GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
(Technology Mission Division)

Call for Oriented Research&Technology Development Proposals on "*Materials for Energy Storage*" *(MES)* - 2018

Preamble: DST is seeking to support novel energy storage research proposals addressing one or more of the following challenges:

- Materials and materials design
  - Projects should seek to improve the lifetime and performance of energy storage devices through improved materials design and development.
  - Projects should seek to achieve performance advances in terms of energy and power density, together or separately, as they are important for future energy storage devices.
- Diagnostics
  - Projects should seek to improve the tools and methodologies needed to understand and predict the characteristics and performance of energy storage materials, components, devices and systems, under different conditions and at different length and time scales.
  - Development of methodologies to diagnose energy storage systems under prevailing conditions with sufficient speed and accuracy to enable the efficient and safe operation of the system.

Scope: Energy storage research include breakthrough research for materials leading to disruptive innovations in energy storage and may address all areas of energy storage technologies including: Chemical and electrochemical technologies (including alternatives to critical metals used in efficient energy storage); Electrical technologies; Mechanical and thermal storage technologies. The research should primarily address stationary applicationsand distribution of electricity. Research may range from the development of improved storage systems for electricity gridsto the demonstration and assessment of new technologies and systems analysis issues.This call for Efficient Energy Storage and Distribution is not exclusive to the above mentioned research issues and the call is open to any other research issue addressing the problems in efficient storage of energy.

Please note that hydrogen storage is outside the scope of this call.

The proposers are encouraged to consider following aspects in their proposals where appropriate:

- Modelling as a tool to facilitate development of computational materialswith next-generation computing, artificial intelligence (machine learning), and robotics tools, with the aim of creating a more fully integrated approach.
- The manufacturability of new materials and devices including scale-up andCost.
- End of life aspects should be considered from an early stage to ensure new

devices stand the best chance of minimising environmental impact down the line.
- Application and integration of materials into device.

Disruptive research proposals which seek to achieve a breakthrough in Energy Storage technologies are particularly welcome in this call. All proposers must indicate how their proposed work would solve a particular need.

Funding Available:

Research Stream (Stream A) : 1 Crore maximum
Technology Stream (Stream B): 3 Crore maximum

Project Duration : 3years maximum

Equipment:

Where possible, researchers are advised to make use of existing facilities and equipment, including those hosted at other universities. If equipment is needed as part of the research proposal, applicants must follow DST's norm for requesting equipmentwhich will be made available only on the basis of strong dedicated requirement for the project.

Who can apply:

The collaborative research and/or technology endeavour is primarily between scientists and engineers in India.

Research Stream (Stream A): Faculties/ Scientists working in regular position in recognised Academic Organisation/ Public funded R&D Institution/ Laboratories are eligible to apply.Interface with select foreign University / Institutions could be considered on a very selective basis under the overall umbrella of Science & Technology agreement with concerned country provided it does not envisage any funding to foreign partners. Only mobility support to Indian Scientists, especially young researchers could be considered, where absolutely essential.

Technology Stream (Stream B): The call is invited from Scientists, in recognised academic organisation/ public funded R&D Institute / laboratories, preferably in consortium of industrial partner and academic/ research institution. Participation of industry with clearly identified role is mandatory. The roles and responsibilities of each partner should be clearly delineated in the proposal. The industrial partner should have proven standing and R&D capability in the area of Clean Energy.

Submitting an application

Please submit the proposal online at http://onlinedst.gov.in/Login.aspx. Send 2 hard copies of complete project proposal in prescribed format with all enclosures (1 marked original + 1 hard copies) & Soft copy of complete proposal in MS word and PDF in Pen Drive in an envelope marked "**Call for Research & Technology Proposals on "*Materials for Energy Storage" (MES)* - 2018/*Stream Name/ PI Name***)".

The complete set of documents are to be addresses to: **Dr. Ranjith Krishna Pai**, Scientist 'D' / Principal Scientific Officer, Room no: 13-C, Block-1, Technology Mission Division, Department of Science and Technology (DST),

Ministry of Science and Technology, Government of India, Technology Bhavan, New Mehrauli Road, New Delhi -110016 before the closing date of the call.

Soft copy of Project Proposal is to be e-mailed (Subject Captioned: Call for Research & Technology Proposals on "*Materials for Energy Storage*" *(MES)* - 2017 / Stream Name / PI Name) to ranjith.krishnapai@gov.in by **31st May, 2018**.

Assessment

Proposals will be screened and considered by an expert panel. **Applicants will be informed of the outcome assoon as possible after the panel meeting and PI(s) may be called for presentation on the proposal for the next level of evaluation.**

The panel will be requested to assess the proposals against the assessment criteria as listed below. As such the nature of the challenge and the scientific quality of the proposal are critical, as well as the fit of the proposal to the call.

Assessment criteria

The relevance of proposal to call objectives need to be conclusively established. The proposal relevant to call objectives will be evaluated based on following criteria:

a. Novelty of the proposed work,
b. Need assessment and demand for proposed work,
c. Scientific appropriateness of deliverable of proposed approaches and technical merit
d. Expertise, facilities and track record of team. Appropriateness of industrial partner competence of each member facilities available to conduct research
e. Proposal formulation. Literature/patent review, qualified objectives, methodology and work plan, clear and well defined deliverable.

The weightage of above parameters will vary for both the streams.

Project Implementation: The grantee organization/ PI must provide progress report of the work carried out under the project, that will be assess with quarterly milestones. DST approved committee may visit the organization periodically to review the progress of the work being carried out and suggest suitable measures to ensure realization of the objectives of the project.

Note: Kindly note that:

The PI can submit only one proposal against this MES 2018 Call either in stream A or stream B. Submission of more than 1 proposal from a PI, would liable to be disqualification of all the submitted proposal.PIs whose proposal have been recommended/ awarded for grant from DST under MES 2016and MES 2017 programme are not eligible toapply.

Key Dates:

Activity	**Date**
Deadline for Full Proposals	**31st May, 2018**

Stream A and Stream B	

Contacts: Any enquiries related to this call should be directed to:

Dr. Ranjith Krishna Pai
Room No: 13-C, Block-I, Main Building
Scientist 'D' / Principal Scientific Officer
Technology Mission Division,
Department of Science and Technology (DST)
Ministry of Science and Technology, Government of India
Technology Bhavan, New Mehrauli Road
New Delhi -110016
E-mail: ranjith.krishnapai@gov.in