

DST/TMD/MECSP/2K17/50 (C)
 Government of India
 Ministry of Science and Technology
 Department of Science and Technology
 (Technology Mission Division)

Technology Bhavan
 New Mehrauli Road
 New Delhi-110 016
 Date: 18.02.2019

ORDER

Subject: Financial support for “**DST – NFTDC Centre for Materials & Energy Storage Platforms – H2**” submitted by Dr. K Balasubramanian (Lead PI), NFTDC, Kanchanbagh, Hyderabad (Lead Institute). The centre consortium consists of four partner institutes: Dr Anand M Shivapuji (IISc, Bengaluru), Prof P. Maiya (IIT Madras, Chennai), Dr Soobhankar Pati (IIT Bhubaneswar) and Dr. G. Mohan, (SreeChitraThirunal College of Engineering, Thiruvananthapuram).

2. With reference to the sanction order No. DST/TMD/MECSP/2K17/50 dated 18.02.2019. The sanction of the President is also accorded to the release of **Rs. 3,45,00,000/- (Rupees Three Crore Forty five Lakh Only)** to **Nonferrous Materials Technology Development Centre (NFTDC), Hyderabad**, being the first installment of grant under “Capital Components” for implementation of the above mentioned project.

Total Fund required for all 5 Institutes:

S. No	Item Head	1 st Year	2nd Year	3rd Year	4th year	5th year	Total
A	Non-recurring(Capital Items)						
1	Permanent Equipment List WP#1 1. In-house Design & Fabrication of CNG Reformation 2. Balance of Systems (Battery + DC-DC + DC-AC) 3. 16-Nozzle Design & Development of existing Ink Jet Printing SyS 4. Modification of existing Plasma Gun 5. Solution Plasma Spray – Add on system 6. Workstations + Engg software 7. Bio-syngas gen system with Oxy steam gasification supplement 8. Fuel cell stack test setup 9. Bio-syngas reforming train – WGS system (Design and iterative operation based system evolution and fabrication) 10. Bio-syngas reforming train – DBD system (Design and iterative						

operation based system evolution and fabrication)	3,45,00,000	0	0	0	0	3,45,00,000
11. Bio syngas conditioning train						
12. Terminal gas heat recovery system						
13. Burner system for varying terminal gas composition						
14. Mass flow valves, controllers and sensors						
WP#2						
15. Design & Development of Graphene Mfg Apparatus						
16. PCT – DSC Apparatus & Related System						
17. Constant temperature baths, coriolis mass flow meters, Vacuum pump and accessories, Data logger and multiplexers, Swagelok cylinders and hoses, hydrogen safety systems						
WP#3						
18. Design & Development of Centrifugal Powder Making Apparatus						
19. Modification to Attritor (for Milling in H2)						

Recurring Items (Gene ral)							
B							
1. Manpower	45,00,000	45,00,000	45,00,000	45,00,000	45,00,000	2,25,00,000	
2. Consumables	42,50,000	45,50,000	34,50,000	24,00,000	14,00,000	1,60,50,000	
3. Contingencies	3,00,000	3,00,000	3,00,000	3,00,000	3,00,000	15,00,000	
4. Travel	3,00,000	3,00,000	3,00,000	3,00,000	3,00,000	15,00,000	
5. Other Costs (Recurring), if any	15,00,000	25,00,000	17,00,000	12,00,000	7,00,000	76,00,000	
6. Overhead	4,00,000	4,00,000	4,00,000	4,00,000	4,00,000	20,00,000	
Subtotal(General)	1,12,50,000	1,25,50,000	1,06,50,000	91,00,000	76,00,000	5,11,50,000	
C	Total cost of the project (A+B)	4,57,50,000	1,25,50,000	1,06,50,000	91,00,000	76,00,000	8,56,50,000

Fund Required for Lead Institute (NFTDC HYDERABAD)

S.No	Item Head	1st Year	2 nd Year	3 rd Year	4 th year	5 th year	Total
A	Non-recurring(Capital Items)						
	Permanent Equipment List WP#1						
	1. In-house Design & Fabrication of CNG Reformation (28L)						

	2. Balance of Systems (Battery + DC-DC + DCAC)(10L)						
	3. 16-Nozzle Design & Development of existing Ink Jet Printing Sys (14L)						
	4. Modification of existing Plasma Gun (7L)						
	5. Solution Plasma Spray – Add on system (2L) WP#2	1,14,00,000					1,14,00,000
	6. Design & Development of Graphene Mfg Apparatus (20L, 2 nd Year) WP#3						
	7. Design & Development of Centrifugal Powder Making Apparatus (23L)						
	8. Modification to Attritor (for Milling in H2) (6L, 2 nd Yr)						
B	Recurring Items (General)						
1.	Manpower	21,00,000	21,00,000	21,00,000	21,00,000	21,00,000	1,05,00,000
2.	Consumables	31,00,000	35,00,000	25,00,000	15,00,000	5,00,000	1,11,00,000
3.	Contingencies	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000	5,00,000
4.	Travel	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000	5,00,000
5.	Other Costs (Recurring), if any	10,00,000	20,00,000	15,00,000	10,00,000	5,00,000	60,00,000
6.	Overhead	1,60,000	1,60,000	1,60,000	1,60,000	1,60,000	8,00,000
	<i>Subtotal(General)</i>	65,60,000	79,60,000	64,60,000	49,60,000	34,60,000	2,94,00,000
C	Total cost of the project (A+B), NFTDC	1,79,60,000	79,60,000	64,60,000	49,60,000	34,60,000	4,08,00,000

(IISc)

S. No	Item Head	1 st Year	2 nd Year	3 rd Year	4 th year	5 th year	Total
A	Non-recurring(Capital Items)						

1	Permanent Equipment List WP#1						
2	1. Workstations + Engg software (20L)						
3	2. Bio-syngas gen system with Oxy steam gasification supplement (30L)						
	3. Fuel cell stack test setup (50L)						
	4. Bio-syngas reforming train – WGS system (Design and iterative operation based system evolution and fabrication) (10L)	1,50,00,00					1,50,00,000
	5. Bio-syngas reforming train – DBD system (Design and iterative operation based system evolution and fabrication) (10 L)	0					
	6. Bio syngas conditioning train (10 L)						
	7. Terminal gas heat recovery system (5L)						
	8. Burner system for varying terminal gas composition (5L)						
	9. Mass flow valves, controllers and sensors (10 L)						
B	Recurring Items (General)						
1.	Manpower	6,60,000	6,60,000	6,60,000	6,60,000	6,60,000	33,00,000
2.	Consumables	5,00,000	5,00,000	5,00,000	5,00,000	5,00,000	25,00,000
3.	Contingencies	50,000	50,000	50,000	50,000	50,000	2,50,000
4.	Travel	50,000	50,000	50,000	50,000	50,000	2,50,000
5.	Other Costs (Recurring), if any	5,00,000	2,75,000	2,75,000	2,75,000	2,75,000	16,00,000
6.	Overhead	1,00,000	1,00,000	1,00,000	1,00,000	1,00,000	5,00,000
	<i>Subtotal(General)</i>	18,60,000	16,35,000	16,35,000	16,35,000	16,35,000	84,00,000
			0		0	0	
C	Total cost of the project (A+B), IISc	1,68,60,000	16,35,000	16,35,000	16,35,000	16,35,000	2,34,00,000
			0		0	0	

(IIT Madras)

S. No	Item Head	1 st Year	2 nd Year	3 rd Year	4 th year	5 th year	Total
A	Non-recurring(Capital Items)						
	WP#2						
	1. PCT – DSC Apparatus & Related System (50 L)						
	2. Constant temperature baths,						

5.	Other Costs (Recurring), if any	0	0	0	0	0	0
6.	Overhead	30,000	30,000	30,000	30,000	30,000	1,50,000
	<i>Subtotal(General)</i>	7,60,000	7,60,000	6,60,000	6,10,000	6,10,000	34,00,000
C	Total cost of the project (A+B)	7,60,000	7,60,000	6,60,000	6,10,000	6,10,000	34,00,000

Sree ChitraThirunal College of Engineering, Thiruvananthapuram

S. No	Item Head	1 st Year	2 nd Year	3 rd Year	4 th year	5 th year	Total
A	Non-recurring(Capital Items)						
	Workstations + Engg Software (Matlab + Multi Physics COMSOL)	11,00,000					11,00,000
B	Recurring Items (General)						
1.	Manpower	4,20,000	4,20,000	4,20,000	4,20,000	4,20,000	21,00,000
2.	Consumables	0	1,50,000	1,50,000	1,50,000	1,50,000	6,00,000
3.	Contingencies	50,000	50,000	50,000	50,000	50,000	2,50,000
4.	Travel	50,000	50,000	50,000	50,000	50,000	2,50,000
5.	Other Costs (Recurring), if any	0	0	0	0	0	0
6.	Overhead	30,000	30,000	30,000	30,000	30,000	1,50,000
	<i>Subtotal(General)</i>	5,50,000	7,00,000	7,00,000	7,00,000	7,00,000	33,50,000
C	Total cost of the project (A+B)	16,50,000	7,00,000	7,00,000	7,00,000	7,00,000	44,50,000

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3. This Sanction is subject to the conditions that the grantee organization 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 (SF) 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.
4. The grantee organization will have to enter & upload the Utilization Certificate in the PFMS portal besides sending it in physical form to this Division. The subsequent/final installment will be released only after confirmation of the acceptance of the UC by the Division and the entry of previous Utilization Certificate in the PFMS.
5. If the grant has been released under the 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.
6. The grant-in-aid being released is subject to the condition that
 - (a) a transparent procurement procedure in the line with the Provisions of General Financial Rules 2017 will be followed by the institute /Organization under the appropriate rules of the grantee organization while procuring capital assets sanctioned for the above mentioned project and a certificate to this effect will be submitted by the Grantee organization immediately on receipt of the grant.
 - (b) While submitting Utilisation Certificate/Statement of Expenditure, the organization has to ensure submission of supporting documentary evidences with regards 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.
7. The grantee organization will maintain separate audited account for the project and the entire amount of grant will be kept in an interest bearing bank account. For grants released during FY 2018-19 and onwards, all interests and other earnings, against released grant shall be remitted to Consolidated fund of India, immediately after the finalization of accounts, as it shall not be adjusted towards future release of grant. A certificate to this effect shall have to submit along with Statement of Expenditure/ Utilization Certificate for considering subsequent release of grant/closure of project accounts.
8. 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.
9. In case the scheme provides for payments 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.
10. The account of the grantee organization 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 organization is called upon to do so, as laid down under rule 236(1) of General Financial Rules 2017.

11. Due acknowledgement of technical support/ financial assistance resulting from this project grant should mandatorily be highlighted by the grantee organization 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.

12. 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.

13. The expenditure involved is debit to Demand No.84, Department of science & Technology for the year 2018-19:

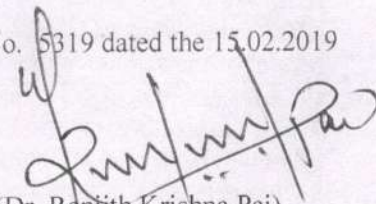
3425	Other Scientific Research (Major Head)
60	Other
60.200	Assistance to other scientific bodies (Minor head)
70	Innovation, Technology Development and Deployment
70.00.35	Grants for creation of capital assets-plan 2018-19 (CEMI) (Previous: TDP-TMD-3425.60.200.70.00.35)

14. The amount of **Rs. 3, 45, 00,000/- (Rupees Three Crore Forty five Lakh Only)** will be drawn by the Drawing and Disbursing Officer, DST and will be disbursed to **Nonferrous Materials Technology Development Centre (NFTDC), Hyderabad**. The bank details for electronic transfer of funds through RTGS are given below.

1. Name of the Account Holder: - Nonferrous Materials Technology Development Centre (NFTDC)
2. Name of the Bank: - Canara Bank
3. Bank Account Number: - 1849201000310
4. IFSC Code: - CNRB0001849
5. MICR Code: - 500015032

15. As per Rule 234 of GFR 2017, this sanction has been entered at S.No. **3.77**. In the register of grants of grants maintained in the Division for the scheme (TMD).

16. This issues with the concurrence of IFD Vide their Concurrence Dy. No. 5319 dated the 15.02.2019


(Dr. Ranjith Krishna Pai)
Scientist 'D'

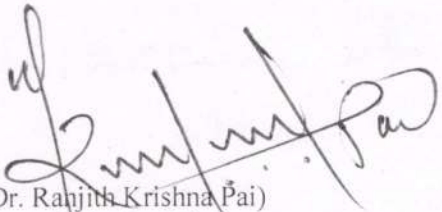
To

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

Copy for information and necessary action to:

1. Cash Section (3 copies), DST, New Delhi--for preparing the bill and remitting the amount to the grantee
2. Accounts Section, DST, New Delhi, 3. IFD, DST, New Delhi.
3. Director of Audit (CW & M-II), AGCR Building, IP Estate, New Delhi.
4. **Dr. K Balasubramanian (Lead PI), NFTDC**
Dr Anand M Shivapuji (IISc, Bengaluru)
Prof P. Maiya (IIT Madras, Chennai),
Dr Soobhankar Pati (IIT Bhubaneswar)

5. Sanction folder
6. Office Copy
7. Head- TMD
8. FICCI Cell



(Dr. Rajith Krishna Pai)
Scientist 'D'