

Recommendations on the Proposal for establishing the Carbon Capture and Utilization (CCU) Centre of Excellence (CoE) at JNCASR, Bengaluru.

2 messages neelima.alam <neelima.alam@nic.in> Wed, Sep 8, 2021 at 5:07 PM

To: sebastiancp <sebastiancp@jncasr.ac.in>, sebastian peter <sebastiancp@gmail.com> Cc: eswar@jncasr.ac.in, abhishek@mrc.iisc.ernet.in, rajnish@iitm.ac.in, ujjalgautam@iisermohali.ac.in, Vinod C Prabhakaran <cp.vinod@ncl.res.in>, sudip@iiti.ac.in, Sanjai Kumar <sanjai.k@gov.in>, "Dr. Anita Gupta" <anigupta@nic.in>

Dear Prof. Sebastian C Peter, Thank you for submitting a full proposal for establishing the Carbon Capture and Utilization (CCU) Centre of Excellence (CoE) at JNCASR, Bengaluru. Please note that in the third phase of evaluation your submitted proposal has been reviewed and evaluated by the Expert Evaluation Committee constituted with the approval of Secretary DST.

We are glad to inform you that above mentioned proposal "Carbon Capture and Utilization (CCU) Centre of Excellence (CoE)" has been recommended for support for 5 years at a total cost of Rs. 5.00 crores (excluding overheads cost).

The Evaluation Committee has recommended the following objectives and deliverables for the Centre of Excellence proposed to be established at JNCASR, Bengaluru:

1. Among the major objectives of the proposed Center of Excellence (CoE) at JNCASR, Bengaluru going to be established with DST's support is the creation of centre with scientific knowledge, and technology expertise in areas of Carbon Capture, and Utilization (CCU) which will undertake research in frontier areas of CCU. The important visible "soft" and "hard" deliverables of this CoE will be:

- a) Research papers in reputed international journals, b) International patents granted, c) Number of Ph.D. scholars trained by the CoE in the field of CCU (HRD outputs) and, importantly, d) The number of specific and relevant CCU technologies developed indigenously and transferred to the industry by this CoE.

2. In addition to carrying out HRD activities (like attending conferences, organizing seminars, mutual visits, public awareness programs, consultations etc), the experimental development and demonstration of technologies for CO2 capture, utilization and storage are indicators of the quality, capability and utility of the CoE to Indian academia, industry & society. Since the CoE is funded by the DST, indigenous technology development and commercialization should also be essential functions of the CoE.

3. Recommendation for support is subject to clearance on issue of Conflict of Interest related to your involvement as the lead PI in this DST recommended consortia and also being the non-Executive Director in a start up company Breathe Applied Sciences Pvt Ltd based in Bengaluru which is also engaged in the area of CCUS activities. In this regard, you as Lead Investigator of the CoE and the lead organisation (JNCASR, Bengaluru) along with other partnering organisations in the CoE will have to provide an undertaking to DST regarding neutral transfer of Technologies emerging from the CoE activities to the relevant Industry/start ups with no preferential consideration to Breathe Applied Sciences Pvt ltd or any others whatsoever.

4. Proposed CoE at JNCASR, Bengaluru is recommended for support at a Total cost of Rs. 5 crores for 5 years (excluding overheads) subject to the following Committee's recommendations:

Recommendations for Specific Technology Development for proposed CoE at JNCASR, Bengaluru:

- Development and demonstration, at lab scale level, in a continuous flow experimental unit, of the conversion of (CO2 + H2) to a mixture of CO and hydrogen (syngas) with a minimum output of 1kg per hour of syngas within one year of the CoE duration; Development and demonstration, at lab scale level, in a continuous flow experimental unit, of the conversion of (CO2 + H2) to a minimum of 1 kg per hour of a mixture of C2 to C18 hydrocarbons and wherein the (CH4 +C18+) content among the total hydrocarbons in the product is less than 10%wt, within two years of the CoE duration; and Development and demonstration, in a continuous flow experimental unit, the conversion of (CO2 + H2) to a minimum of 1kg per hour of a mixture of C2 to C4 olefinic hydrocarbons and wherein the (C2 to C4) olefinichydrocarbon content among the total hydrocarbons in the product is more than 70% wt within three years of the CoE duration. Conversion of CO2 into methanol maybe dropped from the Objectives as it is already developed by Breathe Applied Sciences pvt ltd

General Guidelines for proposed CoE at JNCASR Bengaluru:

- 1. The CoE will facilitate in capturing & mapping of current R&D and innovation activities in the domain and also develop network of researchers, industries and stakeholders. It will help in bringing collective strength of the country and assist in development of an appropriate and feasible R&D and innovation roadmap. 2. The centre will also keep watch on international trends and suggest possible collaborative endeavours. 3. This Centre will also be leveraging the funds being made available under various international programmes for feasibility studies, mapping etc. 4. Activities requiring major R&D and innovation funding, if needed will be supported separately through an appropriate mechanism, based on priorities identified by the Centres and approved by the Expert committee constituted by DST. 5. R&D activities utilizing existing available infrastructure with network of institutions can form part of the activities of the Centre. 6. The Centre will be supported for five years with midterm review to assess their relevance and contribution to justify the further continuation. 7. It was advised to provide present status of technologies proposed to be workedon, in terms of their current TRLs. The Expected outcome were also directed to cover year-wise targets in terms of TRLs as well. 8. The lead PI, lead organisation (JNCASR, Bengaluru) along with other partnering organisations in the CoE will have to provide an undertaking to DST regarding neutral transfer of Technologies emerging from the CoE activities to the relevant Industry/start ups with no preferential consideration to Breathe Applied Sciences pvt ltd or any others.

The above mentioned recommendations must be incorporated into revised proposal in highlighted form and also revise the budget as per the recommended cost mentioned above. The revised proposal must be submitted as whole one pdf file.

Along with revision in budget kindly also provide us the following documents along with justifications for each head as per the revised recommended budget for both organizations wise (if any) and compiled budget :

- 1. Manpower section of the budget needs to be revised (if haven't been done already) as per the revised fellowship norms which are available on the DST website. The sanction SR/S9/Z-08/2018 dated 30.01.2019 and SR/S9/Z-05/2019 dated 20.08.2019 (as per applicability) are also attached in scanned form for your reference please. 2. Scanned copies of the quotations for the permanent equipment to be procured from e-GEM system (quotations must be marked up as per the lowest price of equipment which is reflected in proposed budget). If the proposed equipment or software is not available on the GeM system, kindly certify the non-availability of equipment/consumable/software/contingency to DST in writing. And at least three quotes from the respective vendor on each equipment/consumable/software/contingency item maybe submitted to DST via email for equipments which are unavailable on GeM. 3. Scanned copies of the quotations for the Consumables to be procured from e-GEM system. Please provide year wise break up for the funds required under the consumables head with estimated cost in a tabular manner. 4. Details of foreseen necessary Travel under each work package and partnering organization. Please provide adequate justification for the mobility & travel expenses. 5. Contingencies with estimation (year wise break up) must be provided in details along with quotations as mentioned in point no. 2 above. 6. Other costs details of following aspects:(whichever applicable) a. Civil construction - provide schedule of rates (if applicable) b. Testing or analytical or service charges from accredited labs c. Maintenance charges d. Workshop, events, awareness programs conduction etc. e. Geo-spatial data requirement (if applicable) f. Any other items

7. Bank Details of the Indian Lead Organization and Indian partnering organizations, all beneficiary organizations must be registered on https://pfms.nic.in/NewDefaultHome.aspx under scheme of 1819-Innovation Technology Development and Deployment, account must be of Saving type for deposit of Interest accrued yearly. Kindly also submit the unique PFMS id of the beneficiary agencies.

- a. Name of the Account Holder as per Bank b. Name of the Bank c. Name of the Branch and address d. IFSC code e. Account number

Kindly work in coordination with other partnering organisations in your consortia and prepare compiled documents (institution wise) and kindly submit the documents as mentioned above for further compliance and processing as soon as possible to enable timely processing of your case and avoid unnecessary delays.

Please get back to us with your response (including MS excel sheet of budget) on the above positively by 16.09.2021 to enable timely processing of your case.

Thanking you for associating with us, Sincerely, Neelima

डॉ। नीलिमा आलम | Dr. Neelima Alam वैज्ञानिक 'एफ' | Scientist 'F' प्रौद्योगिकी मिशन प्रभाग (ऊर्जा, जल और अन्य) | Technology Mission Division (Energy, Water & Others) विज्ञान और प्रौद्योगिकी विभाग | Department of Science and Technology विज्ञान और प्रौद्योगिकी मंत्रालय | Ministry of Science and Technology कमरा नंबर -41, एस एंड टी ब्लॉक- III | Room No.-41, S&T Block-III न्यू महारौली रोड, नई दिल्ली- 110016 | New Mehrauli Road, New Delhi- 110016 फोन (Phone) : +91-011-26590467



2 attachments

- OM no. SR_S9_Z-05_2019.pdf 5136K OM no. SR_S9_Z-08_2018.pdf 398K

Sebastian chirambatte peter <sebastiancp@gmail.com> Sat, Sep 18, 2021 at 8:44 AM To: "neelima.alam" <neelima.alam@nic.in> Cc: sebastiancp <sebastiancp@jncasr.ac.in>, Eswar Moorthy <eswar@jncasr.ac.in>, abhishek@mrc.iisc.ernet.in, rajnish@iitm.ac.in, ujjalgautam@iisermohali.ac.in, Vinod C Prabhakaran <cp.vinod@ncl.res.in>, sudip@iiti.ac.in, Sanjai Kumar <sanjai.k@gov.in>, "Dr. Anita Gupta" <anigupta@nic.in>

Dear Dr. Neelima Alam, Thanks for your email with the recommendation of our proposal to establish a CoE on CCU at JNCASR. I will revert back to you with the relevant documents and revisions in the proposal at the earliest.

We, JNCASR, have the expertise to establish this centre. The only problem is that the recommended funding is too small to establish this Centre with the technology developments proposed by the committee. We need more infrastructure to fulfill those deliverables. However, I take it as a challenge and will try to get some additional support from JNCASR. I will also use some of my existing facilities (item 5) and will explore points 3 and 4 mentioned in the guideline in due course

We may invite a few more industry sectors as potential investors/collaborators with the support of DST and other partners.

Best regards, Sebastian [Quoted text hidden]

Prof. Sebastian C. Peter Associate Professor New Chemistry Unit Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR) Jakkur, Bangalore-560064

also, Faculty of School of Advanced Materials (SAMat), JNCASR

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