CENTRE FOR MATERIALS FOR ELECTRONICS TECHNOLOGY (C-MET)

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Invitation for the Expression of Interest (EOI) for collaboration from the interested parties under Centre of Excellence in Rechargeable Battery Technology [CoE RBT](Pre-Cell)

Centre for Materials for Electronics Technology (C-MET) is a Registered Scientific Society in March 1990 under Ministry of Electronics and Information Technology (MeitY), as a unique concept for development of viable technologies in the area of materials mainly for electronics. C-MET is operating with its three laboratories located at Pune, Hyderabad and Thrissur with specialized research mandate at each place.

Various process and product technologies were developed in the area of electronic materials through all these years but a major stumbling block was the after effects of globalization and open market scenario immediately after the formation of C-MET. Understanding this scenario, new knowledge based methodologies have been evolved to increase the partnership of end users like industries and strategic sectors in C-MET's technical program.

To develop the indigenous technologies in the area of electrochemical energy storage materials to support the Industries for commercial applications, C-MET has created basic infrastructure and facilities for development of Li-ion and Na-ion batteries. C-MET, Pune has developed indigenous cathode and anode materials, established proto-type fabrication and testing facility for Coin/button and Pouch/rectangular lithium ion cells. The capacity of the developed cells is found to be comparable with that of the commercially available cells.

C-MET in its efforts has already developed indigenous cost-effective technology for various chemistries of Li-ion battery (or materials for cathode and anode) including current commercially relevant chemistries, such as LCO and NMC. C-MET has also developed alternative anodes such as spherical hard carbon using cost effective techniques. The cathode and anode material making technology is suitable for Indian environment. C-MET developed 500g batch indigenous cathode material technology showing comparable capacity to commercially available cells and stability up to at least 500 cycles. However, the technology still requires end-to-end machinery development and IPR protection for full commercialization.

Apart from C-MET, several academic as well as R & D labsetc. have extensively worked on electrochemistry and button cell performances. Although the knowledge, know-how on electrochemistry of Lithium systems are well known in India, there is a clear lack of knowledge, know-how and IPR of techno-commercial aspects of the lithium ion battery technology for commercial exploitation.In response, MeitY has created a R&D platform,

Centre of Excellence in Rechargeable Battery Technology [CoE RBT] (Pre-cell) at C-MET (Pune), which is expected to support creation of Indian cell manufacturing eco-system through its indigenous cost-effective manufacturing technologies suitable for small players/ SMEs. The CoE is initially supported by Government and Industries of India for 5 years to plan and create a complete facility by augmenting CMET's work in last 15 years.The CoE is planned to achieve self-sustenance within five years through revenue generation from technical and consultancy services primarily to industry.

C-MET is seeking "Expression of Interest" from the interested parties (PSUs, NavratnaCompanies, Private Industry or Consortium thereof)in the country to participate in the Centre of Excellence in Rechargeable Battery Technology (Pre-cell) at C-MET, Puneas second co-funding industrial partner with following responsibilities:

- Partial funding commitment from Industry partner to CoE RBT (Pre-cell) of Rs 4.00 Crores including the design and development of following machineries related to Li-ion and Na-ion battery cell manufacturing to be placed at C-MET, Pune towards the CoE RBT (Pre-cell) project:

S.No	Machinery	Purpose
1.	Battery cycler system (450V, 200A with thermal chamber)	Testing of various types of cells and batteries of different capacities and voltages ranging from ~ 3 V of single cells (mobile phone) to large battery packs for e-vehicles (up to 450 V)
2.	Laser Welding Machine for prismatic cells	Hermetic Sealing of prismatic cells
3.	Electrode coating Machine	Continuous electrode coating machine

- The co-funding party will be associated for Li-ion and Na- ion battery cell manufacturing, machinery design and transfer of end-to-end indigenous technology for cell manufacturing in India.
- The co-funding party will get the proportionate share as per funding ratio in the revenue generated from know-howand IPR generated from collaboration activity. The MoU shall be executed for the same.

The interested parties should possess the following:

1. Adequate experience in battery manufacturing and related to materials, process, technology or machinery.
2. Adequate infrastructure related to materials, process, technology or machinery of battery manufacturing process.
3. Previous experience in executing similar kind of research work in association with a Government Department/PSU
4. Parties in the field of regeneration of cathode and anode of battery cells

Instructions to the Proposers

(i) Proposers may submit their Company Profile as per the format (Annexure -I) along with supporting documents in a Sealed envelope (by mentioning 'EOI for COE RBT Pre cell) by registered post/Speed Post or delivered in person, so as to reach the**Director**, **Centre for Materials for Electronics Technology (C-MET), Panchwati, Off. Dr. HomiBhabha Road, NCL (PO), Pune – 411 008 on or before 30.09.2020 at 1400 hrs.**

(ii) The responsibility for ensuring that the applications are delivered in time vests with the "Proposers".

(iii) The 'Director General, C-MET' may, at his discretion, extend this deadline for the submission of application, in which case, all rights and obligations of 'C-MET' and Proposer(s) previously subject to the deadline will thereafter be subjected to the deadline as extended.

(iv) The applications submitted by the respective "Proposer(s)" in response to this EOI shall be valid until the award of the contract by 'C-MET' and the "Proposer(s)" shall be bound by their bids until such period.

(v) The application(s) and material(s) submitted by the Proposer(s) in response to this EOI will become the property of the 'C-MET'.

(vi) 'C-MET' shall neither be responsible nor pay any expenses or losses which may be incurred by the "Proposer(s)" in the preparation and submission of their application.

(vii) The application submitted by "Proposers" shall be treated as private and confidential documents, whether or not 'C-MET' accepts the application.

(viii) The EOI should be accompanied by complete details of the agency / organization, audited financial statement/ certificate, evidence of experience such as client's certificates, project completion certificates or any other relevant document and details of remittance of the cost of EOI document.

(ix) In the case of start-up complete details of the company including their financial soundness/ source of funds and a write up on how they plan to bring the product to market in case they were awarded the technology are to be forwarded. Educational background and relevant work experience to absorb and market the product shall also be informed along with any other relevant document and details of remittance of the cost of EOI document.

(x) C-MET reserves the right to accept or reject any or all EOIs at any point of time without assigning any reason whatsoever.

Annexure-I

Checklist of the documents to be submitted along with the Expression of Interest (EOI)

Sl. No.	Documents	Included Yes/No
1	Full details of the party Name, address, telephone number etc.	
2	PSUs/ Navratna Companies/ Private Industry/ Consortium thereof	
3	No. of years of experience in the field of battery fabrication/allied filed, major achievements etc.	
4	Details of the infrastructure to carry out fabrication and testing, handling, dismantling, segregation and Regeneration of cathode and anodeand present capacity.	
5	Details of the infrastructure for synthesis/fabrication/testing related to battery cell manufacturing or research material, process, technology or machinery.	
6	Details of the R&D activities carried out in battery material, process, technology or machinery and regeneration.	
7	Copies of audited financial statements for the last three years to show the financial strength of the company.	
8	Previous experience in executing similar kind of research work in association with a Government Department	
9	Details of the infrastructure can be extended to the implementation of the above project	
10	Year wise Fund Commitment schedule	