DELHI-110 016

Dated 22.10.2021

File No. DST/INT/SL/P-28/2021

**Dr. Malathi Kanagasabai, Professor,**  
Department of ECE College of Engineering Guindy,  
Anna, University, Sardar Patel Road, Gandhi Mandapam,  
Chennai- 600025, India.

Subject: The Indo-Sri Lanka Joint project entitled "**Design, Development and Experimental Evaluation of Highly Integrated Multi-Standard Antennas for MIMO Implementation in Automobiles as a Part of Intelligent Transport System**" reg.

Dear Professor,

As per the project proposal submitted by the PI, **Dr. Gulam Nabi Alsath**, Associate Professor, Department of Electronics and Communication Engineering, Sri Sivasubramaniya Nadar (Ssn) College Of Engineering, Chennai, Tamil Nadu - 603110 and **Dr. Y V Ramana Rao**, Professor, Department of Electronics and Communication Engineering, Anna University, Chennai, Tamil Nadu-600025 are the **Co-PIs** of the project.

It will entirely be the role and responsibility of the Principal Investigator of the Project to disburse funds to Co-PIs, if needed, supervise their project activities, collect fund utilization reports and project progress reports from them and submit to this Department in consolidated form on completion of each financial year as per the approved project plan and provisions in GFR 2017.

Department of Science and Technology will coordinate on the project directly with the PI involved in the Project.

All other terms and conditions of the Sanction Order dated 27.09.2021 shall remain unchanged.

This issues with the approval of Head (ICD), DST.

*Charu*  
22/10/2021  
(Dr. Charu Agarwal)  
Scientist-C/DST



To,

**The Pay & Accounts Officer**  
**Ministry of Science and Technology**  
**Department of Science and Technology**  
**New Delhi-110016**

Copy to:

1. Office of the Principal Director & Audit, 3rd Floor, AGCR Building, IP Estates, New Delhi
2. Cash Section, DST
3. IFD, DST
4. **Dr. Malathi Kanagasabai, Professor**, Department of ECE College of Engineering Guindy, Anna, University, Sardar Patel Road, Gandhi, Mandapam, Chennai- 600025, India.
5. **The Registrar**, Anna, University, Sardar Patel Road, Gandhi, Mandapam, Chennai- 600025
6. **Dr. Gulam Nabi Alsath**, Department of Electronics And Communication Engineering, Sri Sivasubramaniya Nadar (Ssn) College of Engineering Chennai, Tamil Nadu- 603110
7. **Dr. Y V Ramana Rao**, Professor, Department of Electronics and Communication Engineering, Anna University, Chennai, Tamil Nadu- 600025
8. Sanction Folder/Project File
9. Head IC Division

*Chauhan*  
*22/10/2024*

**इलेक्ट्रॉनिक्स तथा रेडार विकास  
स्थापना**

भारत सरकार – रक्षा मंत्रालय  
रक्षा अनुसंधान तथा विकास संगठन  
पो.बा.स. 9324, सी.वी. रामन नगर



आई एस ओ 9001-2015 प्रमाणित  
ISO 9001 : 2015 Certified

**Electronics & Radar Development  
Establishment**

Govt of India, Ministry of Defence  
Defence Research & Development Organisation  
P.B. No.9324, C V Raman Nagar  
Bengaluru – 560 093, India

Fax : 2524 2916  
Phone : 2524 1959 / 2502 5331  
E-Mail : director@lrde.drdo.in

09 July 2021

No.44418 /CAPSI/CG/RTMD

The Principal  
Sri Sivasubramaniya Nadar College of Engineering  
Kalavakkam – 603110  
Tamilnadu.

Kind Attn: Dr. Krishnasamy T. Selvan, Professor

Sir,

**“DESIGN OF METASURFACE BASED SHARED APERTURE PHASED ARRAY  
ANTENNA OPERATING IN S & X BANDS”**

Refer your Summary of Offer Letter dated 29/06/2021

2. Contract for Acquisition of Research Services (CARS) between LRDE and Sri Sivasubramaniya Nadar College of Engineering , Tamilnadu 603110, bearing No. LRDE/CARS-84/RAMD/2021 dated 09/07/2021 on the subject is sent herewith for your necessary action please.

Thanking you,

*A. Vengadarajan*  
(Dr. A. Vengadarajan)  
Sc G  
For DIRECTOR

The C D A (R&D) (Through MMFD (AG))  
CV Raman Nagar  
Bangalore-560 093

O/o Director General (ECS)  
Ministry of Defence, DRDO  
LRDE Campus  
CV Raman Nagar  
Bangalore-560093

The Director  
Dte of ER & IPR  
Ministry of Defence, DRDO Bhavan  
Rajaji Marg, New Delhi – 110 011

The Director  
Dte of Planning & Coordination (DP&C)  
Ministry of Defence, DRDO Bhavan  
Rajaji Marg, New Delhi - 110 011

The Director  
Dte of Finance and Material Management  
(DFMM)  
Ministry of Defence, DRDO Bhavan  
Rajaji Marg, New Delhi - 110 011

Internal copies to :  
AIG  
RAMD





# CONTRACT FOR ACQUISITION OF RESEARCH SERVICES (CARS)

By signature of authority identified at (12) below, DRDO hereby Contracts on the Research Service Provider identified at (3), the provision of the Research Services described at (7), within the Time stated, Payments and subject to other conditions overleaf, as follows:

|                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                      |                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| 1) Short title of Research Service to be provided:<br><b>DESIGN OF METASURFACE BASED SHARED APERTURE PHASED ARRAY ANTENNA OPERATING IN S AND X BANDS.</b>                                                                                                                                                                                                                                                                          |  | Contract No.: LRDE/CARS - 84/RAMD/2021<br>Date: 09/07/2021                                                                                                                                                                           |                            |
| 2) RSQR Ref: No.& Date :<br><b>44418/CARS/CG/RTMD dated 03 June 2021</b>                                                                                                                                                                                                                                                                                                                                                           |  | Issuing DRDO Establishment :<br>LRDE, CV Raman Nagar, Bangalore-93                                                                                                                                                                   | Dates of CARS Amendments : |
| 3) Name and address of Research Service Provider (RSP):<br><b>Dr. Krishnasamy T. Selvan, Professor<br/>Sri Sivasubramaniya Nadar College of Engineering,<br/>Kalavakkam, Chennai, Tamilnadu. – 603110</b><br><br>Phone: <b>9952008420</b><br>Fax :<br>Email : <b>selvankt@ssn.edu.in</b>                                                                                                                                           |  | 4) RSP's Offer Ref.: <b>NIL</b><br><br>Date: <b>29/6/21</b>                                                                                                                                                                          |                            |
| 5) This contract will require a formal amendment if the following key professionals are not available to RSP                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                      |                            |
| 6) RSP is authorized to engage these professionals as research consultants (names, institutes / companies) : <b>NIL</b>                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                      |                            |
| 7) Principal technical features of Research Service to be provided : As per Appendix-A                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                      |                            |
| 8) DRDO will make available the following DRDO-owned equipment to RSP : <b>NIL</b>                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                      |                            |
| 9) The technical performance of this contract shall be complete when RSP submits the Final Report before (date)                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                      | <b>18 Months</b>           |
| 10.1) Expenditure on items below shall not exceed sums shown against each                                                                                                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                      | Rs.                        |
| (a) Personnel                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                      | <b>5,88,000/-</b>          |
| (b) Equipment                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                      | <b>--</b>                  |
| (c) Others                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                      | <b>2,35,200/-</b>          |
| Sub-Total                                                                                                                                                                                                                                                                                                                                                                                                                          |  |                                                                                                                                                                                                                                      | <b>8,23,200/-</b>          |
| Goods Services Tax inclusive (claimed along with Milestones payment proportionately)                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                                                                                                      | <b>1,48,176/-</b>          |
| Total :                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                      | <b>9,71,376/-</b>          |
| 10.2) Schedule of Payments                                                                                                                                                                                                                                                                                                                                                                                                         |  | Date                                                                                                                                                                                                                                 | Rs.                        |
| (a) Initial advance (25%)                                                                                                                                                                                                                                                                                                                                                                                                          |  | To*                                                                                                                                                                                                                                  | <b>2,42,844/-</b>          |
| (b) at Performance Milestone I of RSQR (25%)                                                                                                                                                                                                                                                                                                                                                                                       |  | To + 6                                                                                                                                                                                                                               | <b>2,42,844/-</b>          |
| (c) at Performance Milestone II of RSQR (25%)                                                                                                                                                                                                                                                                                                                                                                                      |  | To + 12                                                                                                                                                                                                                              | <b>2,42,844/-</b>          |
| (d) at Performance Milestone III of RSQR (25%)                                                                                                                                                                                                                                                                                                                                                                                     |  | To + 18                                                                                                                                                                                                                              | <b>2,42,844/-</b>          |
| Payments will be made within 45 days of receipt by L/E/P of contingent Bill<br>*To will be one month from the date of signing the contract.                                                                                                                                                                                                                                                                                        |  | Total                                                                                                                                                                                                                                | <b>9,71,376/-</b>          |
| 11) DRDO will deem this contract, including amendments thereto, to have been consummated when signed below by the authority of the academic institution (e.g. Registrar) competent to enter into this contract:<br><br><br>[Sign over seal]<br>Name: <b>Dr. V. E. ANNAMALAI</b><br>Designation: <b>Principal</b><br><b>Sri Sivasubramaniya Nadar College of Engineering<br/>Rajiv Gandhi Salai (OMR)<br/>Kalavakkam - 603 110.</b> |  | 12) Signature of L/E/P Contract administrator:<br><br>Name: <b>Dr. A VENGADARAJAN</b><br>Designation: <b>SCIENTIST 'G'</b><br>Address: <b>LRDE, CV Raman Nagar, Bangalore-560093</b><br>Ph : <b>25241959</b> , Fax: <b>2524 2916</b> |                            |

LRDE, CV Raman Nagar, Bangalore-560093

**Exhibit 1**  
**PROJECT DESCRIPTION**  
CIESPL-SSN -2022-003

Upon execution by the Parties below, the Project specified herein shall be awarded and performed in accordance with the Master Sponsored Research Agreement (“Agreement”), effective\_10<sup>th</sup> December 2021 (which is incorporated herein in its entirety), between SSN College of Engineering (hereinafter, “Institute”) and Caterpillar India Engineering Solutions Private Limited (hereinafter, “Caterpillar”).

1. Project Title: Scalable Mobile Application for Performing Full Text Search(FTS) in SQLite Database
2. Statement of Work: See attached **Annexure-A**
3. Principal Investigator: Dr. Chitra Babu, Professor and Head,  
Ms. S.Rajalakshmi, Assistant Professor,  
Ms.S.Angel Deborah , Assistant Professor,
4. Term/Period of Performance: 7 months
5. Amount of Research Support (Direct Costs and Indirect Costs), Payment Provisions: INR 1,87,000/-
6. Specified Deliverable Items (if any): As per Annex-A
7. Institute Pre-Existing Intellectual Property and open-source works of authorship:
8. Caterpillar Equipment Loans or Gifts (if any): None
9. Proposed Caterpillar Visitor(s) (if any), Duration of Visit: TBD
10. Caterpillar Liaison / Contact Responsible for the Project: Mr. Antony Sebastian,

Project Authorization:

CATERPILLAR INDIA ENGINEERING  
SOLUTIONS PRIVATE LIMITED (CIESPL)



Authorized Signature

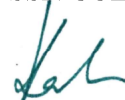
Bansi Phansalkar, Director - CIESPL  
Name & Title

04/02/2022

Date

  
28/1/2022

SSN COLLEGE OF ENGINEERING



Authorized Signature

Dr. Kala Vijayakumar, President – SSN Institutions  
Name & Title

28/01/2022

Date

REVIEWED AND ACCEPTED:



Principal Investigator



## Exhibit 2

### CATERPILLAR'S STANDARD SETTLEMENT SCHEDULE

Caterpillar shall pay SSN the respective amount after completion and upon receipt of deliverables for each milestone specified in the table below.

| Milestone          | Deliverables                                          | Timeline                  | Cost (INR)      |
|--------------------|-------------------------------------------------------|---------------------------|-----------------|
| M1                 | Proof of concept for FTS in desktop/mobile            | 3rd week of November 2021 | 25,000          |
| M2                 | Generate and model data                               | 3'd week of December 2022 | 30,000          |
| M3                 | A system to retrieve data using normal search and FTS | 2nd week of January 2022  | 60,000          |
| M4                 | Front end Development and Pagination                  | 4th week of January 2022  | 30,000          |
| M5                 | System that works on heterogeneous platform           | 2nd Week of February 2022 |                 |
| <b>Grand Total</b> |                                                       | <b>Total</b>              | <b>1,87,000</b> |

\*Refer Annexure-A for further details

**ANNEXURE -A**

**Project Proposal**

**CIESPL-SSN-2022-003**



## Annexure – A

### Project Proposal for

#### Scalable Mobile Application for Performing Full Text Search(FTS) in SQLite Database

Submitted to Caterpillar on 09-12-2021

#### 1. Statement of Work:

##### Problem Statement:

A scalable mobile application should be developed which is capable of searching through the HTML content that is stored in a mobile database such as SQLite in an offline mode. This application should work in various mobile environments such as Android, iOS and Windows.

##### Detailed Summary:

The objective of this project is to develop a scalable mobile application that has the ability to search across the HTML content which is stored in a mobile database such as SQLite. The mobile device user initially downloads all the relevant documents such as operation manuals and other pertinent documentations. It should not be stored as flat files in the mobile device.

When the user is in the field, he/she may not have the internet connection. Hence, there should not be a necessity for the mobile device to connect to any server for performing this search. The search should happen entirely in an offline mode. The response time for producing the results should not exceed 5 seconds even when the database size becomes 10 GB.

The result of a search query should be in a predetermined order and it should have 50 characters before and after the exact keyword(s). The search should not be performed on the HTML semantic tags.

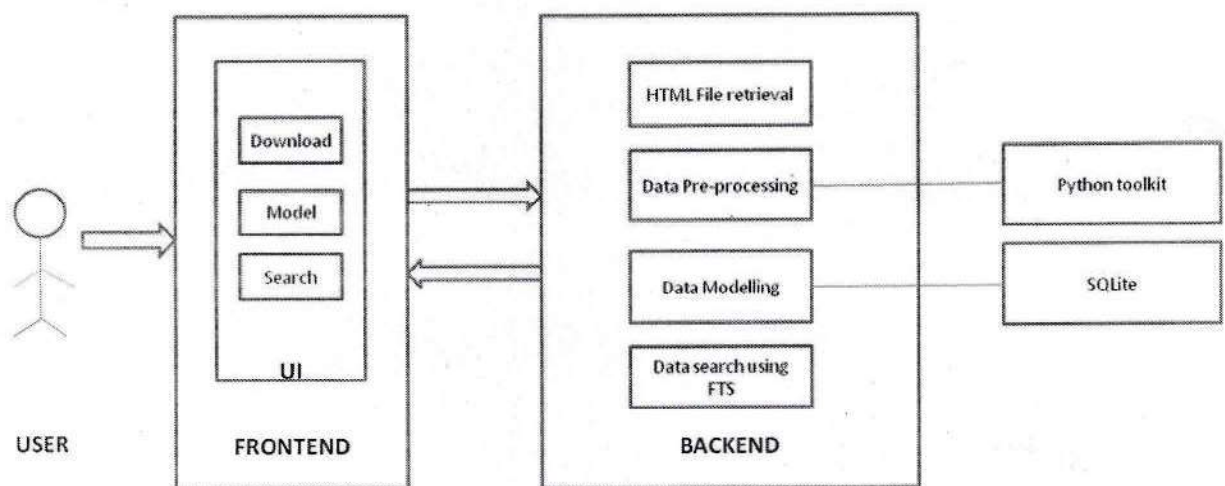
A simplistic minimal UI needs to be developed, with search bar, order by and filter options, and the time taken for the search query and pagination to present the search results in multiple pages without overwhelming the user. Optionally, the size of the database that is being searched, can also be displayed. Optionally, an *order by* feature can be provided to the end-user. Filtering options should be provided for end-users to make the search more effective. Join queries should involve at least 5 different tables.

For queries that contain complex keywords, the document needs to be searched for an exact matching string. Optionally, the keywords can also be tokenized for queries that contain

complex keywords by using delimiters and can be subsequently searched on individual tokens. This tokenization should exclude the duplicate search results resultant from hits on searching for individual tokens while presenting to the user. If the retrieved set of results is more than 50 records, then pagination should be implemented to display the results incrementally.

As a proof of concept, this can initially be developed with biodata of students belonging to different departments instead of the actual Caterpillar operation manuals and documentations. The mobile application can be initially developed for the Android platform. It can later be extended to other platforms such as iOS and Windows.

## 2. Framework:



**Figure 1: System Framework**

## 3. Steps to be taken:

1. Study and select the appropriate tech stack that satisfies the project requirements.
2. Analyse the working of FTS in desktop environment.
3. Feasibility study of FTS implementation in mobile environment.
4. Generate the required data using python script
5. Apply techniques to pre-process the data to remove the HTML semantic tags.
6. Design an appropriate schema to store in mobile SQLite.
7. Model the pre-processed data into SQLite format.
8. Transform the SQLite data into FTS format.
9. Perform normal search in single table of the database.
10. Perform FTS search in single table of the database.
11. Retrieve the result of a search query in a predetermined order and it should have 50 characters before and after the exact keyword(s).
12. Analyse the response time for producing the results and display it along with the results.
13. Design the User Interface for the scalable mobile app.
14. Apply pagination concept on search result.
15. Validate the scalable mobile app on heterogeneous platforms.



#### 4. Proposed Milestones:

##### Milestone 1:

FTS working in Desktop /Mobile

##### Milestone 2:

Data Generation

Data modelling

##### Milestone 3:

Single Table search

Normal search and FTS analysis

Results with 50 characters before and after the search term

##### Milestone 4:

UI Design

System to support pagination

##### Milestone 5:

System that works on heterogeneous platform

#### 5. Principal Investigator:

**Dr. Chitra Babu, Professor and Head,**

**Ms. S.Rajalakshmi, Assistant Professor,**

**Ms.S.Angel Deborah , Assistant Professor,**

Department of CSE,

Sri Sivasubramaniya Nadar College of Engineering.

Email: [chitra@ssn.edu.in](mailto:chitra@ssn.edu.in), [rajalakshmis@ssn.edu.in](mailto:rajalakshmis@ssn.edu.in), [angeldeborahs@ssn.edu.in](mailto:angeldeborahs@ssn.edu.in)

#### 6. Term/Period of Project: 7 months

#### 7. Amount of Research Support:

| Milestones | Process                             | Estimated Deadline        | Deliverables                               | Amount (INR) |
|------------|-------------------------------------|---------------------------|--------------------------------------------|--------------|
| M1         | Selection of Tech Stack             | 3rd week of November 2021 | Proof of concept for FTS in desktop/mobile | 25,000       |
|            | Applying FTS in Desktop environment |                           |                                            |              |
|            | Applying FTS in mobile environment  |                           |                                            |              |

|             |                                                        |                                       |                                                       |          |
|-------------|--------------------------------------------------------|---------------------------------------|-------------------------------------------------------|----------|
| M2          | Resume Generation with HTML Tags                       | 3 <sup>rd</sup> week of December 2022 | Generate and model data                               | 30,000   |
|             | Database migration /modelling to mobile SQLite         |                                       |                                                       |          |
| M3          | Implementing normal search from mobile SQLite          | 2 <sup>nd</sup> week of January 2022  | A system to retrieve data using normal search and FTS | 60,000   |
|             | Implementing FTS from mobile SQLite                    |                                       |                                                       |          |
|             | Retrieving 50 characters before and after the search   |                                       |                                                       |          |
|             | Response time analysis                                 |                                       |                                                       |          |
| M4          | Designing the front end                                | 4 <sup>th</sup> week of January 2022  | Front end Development and Pagination                  | 30,000   |
|             | Pagination                                             |                                       |                                                       |          |
| M5          | Testing and redesigning for iOS                        | 2 <sup>nd</sup> Week of February 2022 | System that works on heterogeneous platform           | 42,000   |
|             | Testing and redesigning for windows desktop and laptop |                                       |                                                       |          |
|             | Testing and redesigning for windows mobile             |                                       |                                                       |          |
| Grand Total |                                                        |                                       |                                                       | 1,87,000 |

#### 8. Specified Deliverables:

1. A scalable mobile app with efficient Full Text Search (FTS) feature that searches the HTML content
2. Cross platform app: Android, iOS and Windows

#### 9. Institute pre-existing Intellectual Property and Open- Source works of authorship: -

#### 10. Caterpillar equipment loans or gifts (if any): -

#### 11. Proposed Caterpillar visitors, duration of visit(if any): -

#### 12. Caterpillar Liason/ Contact responsible for the project:

Mr. Vijayagopan Kanniapillai, Mr. Antony Sebastian, Mr. Dinesh T. Vincent,  
Mr. Franklin Gerald



Signature of the Principal Investigator

**Dr. CHITRA BABU**  
Head of the Department  
Department of Computer Science  
and Engineering  
SSN College of Engineering  
Kalavakkam - 603 110.



**डॉ. बी.वेंकटरामन** HFISNT

प्रतिष्ठित वैज्ञानिक

निदेशक, संरक्षा, गुणवत्ता एवं संसाधन प्रबंधन समूह

वरिष्ठ प्रोफेसर, होमी भाभा राष्ट्रीय संस्थान

**Dr. B. VENKATRAMAN** HFISNT

**Distinguished Scientist**

**Director, Safety Quality & Resource Management Group**

Senior Professor, Homi Bhabha National Institute



सत्यमेव जयते

भारत सरकार

परमाणु ऊर्जा विभाग

इंदिरा गाँधी परमाणु अनुसंधान केन्द्र

कल्पाक्कम 603 102, तमिल नाडु, भारत

GOVERNMENT OF INDIA

DEPARTMENT OF ATOMIC ENERGY

INDIRA GANDHI CENTRE FOR ATOMIC RESEARCH

KALPAKKAM – 603102, TAMIL NADU, INDIA

Ref: IGC/SQRMG/RESG/EAD/CP-01/2021

August 28, 2021

Dear Prof. Rajesh,

**Sub:** Approval of project proposal entitled "Dose assessment of Partial Body exposure using Premature Chromosome Condensation (PCC) assay for mass casualty accidents"

It is informed that your project proposal titled "Dose assessment of Partial Body exposure using Premature Chromosome Condensation (PCC) assay for mass casualty accidents" has been accepted for and on behalf of The President of India for an amount of Rs. 24,34,000/- subjected to terms and conditions specified and agreed between the Principal Investigators from SSN Institutions (SSN I), Kalavakkam and Indira Gandhi Centre for Atomic Research (IGCAR), Kalpakkam as specified below:

**Terms & conditions:**

1. Scope of the work is as mentioned in the project proposal.
2. The project shall be completed within a period of 24 months.
3. Any capital items to be procured under this project at SSN I have to be returned to SQRMG, IGCAR after the project is completed.
4. Progress of work will be reviewed by a committee consisting of senior members from IGCAR and SSN I as well as a few eminent scientists from outside IGCAR, if necessary. Payment will be made only after their recommendations.
5. Payment : Payment to The Principal, Sri Sivasubramaniya Nadar (SSN) College of Engineering, Kalavakkam will be released by IGCAR as per the milestones given below:
  - a) Acceptance of the project - First month release of 1<sup>st</sup> year money as advance payment – Rs. 12,57,000/- .
  - b) After submission of 1<sup>st</sup> year report and based on recommendation of review committee release of 2<sup>nd</sup> year money – Rs.11,77,000 /- .
  - c) Data generated in this project should not be published in Symposia/Conferences etc., or as Reports/Journal publications etc without prior permission from IGCAR.

Kindly acknowledge receipt of this order and give your acceptance duly signed at the earliest.

(B.VENKATRAMAN)

Dr. N.P. Rajesh

Head, Centre for Radiation Environmental Science and Technology

SSN Institutions

Kalavakkam-603 110

**डॉ. बी.वेंकटरामन/Dr. B. VENKATRAMAN**

निदेशक/Director

संरक्षा, गुणवत्ता एवं संसाधन प्रबंधन समूह

Safety, Quality & Resource Management Group

इंगापजके, पञ्चि, कल्पाक्कम 603 102

IGCAR, Bhabha Atomic Research Centre, Kalpakkam 603 102.

दूरभाष/Phone: +91-44-27480352 /27480820

फैक्स/Fax : 044-27480352

ई-मेल /E-mail: bvenkat@igcar.gov.in

# SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING

(An Autonomous Institution)

Approved by AICTE, New Delhi and Affiliated to Anna University

Rajiv Gandhi Salai (OMR), Kalavakkam – 603 110, TN, India.

Tel: +91 44 27469700

www.ssn.edu.in

Administrative Office: New No.19, Old No.8, 3<sup>rd</sup> Main Road, Kasthuribai Nagar, Adyar, Chennai - 600 020.

Tel: +91 44 24411656, 24416474

## ENDORSEMENT FROM THE HEAD OF INSTITUTION

**Project Title :** Dose Assessment of Partial body Exposure using Premature Chromosome Condensation assay for Mass Casualty Accidents

1. Certified that the Institute welcomes participation of Dr. N.P. Rajesh and Dr. R. Subashini as the Principal Investigators for the project and that in the unforeseen event of discontinuance by any of the Investigators, the other Investigator will assume the responsibility of the fruitful completion of the project (with due information to IGCAR).
2. Certified that the equipment and other basic facilities as enumerated and such other administrative facilities as per terms and conditions of the grant will be extended to the investigator(s) throughout the duration of the project.
3. Institute assumes to undertake the financial and other management responsibilities of the project.

Date: 15.12.2020

Place: Kalavakkam - 603110

Name and Signature of Head of Institution

**Dr. V. E. ANNAMALAI**  
Principal  
Sri Sivasubramaniya Nadar  
College of Engineering  
Rajiv Gandhi Salai (OMR)  
Kalavakkam - 603 110.





FILE NO. CRG/2020/004974

**SCIENCE & ENGINEERING RESEARCH BOARD**

5 & 5A, Lower Ground Floor  
Vasant Square Mall  
Plot No. A, Community Centre  
Sector-B, Pocket-5, Vasant Kunj  
New Delhi-110070

Dated: 03-Aug-2021 ✓

**ORDER**

Subject: Financial Sanction of the research project titled "**Enhancing Brain Cognition through Neuro-Feedback model in Indian Children with Learning Disability**" under the guidance of Dr. Geethanjali Balasubramaniam, Biomedical Engineering, Sri Sivasubramaniya Nadar College of Engineering, Old mahabalipuram road, kalavakkam, Chennai, Tamil nadu-603110 and by Dr. Bikesh Kumar Singh, Assistant Professor, Biomedical Engineering, National Institute Of Technology, Raipur and by Dr. Mahesh Veezhinathan, Associate Professor, Biomedical Engineering, SSN College Of Engineering - Release of 1st grant.

Sanction of **Science and Engineering Research Board (SERB)** is hereby accorded to the above mentioned project at a total cost of **Rs. 4403080/- (Rs. Rupees Forty Four Lakh Three Thousand and Eighty only Only)** with break-up of **Rs. 699200/- under Capital (Non-recurring) head** and **Rs.3703880/- under General (Recurring) head** for a duration of 36 months. The items of expenditure for which the total allocation of **Rs. 4403080/-** has been approved are given below:

The following budget may be considered for **Sri Sivasubramaniya Nadar College Of Engineering, Old Mahabalipuram Road, Kalavakkam**

| S. No     | Head                                                                                                                                       | Total (in Rs.)             |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| <b>A</b>  | <b>Non-recurring</b>                                                                                                                       |                            |
| 1         | Equipment<br>-> Sensors<br>-> Procomp Infinti with Biograph software system                                                                | 699200                     |
| <b>A'</b> | <b>Total (Non-Recurring)</b>                                                                                                               | <b>699200</b>              |
| <b>B</b>  | <b>Recurring Items</b>                                                                                                                     |                            |
| 1         | Recurring - I : (Manpower)<br>Recurring - II : ( Consumables, Travel, Contingencies)<br>Recurring - III : Scientific Social Responsibility | 1443360<br>325000<br>10000 |
| 2         | Recurring - IV : (Overhead Charges)                                                                                                        | 247756                     |
| <b>B'</b> | <b>Total (Recurring)</b>                                                                                                                   | <b>2026116</b>             |
| <b>C</b>  | <b>Total cost of the project (A' + B')</b>                                                                                                 | <b>2725316</b>             |

The following budget may be considered for **National Institute Of Technology, Raipur, NIT Raipur, G.E. Road, Raipur**

| S. No     | Head                                               | Total (in Rs.) |
|-----------|----------------------------------------------------|----------------|
| <b>A</b>  | <b>Non-recurring</b>                               |                |
| 1         | Equipment                                          | 0              |
| <i>A'</i> | <i>Total (Non-Recurring)</i>                       | <b>0</b>       |
| <b>B</b>  | <b>Recurring Items</b>                             |                |
| 1         | Recurring - I : (Manpower)                         | 1350240        |
|           | Recurring - II : ( Consumables, Travel)            | 175000         |
|           | Recurring - III : Scientific Social Responsibility | 0              |
| 2         | Recurring - IV : (Overhead Charges)                | 152524         |
| <i>B'</i> | <i>Total (Recurring)</i>                           | <b>1677764</b> |
| <b>C</b>  | <b>Total cost of the project (A' + B')</b>         | <b>1677764</b> |

2. Sanction of the grant is subject to the conditions as detailed in Terms & Conditions available at website ( [www.serb.gov.in](http://www.serb.gov.in)).

3. Overhead expenses are meant for the host Institute towards the cost for providing infrastructural facilities and general administrative support etc. including benefits to the staff employed in the project.

4. While providing operational flexibility among various subheads under head Recurring-A, it should be ensured that not more than Rs. 1.5 lakh each should be spent for travel and contingency.

5. As per rule 211 of GFR, the accounts of project shall be open to inspection by sanctioning authority/audit whenever the institute is called upon to do so.

6. The institute will furnish to the SERB, New Delhi, separate Utilization certificate(UCs) financial year wise to the SERB for Recurring (Grants-in-aid General) & Non-Recurring (Grants for creation of capital assets) and an audited statement of accounts pertaining to the grant immediately after the end of each financial year.

7. The manpower sanctioned in the project, if any is co-terminus with the duration of the project and SERB will have no liability to meet the fellowship and salary of supporting staff if any. beyond the duration of the project

8. The institute will maintain separate audited accounts for the project. A part or whole of the grant must be kept in an interest earning bank account which is to be reported to SERB. The interest thus earned will be treated as credit to the institute to be adjusted towards further installment of the grant.



9. The sanctioned equipments and consumables would be produced as per GFR 2005 and its disposal would be done with prior approval of SERB.

10. The institute may refund any unspent balance to SERB by means of a Demand Draft favoring "FUND FOR SCIENCE AND ENGINEERING RESEARCH" payable at New Delhi.

(Dr. Anima Johari)

Scientist D

anima.johari@serb.gov.in

To,  
Under Secretary  
SERB, New Delhi

Copy forwarded for information and necessary action to: -

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | The Principal Director of Audit, A.G.C.R. Building, IIIrd Floor I.P. Estate, Delhi-110002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. | Sanction Folder, SERB, New Delhi.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. | File Copy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. | <p><b>Dr. Geethanjali Balasubramaniam</b><br/>Biomedical Engineering<br/>Sri Sivasubramaniya Nadar College of Engineering, Old mahabalipuram road, kalavakkam, Chennai, Tamil nadu-603110<br/>Email: geethanjali@ssn.edu.in<br/>Mobile: 919840638572</p> <p><b>Dr. Bikesh Kumar Singh</b><br/>Biomedical Engineering<br/>National Institute Of Technology, Raipur</p> <p><b>Dr. Mahesh Veezhinathan</b><br/>Biomedical Engineering<br/>SSN College Of Engineering<br/>(Start date of the project may be intimated by name to the undersigned. For guidance, terms &amp; Conditions etc. Please visit <a href="http://www.serb.gov.in">www.serb.gov.in</a>.)</p> |
| 5. | <p><b>PRINCIPAL,</b><br/>Sri Sivasubramaniya Nadar College Of Engineering, Old Mahabalipuram Road, Kalavakkam<br/>Director, NIT Raipur,<br/>National Institute Of Technology, Raipur, NIT Raipur, G.E. Road, Raipur</p> <p>(Receipt of Grant may be intimated by name to the undersigned)</p>                                                                                                                                                                                                                                                                                                                                                                   |

(Dr. Anima Johari)

Scientist D

anima.johari@serb.gov.in

BP-2021-22-1511

FILE NO. CRG/2020/004974-G

SCIENCE &amp; ENGINEERING RESEARCH BOARD(SERB)

(A statutory body of the Department of Science &amp; Technology, Government of India)

5 & 5A, Lower Ground Floor  
Vasant Square Mall  
Plot No. A, Community Centre  
Sector-B, Pocket-5, Vasant Kunj  
New Delhi-110070

Dated: 03 August, 2021

## ORDER

Subject: Research project entitled **Enhancing Brain Cognition through Neuro-Feedback model in Indian Children with Learning Disability** under the guidance of Dr. Geethanjali Balasubramaniam, Biomedical Engineering, Sri Sivasubramaniya Nadar College of Engineering, Old Mahabalipuram road, Kalavakkam, Chennai, Tamil nadu-603110 and by Dr. Bikesh Kumar Singh, Assistant Professor, Biomedical Engineering, National Institute Of Technology, Raipur and by Dr. Mahesh Veezhinathan, Associate Professor, Biomedical Engineering, SSN College Of Engineering.

1. In continuation of SERB's sanction order No. CRG/2020/004974 dated 03 August, 2021, sanction of the competent authority is hereby accorded to the payment of a sum of **Rs. 720000/-** under 'Grants-in-aid General' to Sri Sivasubramaniya Nadar College Of Engineering, Old Mahabalipuram Road, Kalavakkam, Chennai, Tamil Nadu-603110 being the grant for the financial year 2021-2022 for implementation of the above said project.
2. Sanction of the grant is subject to the conditions as detailed in Terms & Conditions available at the website ([www.serb.gov.in](http://www.serb.gov.in)) and as mentioned in the sanction order of even number dated 03 August, 2021.
3. As this is the first grant being released under 'Grants-in-aid General' for the project, no previous U/C is required.
4. The expenditure involved is debit to Fund for Science & Engineering Research (FSER) This release is being made under Core Research Grant (PAC **Electrical Electronics & Computer Engineering**) (General).
5. The Sanction has been issued with the approval of the competent authority on **07 July, 2021** and vide Diary No. **SERB/F/1219/2021-2022** dated **09 July, 2021**.
6. The release amount of **Rs. 720000/-** (Rupees Seven Lakh Twenty Thousand only) will be drawn by the Under Secretary of the SERB and will be disbursed by means of RTGS transaction as per their Bank details given below:

|                        |                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------|
| PFMS Unique Code       | SSNCE                                                                                                       |
| Account Name           | THE PRINCIPAL, SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING                                             |
| Account Number         | 158100710400509                                                                                             |
| Bank Name & Branch     | TAMILNAD MERCANTILE BANK LTD THIRUVANMIYUR BRANCH, NO.3, THIRUVALLUVAR SALAI, THIRUVANMIYUR, CHENNAI 600041 |
| IFSC/RTGS Code         | TMBL0000158                                                                                                 |
| Email id of A/C Holder | principal@ssn.edu.in                                                                                        |
| Email id of PI         | geethanjali@ssn.edu.in                                                                                      |

(Dr. Anima Johari)

Scientist D

anima.johari@serb.gov.in

To,  
Under Secretary  
SERB, New Delhi

Copy forwarded for information and necessary action to: -

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | The Principal Director of Audit, A.G.C.R. Building, IIIrd Floor I.P. Estate, Delhi-110002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. | Sanction Folder, SERB, New Delhi.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. | File Copy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. | <p><b>Dr. Geethanjali Balasubramaniam</b><br/>Biomedical Engineering<br/>Sri Sivasubramaniya Nadar College of Engineering, Old Mahabalipuram road, Kalavakkam, Chennai, Tamil nadu-603110<br/>Email: geethanjali@ssn.edu.in<br/>Mobile: 919840638572</p> <p><b>Dr. Bikesh Kumar Singh</b><br/>Biomedical Engineering<br/>National Institute Of Technology, Raipur</p> <p><b>Dr. Mahesh Veezhinathan</b><br/>Biomedical Engineering<br/>SSN College Of Engineering<br/>(Start date of the project may be intimated by name to the undersigned. For guidance, terms &amp; Conditions etc. Please visit <a href="http://www.serb.gov.in">www.serb.gov.in</a>.)</p> |
| 5. | <p><b>PRINCIPAL,</b><br/>Sri Sivasubramaniya Nadar College Of Engineering, Old Mahabalipuram Road, Kalavakkam</p> <p>(Receipt of Grant may be intimated by name to the undersigned)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

(Dr. Anima Johari)

Scientist D

anima.johari@serb.gov.in



BP-2021-22-2195 ✓

I-C

FILE NO. CRG/2020/004974-C ✓

SCIENCE &amp; ENGINEERING RESEARCH BOARD(SERB)

(A statutory body of the Department of Science &amp; Technology, Government of India)

5 & 5A, Lower Ground Floor  
Vasant Square Mall  
Plot No. A, Community Centre  
Sector-B, Pocket-5, Vasant Kunj  
New Delhi-110070

Dated: 03 August, 2021 ✓

**ORDER**

Subject: Research project entitled **Enhancing Brain Cognition through Neuro-Feedback model in Indian Children with Learning Disability** under the guidance of Dr. Geethanjali Balasubramaniam, Biomedical Engineering, Sri Sivasubramaniya Nadar College of Engineering, Old mahabalipuram road, kalavakkam, Chennai, Tamil nadu-603110 and by Dr. Bikesh Kumar Singh, Assistant Professor, Biomedical Engineering, National Institute Of Technology, Raipur and by Dr. Mahesh Veezhinathan, Associate Professor, Biomedical Engineering, SSN College Of Engineering.

1. In continuation of SERB's sanction order No. CRG/2020/004974 dated 03 August, 2021, sanction of the competent authority is hereby accorded to the payment of a sum of **Rs. 699200/-** under 'Grants-in-aid Capital' to Sri Sivasubramaniya Nadar College Of Engineering, Old Mahabalipuram Road, Kalavakkam, Chennai, Tamil Nadu-603110 being the grant for the financial year 2021-2022 for implementation of the above said project.
2. Sanction of the grant is subject to the conditions as detailed in Terms & Conditions available at the website ([www.serb.gov.in](http://www.serb.gov.in)) and as mentioned in the sanction order of even number dated 03 August, 2021.
3. As this is the first grant being released under 'Grants-in-aid Capital' for the project, no previous U/C is required.
4. The expenditure involved is debitable to Fund for Science & Engineering Research (FSER) This release is being made under Core Research Grant (**PAC Electrical Electronics & Computer Engineering**) (Capital).
5. The Sanction has been issued with the approval of the competent authority on **07 July, 2021** and vide Diary No. **SERB/F/1218/2021-2022** dated **09 July, 2021**.
6. The release amount of **Rs. 699200/-** (Rupees Six Lakh Ninety Nine Thousand Two Hundred only) will be drawn by the Under Secretary of the SERB and will be disbursed by means of RTGS transaction as per their Bank details given below:

|                        |                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------|
| PFMS Unique Code       | SSNCE                                                                                                       |
| Account Name           | THE PRINCIPAL, SRI SIVASUBRAMANIYA NADAR COLLEGE OF ENGINEERING                                             |
| Account Number         | 158100710400509                                                                                             |
| Bank Name & Branch     | TAMILNAD MERCANTILE BANK LTD THIRUVANMIYUR BRANCH, NO.3, THIRUVALLUVAR SALAI, THIRUVANMIYUR, CHENNAI 600041 |
| IFSC/RTGS Code         | TMBL0000158                                                                                                 |
| Email id of A/C Holder | principal@ssn.edu.in                                                                                        |
| Email id of PI         | geethanjali@ssn.edu.in                                                                                      |

(Dr. Anima Johari)

Scientist D

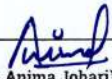
anima.johari@serb.gov.in

To,  
Under Secretary  
SERB, New Delhi

Copy forwarded for information and necessary action to: -

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | The Principal Director of Audit, A.G.C.R. Building, IIIrd Floor I.P. Estate, Delhi-110002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. | Sanction Folder, SERB, New Delhi.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3. | File Copy                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 4. | <p><b>Dr. Geethanjali Balasubramaniam</b><br/>Biomedical Engineering<br/>Sri Sivasubramaniya Nadar College of Engineering, Old mahabalipuram road, kalavakkam, Chennai, Tamil nadu-603110<br/>Email: geethanjali@ssn.edu.in<br/>Mobile: 919840638572</p> <p><b>Dr. Bikesh Kumar Singh</b><br/>Biomedical Engineering<br/>National Institute Of Technology, Raipur</p> <p><b>Dr. Mahesh Veezhinathan</b><br/>Biomedical Engineering<br/>SSN College Of Engineering<br/>(Start date of the project may be intimated by name to the undersigned. For guidance, terms &amp; Conditions etc. Please visit <a href="http://www.serb.gov.in">www.serb.gov.in</a>.)</p> |

|    |                                                                                                                                                                                    |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5. | <b>PRINCIPAL,</b><br><b>Sri Sivasubramaniya Nadar College Of Engineering, Old Mahabalipuram Road, Kalavakkam</b><br>(Receipt of Grant may be intimated by name to the undersigned) |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

  
(Dr. Anima Johari)  
Scientist D  
anima.johari@serb.gov.in



BP-2021-22-2196 ✓

FILE NO. CRG/2020/004974 ✓ II

**SCIENCE & ENGINEERING RESEARCH BOARD(SERB)**

(A statutory body of the Department of Science &amp; Technology, Government of India)

5 & 5A, Lower Ground Floor  
Vasant Square Mall  
Plot No. A, Community Centre  
Sector-B, Pocket-5, Vasant Kunj  
New Delhi-110070

Dated: 03 August, 2021 ✓

**ORDER**

Subject: Financial Sanction of the research project titled "**Enhancing Brain Cognition through Neuro-Feedback model in Indian Children with Learning Disability**" under the guidance of Dr. Bikesh Kumar Singh, Biomedical Engineering, National Institute of Technology, Raipur, NIT Raipur, G.E. Road, Raipur and by Dr. Bikesh Kumar Singh, Assistant Professor, Biomedical Engineering, National Institute Of Technology, Raipur and by Dr. Mahesh Veezhinathan, Associate Professor, Biomedical Engineering, SSN College Of Engineering - Release of 1st grant.

Sanction of **Science and Engineering Research Board (SERB)** is hereby accorded to the above mentioned project at a total cost of **Rs. 1677764/- (Rs. Sixteen Lakh Seventy Seven Thousand Seven Hundred and Sixty Four Only)** with break-up of **Rs. 0/- under Capital (Non-recurring) head** and **Rs. 1677764/- under General (Recurring) head** for a duration of 36 months. The items of expenditure for which the total allocation of **Rs. 1677764/-** has been approved are given below:

| S. No    | Head                                               | Total (in Rs.) |
|----------|----------------------------------------------------|----------------|
| <b>A</b> | <b>Non-recurring</b>                               |                |
| 1        | Equipment                                          | 0              |
| A'       | Total (Non-Recurring)                              | 0              |
| <b>B</b> | <b>Recurring Items</b>                             |                |
| 1        | Recurring - I : (Manpower)                         | 1350240        |
|          | Recurring - II : ( Consumables, Travel)            | 175000         |
|          | Recurring - III : Scientific Social Responsibility | 0              |
| 2        | Recurring - IV : (Overhead Charges)                | 152524         |
| B'       | Total (Recurring)                                  | 1677764        |
| <b>C</b> | <b>Total cost of the project (A' + B')</b>         | 1677764        |

2. Sanction of the **SERB** is also accorded to the payment of **Rs. 560080/- (Rupees Five Lakh Sixty Thousand and Eighty only)** under 'Grants-in-aid General' to **Director, NIT Raipur, National Institute Of Technology, Raipur, NIT Raipur, G.E. Road, Raipur** being the first installment of the grant for the year 2021-2022 for implementation of the said research project.

3. The expenditure involved is debitable to **Fund for Science & Engineering Research (FSER)**

**This release is being made under Core Research Grant. (PAC Electrical Electronics & Computer Engineering)**

4. The Sanction has been issued to National Institute Of Technology, Raipur, NIT Raipur, G.E. Road, Raipur with the approval of the competent authority under delegated powers on **07 July, 2021** and vide Diary No. **SERB/F/1220/2021-2022** dated **09 July, 2021**

5. Sanction of the grant is subject to the conditions as detailed in Terms & Conditions available at website ( [www.serb.gov.in](http://www.serb.gov.in) ).

6. Overhead expenses are meant for the host Institute towards the cost for providing infrastructural facilities and general administrative support etc. including benefits to the staff employed in the project.

7. While providing operational flexibility among various subheads under head Recurring-II, it should be ensured that not more than Rs. 1.5 lakh each should be spent for travel and contingency.

8. Budget sanctioned under Scientific Social Responsibility (SSR) is meant only for activities enlisted under SSR norms and under no circumstances it can be reappropriated.

9. As per rule 211 of GFR, the accounts of project shall be open to inspection by sanctioning authority/audit whenever the institute is called upon to do so.

10. The sanctioned equipment would be procured as per GFR and its disposal of the same would be done with prior approval of SERB.

11. The release amount of **Rs. 560080/-** (Rupees Five Lakh Sixty Thousand and Eighty only) will be drawn by the Under Secretary of the SERB and will be disbursed by means of RTGS transaction as per their Bank details given below:

|                               |                                                                    |
|-------------------------------|--------------------------------------------------------------------|
| <b>PFMS Unique Code</b>       | NIT13                                                              |
| <b>Account Name</b>           | National Institute of Technology Raipur                            |
| <b>Account Number</b>         | 38315253625                                                        |
| <b>Bank Name &amp; Branch</b> | State Bank of India NIT Raipur Branch, NIT Raipur Campus, G.E Road |
| <b>IFSC/RTGS Code</b>         | SBIN0002852                                                        |
| <b>Email id of A/C Holder</b> | director@nitrr.ac.in                                               |
| <b>Email id of PI</b>         | geethanjalib@ssn.edu.in                                            |

12. The institute will furnish to the SERB, separate Utilization certificate(UCs) financial year wise to the SERB for Recurring (Grants-in-aid General) & Non-Recurring (Grants for creation of capital assets) and an audited statement of accounts pertaining to the grant immediately after the end of each financial year.



13. The institute will maintain separate audited accounts for the project. A part or whole of the grant must be kept in an interest earning bank account which is to be reported to SERB. The interest thus earned will be treated as credit to the institute to be adjusted towards further installment of the grant.

14. The project File no. CRG/2020/004974 may also be mentioned in all research communications arising from the above project with due acknowledgement of SERB.

15. The manpower sanctioned in the project, if any is co-terminus with the duration of the project and SERB will have no liability to meet the fellowship and salary of supporting staff if any. beyond the duration of the project

16. As this is the first grant being released for the project, no previous U/C is required.

17. The institute may refund any unspent balance to SERB by means of a Demand Draft favoring "FUND FOR SCIENCE AND ENGINEERING RESEARCH" payable at New Delhi.

18. The organization/institute/university should ensure that the technical support/financial assistance provided to them by the Science & Engineering Research Board should invariably be highlighted/ acknowledged in their media releases as well as in bold letters in the opening paragraphs of their Annual Report.

19. In addition, the investigator/host institute must also acknowledge the support provided to them in all publications, patents and any other output emanating out of the project/program funded by the Science & Engineering Research Board.



(Dr. Anima Johari)

Scientist D

anima.johari@serb.gov.in

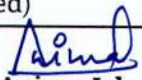
To,  
Under Secretary  
SERB, New Delhi

Copy forwarded for information and necessary action to: -

|    |                                                                                           |
|----|-------------------------------------------------------------------------------------------|
| 1. | The Principal Director of Audit, A.G.C.R. Building, IIIrd Floor I.P. Estate, Delhi-110002 |
| 2. | Sanction Folder, SERB, New Delhi.                                                         |
| 3. | File Copy                                                                                 |



|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4. | <p><b>Dr. Bikesh Kumar Singh</b><br/><b>Biomedical Engineering</b><br/><b>National Institute of Technology, Raipur , NIT Raipur,G.E. Road, Raipur</b><br/><b>Email: bsingh.bme@nitrr.ac.in</b><br/><b>Mobile: 919826469522</b></p> <p><b>Dr. Bikesh Kumar Singh</b><br/><b>Biomedical Engineering</b><br/><b>National Institute Of Technology, Raipur</b></p> <p><b>Dr. Mahesh Veezhinathan</b><br/><b>Biomedical Engineering</b><br/><b>SSN College Of Engineering</b><br/>(Start date of the project may be intimated by name to the undersigned. For guidance, terms &amp; Conditions etc. Please visit <a href="http://www.serb.gov.in">www.serb.gov.in</a>.)</p> |
| 5. | <p><b>Director, NIT Raipur,</b><br/><b>National Institute Of Technology, Raipur, NIT Raipur,G.E. Road, Raipur</b></p> <p>(Receipt of Grant may be intimated by name to the undersigned)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

  
(Dr. Anima Johari)

Scientist D  
anima.johari@serb.gov.in



No. DST/INT/JSPS/P-328/2021  
Govt. of India  
Ministry of Science and Technology  
Department of Science and Technology  
International Cooperation Division

Technology Bhawan, New Mehrauli Road  
New Delhi – 110016  
Dated 24.08.2021

**Subject:** Implementation of Indo-Japanese Joint Project entitled: “Development of Growth Process of High Quality Multicrystalline Silicon by Experiments, Computational Simulation and Machine Learning” coordinated by Prof. P. Ramasamy with the Japanese partner Prof. Noritaka Usami – regarding.

The undersigned is directed to refer to this Department’s Sanction Order of even number dated 28.07.2021(copy enclosed) on the above subject and to say that Dr M. Srinivasan, Research Scientist, SSN Research Centre, Sri Sivasubramaniya Nadar College of Engineering, Chennai, Tamil Nadu will act as co-PI for the above Project.

Accordingly, the project will be managed by Prof. P. Ramasamy as PI and Dr. M. Srinivasan as Co-PI at SSN Research Centre, Sri Sivasubramaniya Nadar College of Engineering, Chennai, Tamil Nadu for the project.

All other terms and conditions of this Department’s Order dated 28.07.2021 shall remain unchanged.

*U. Tirkey*  
24/8/2021  
(Ujjwala T. Tirkey)  
Scientist-G/DST

To

The Pay & Accounts Officer  
Ministry of Science and Technology  
Department of Science and Technology  
New Delhi.

Copy to:

1. Registrar, SSN Research Centre, Sri Sivasubramaniya Nadar College of Engineering, Chennai-603110, Tamil Nadu
2. Prof. P. Ramasamy , Dean, Department of physics SSN Research Centre, Sri Sivasubramaniya Nadar College of Engineering, Chennai-603110, Tamil Nadu
3. Dr. M. Srinivasan, Research SSN Research Centre, Sri Sivasubramaniya Nadar College of Engineering, Chennai-603110, Tamil Nadu
4. Cash Section/IFD, DST
5. Sanction Folder/Project File

E-34176

No. DST/INT/JSPS/P- 328/2021

Government of India  
Ministry of Science and Technology  
Department of Science & Technology  
(International Cooperation Division)

Technology Bhavan,  
New Mehrauli Road  
New Delhi-110016  
Date: 28.07.2021

ORDER

Subject: Implementation of Indo-Japanese Joint project entitled: "Development of Growth Process of High Quality Multicrystalline Silicon by Experiments, Computational Simulation and Machine Learning" coordinated Prof. P. Ramasamy with the Japanese partner Prof. Noritaka Usami- regarding.

Sanction of the President is hereby accorded for incurring an expenditure not exceeding Rs. 5,24,000/- (Rupees Five Lakhs Twenty Four Thousand) for implementation of Indo-Japanese project entitled, "Development of Growth Process of High Quality Multicrystalline Silicon by Experiments, Computational Simulation and Machine Learning" coordinated by Prof. P. Ramasamy, Dean, Department of Physics, SSN Research Center, Sri Sivasubramaniya Nadar College of Engineering, Chennai-603110, Tamil Nadu in collaboration with Prof. Noritaka Usami, Graduate School of Engineering, Nagoya University, Furocho, Nagoya, Japan for a total duration of 2 years from the date of issue of the sanction order.

2. As per the terms and conditions, agreed by both side, under the project the sending side will bear the cost related to the International air travel, medical insurance and visa charges whereas the receiving side shall bear the cost of accommodation, hospitality and local travels of the visiting scientist. The break-up of approved expenditure is as indicated below:

| Items of Expenditure                                                                                    | 1 <sup>st</sup> Year       |                            | 2 <sup>nd</sup> Year       | Total      |
|---------------------------------------------------------------------------------------------------------|----------------------------|----------------------------|----------------------------|------------|
|                                                                                                         | 1 <sup>st</sup> Six Months | 2 <sup>nd</sup> Six Months |                            |            |
| Visit from India to Japan:                                                                              |                            |                            |                            |            |
| Number of Visits and duration for each visit                                                            | Nil                        | 2 visits<br>(15 days each) | 2 visits<br>(15 days each) | 4 visits   |
| International to & fro Airfare by economy class including airport taxes @Rs. 80,000 x 2(as per actuals) | Nil                        | 1,60,000/-                 | 1,60,000/-                 | 3,20,000/- |
| Related local travel in India from city parent institute to the nearest International Airport           | Nil                        | 2,000/-                    | 2,000/-                    | 4,000/-    |
| Visa Fee@ Rs. 2,000/- each                                                                              | Nil                        | 4,000/-                    | 4,000/-                    | 8,000/-    |

U. T. Key



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|                                                                                         |     |                         |                         |                   |
|-----------------------------------------------------------------------------------------|-----|-------------------------|-------------------------|-------------------|
| Overseas medical insurance @ Rs. 3,000/- each                                           | Nil | 6,000/-                 | 6,000/-                 | 12,000/-          |
| <b>Visits from Japan to India:</b>                                                      |     |                         |                         |                   |
| Number of Visits and duration for each visit                                            | Nil | 2 visits (15 days each) | 2 visits (15 days each) | 4 visits          |
| Accommodation in Guest House                                                            | Nil | 30,000/-                | 30,000/-                | 60,000/-          |
| Per diem @ Rs. 1000/- per day                                                           | Nil | 30,000/-                | 30,000/-                | 60,000/-          |
| Local travel in India between the host institute and the nearest International Air Port | Nil | 5,000/-                 | 5,000/-                 | 10,000/-          |
| Contingency                                                                             |     | 25,000/-                | 25,000/-                | 50,000/-          |
| <b>Total</b>                                                                            |     | <b>2,62,000/-</b>       | <b>2,62,000/-</b>       | <b>5,24,000/-</b> |

3. As is indicated in the above table, as of now, no release is being made. Sanction of the President is hereby accorded for release of 1<sup>st</sup> instalment (first six months) amounting to nil to the grantee Institute. **The release will be made after appraisal and approval of Umbrella Scheme (Research & Development) as directed by Department of Expenditure's OM dated 9.2.2021**

#### Condition for placing of grant amount.

4. The institute will maintain separate audited account for the project and the amount of grant will be kept in a bank account earning interest. For Grants released during FY 2017-18 and onwards, all interest and other earnings, against released Grant shall be remitted to Consolidated Fund of India (through Non Tax Receipt Portal (NTRP), i.e. [www.Bharatkosh.gov.in](http://www.Bharatkosh.gov.in)), immediately after finalization of accounts, as it shall not be adjusted towards future release of grant. A certificate to this effect shall have to be submitted along with Statement of Expenditure/Utilization Certificate for considering subsequent release of grant/ closure of project accounts.

#### Conditions for submission of SE/UC and Progress report

5. (a) the grantee organisation will furnish to the Department of Science & Technology, financial year wise Utilization Certificate (UC) in the proforma prescribed as per GFR 2017 and audited statement of expenditure (SE) along with up to date progress report at the end of each financial year duly reflecting the interest earned / accrued on the grants received under the project. This is also subject to the condition of submission of the final statement of expenditure, utilization certificate and project completion report within one year from the scheduled date of completion of the project.
- (b) While submitting Utilisation Certificate/Statement of Expenditure, the organisation has to ensure submission of supporting documentary evidences with regard to purchase of equipment/capital assets as per the provisions of GFR 2017. Subsequent release of grants under the project shall be considered only on receipt of the said documents.
- (c) a transparent procurement procedure in line with the Provisions of General Financial Rules 2017 will be followed by the Institute/Organisation under the appropriate rules of the grantee organisation while procuring capital assets sanctioned for the above mentioned project and a certificate to this effect will be submitted by the Grantee organisation immediately on receipt of the grant.

6. The grantee organisation will have to enter & upload the Utilization Certificate in the PFMS portal besides sending it in physical form to this Division. The subsequent/final instalment will be

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released only after confirmation of the acceptance of the UC by the Division and entry of previous Utilization Certificate in the PFMS.

7(a) In the event grant has been released under capital head through separate sanction order under the same project for purchase of equipment(s), separate SE/UC has to be furnished for the released Capital head grant.

(b) It is **Mandatory** for the grantee organisation to implement EAT module of PFMS for monitoring of expenditure and release of further grant.

#### Conditions of Assets (if any):

8 (a) DST reserves sole rights on the assets created out of grants. Assets acquired wholly or substantially out of government grants (except those declared as obsolete and unserviceable or condemned in accordance with the procedure laid down in GFR 2017), shall not be disposed of without obtaining the prior approval of DST.

(b) The equipment/instrument shall have to be purchased within twelve months from the date of release of the capital grant. Fresh permission shall have to be sought from DST, in the event, the Institute fails to purchase the equipment/instrument within the prescribed period of twelve months from the date of release of sanctioned amount.

(c) Goods (consumables/equipment) available in GeM portal are to be procured mandatorily online through Gem only as per the provisions of Rule 149 of GFR.

#### Conditions for International Visits:

9 All project related visits to be undertaken by the Scientists from either side in connection with the implementation of the project shall require prior approval from this Department separately on a case to case basis before any expenditure is incurred in this regard.

10. As per Ministry of Finance, Department of Expenditure vide Office Memorandum No.19024/22/2017-E.IV dated 19th July, 2017, it has been decided that in all cases of air travel, both domestic and international, where the Government of India bears the cost of air passage, the officials concerned may travel only by Air India and air ticket, may be purchased directly from airlines (viz. Air India) at booking counters/website of airlines or from 3 authorized travel agents namely M/s. BalmerLawrie & Company Limited, M/s. Ashok Travels & Tours and IRCTC only. For travel to stations not connected by Air India, the officials may travel by Air India to the hub/point closest to their eventual destination, beyond which they may utilize the services of another airline which should also preferable be an alliance partner of Air India.

#### Other Conditions:

11. The account of the grantee organisation shall be open to inspection by the sanctioning authority and audit (both by C&AG of India and Internal Audit by the Principal Accounts Office of the DST), whenever the organisation is called upon to do so, as laid down under Rule 236(1) of General Financial Rules 2017.

12. Due acknowledgement of technical support / financial assistance resulting from this project grant should mandatorily be highlighted by the grantee organisation in bold letters in all publications / media releases as well as in the opening paragraphs of their Annual Reports during and after the completion of the project.

13. In case the scheme provides for payment of honorarium / remuneration / fellowship / scholarship to the PI, a para may suitably be incorporated in the DSO to the effect that "PI is not drawing any emoluments/ salary/fellowship from any other project either supported by DST or by any other funding agency.

U.T. Singh



14. Failure to comply with the terms and conditions of the sanction order will entail full refund with interest in terms of Rule 231 (2) of GFR 2017.

15. The expenditure involved is debit to Demand No 88, Department of Science & Technology for the year 2021-22:

|          |                                                   |
|----------|---------------------------------------------------|
| 3425     | Other Scientific Research (Major Head)            |
| 60       | Others                                            |
| 60.798   | International Cooperation (Minor Head)            |
| 14       | Research and Development                          |
| 14.00.31 | Grants-in-aid General for the year 2021-22 (Plan) |
|          | (Previous: ICD-3425.60.798.12.00.31)              |

16. This sanction order being 1<sup>st</sup> instalment for implementation of this project, no SE/UC is due from the grantee institution against this project.

17. This issues with the concurrence of IFD vide their concurrence Dy. No. C/919/IFD 2021-22 dated 02.07.2021.

18. Continuation of the Project beyond 31st March, 2021 will be subject to appraisal and approval of the continuation of the Umbrella Scheme "Research and Development" under which the Project is funded.

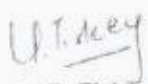
19. As per Rule 234 of GFR 2017, this sanction has been entered at S. No. 65 in the register of grants maintained in the Division.

  
(Ujjwala T. Tirkey)  
Scientist 'G'

To,  
The Pay & Accounts Officer,  
Department of Science & Technology,  
New Delhi-110016

Copy to:

1. Office of the Principal Director of Audit, AGCR Bldg, IP Estate, New Delhi-110002
2. Cash Section (3 copies), DST
3. I.F. Division/Accounts Section, DST
4. Sanction Folder
5. Project File.
6. Registrar, SSN Research Center, Sri SivasubramaniyaNadar College of Engineering, Chennai-603110, Tamil Nadu
7. Prof. P. Ramasamy, Dean, Department of Physics, SSN Research Center, Sri SivasubramaniyaNadar College of Engineering, Chennai-603110, Tamil Nadu

  
(Ujjwala T. Tirkey)  
Scientist 'G'

### SANCTION ORDER

|                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date: 10.01.2021                                                                                   | Date of amendment: NA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Title of the project:                                                                              | Optimum Design of C And Ku Band Reflector Array Antenna                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Issuing Establishment:                                                                             | BigCat Wireless Pvt. Ltd., Chennai                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Project coordinators:                                                                              | <p>Dr. M. Gulam Nabi Alsath<br/>Associate Professor, Department of ECE<br/>Sri Sivasubramaniya Nadar College of Engineering,<br/>Kalavakkam, Chennai – 603 110.<br/>Phone: 9841225829; Email: <a href="mailto:gulamnabialsathm@ssn.edu.in">gulamnabialsathm@ssn.edu.in</a></p> <p>Dr. S. Radha<br/>Professor, Department of ECE<br/>Sri Sivasubramaniya Nadar College of Engineering,<br/>Kalavakkam, Chennai – 603 110.<br/>Phone: 9381032356; Email: <a href="mailto:radhas@ssn.edu.in">radhas@ssn.edu.in</a></p> |
| Principal technical features of Research Service to be provided:                                   | As per SoW document                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Tenure: The technical performance of this sanction letter shall be completed in this time duration | 10 Months<br>(September 2021 – June 2022)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

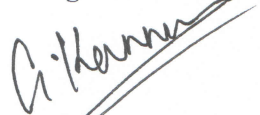
Expenditure (in INR): Expenditure on items below shall not exceed sums shown against each. Efforts to optimize the cost shall be undertaken taken as part of design. SSN shall take prior approvals for all expenses from BigCat Wireless.

|                                                            |              |
|------------------------------------------------------------|--------------|
| Manpower                                                   | ₹ 12,00,000  |
| Lab Equipment and Testing                                  | ₹ 10,00,000  |
| Contingency                                                | ₹ 2,00,000   |
| Risk mitigation – Parabolic reflector                      | ₹ 3,00,000   |
| Horn Antenna                                               | ₹ 2,00,000*  |
| Controller Electronics (Beam steering and varactor diodes) | ₹ 22,00,000* |
| Reflector array antenna Fabrication charges                | TBD**        |

\* For one antenna.

\*\* To be decided based on actuals by getting quote after design is ready

For BigCat Wireless Pvt. Ltd



Authorized Signatory  
Kannan G, Managing Director



Registered Office Address  
No 21, Flat C2, Dwaraka Apartment  
I Avenue, Shastri Nagar  
Chennai – 600020, India

Work Office Address  
6<sup>th</sup> Floor, Unit 06B1, block E, Phase 1  
IIT Madras Research Park,  
Kanagam Road, Taramani  
Chennai – 600113, India