

Government of India
Department of Science and Technology

2008 INDIA- EUROPEAN COMMISSION COORDINATED
(JOINT) CALL FOR PROPOSAL IN COMPUTATIONAL
MATERIAL SCIENCE

- **Date of publication:** January 9,2008
- **Deadline:** For collaborative projects - Small or medium-scale focused research projects - 24 April 2008 at 2030 hrs (India local time) and at 17.00 (Brussels local time) as each proposal has to be submitted to both Department of Science and Technology (DST) Government of India and European Commission (EC) Brussels according to some common and other sponsor specific requirements.
- **Indicative budget:** Euros 5 Million in 2008 by European Commission (a similar level of funding is expected from Department of Science and Technology DST, Government of India to support Indian research partners in the EU-India projects)

For the small or medium scale focussed research projects the maximum funding request for an India-EU Research Project must not exceed Euros 1M from EC and a similar level of funding can be requested from DST

- **Topics called:** India-EC Coordinated Research Activities in Computational Material Science as per the workprogram details given in **Annex.I**
- **Proposal Submission :**

Eligible Applicants & Project Partnership Requirements: A balanced participation of partners from Europe and India is required. As far as European partners from European Union (EU) Member States (MS) and Associated States (AS) are concerned, minimum number of participating legal research entities is 3 from three different countries. Similarly as far as Indian partners are concerned, a minimum number of participating legal research entities is 3 from different institutions, preferably from different Indian states .Eligible partners can be legal research entities from academic institutions, research institutes , undertakings or firms/SMEs * as per domestic norms in EU and India.

{* Funding will be limited to 50% of the project cost by way of grant/loan (as per norms of co-sponsors)}

Application format: The proposals shall be submitted on a common application form (Part B of the Proposal together with Draft Consortium Agreement) by the prescribed closing date of the Call : 24 April 2008. by the Indian and EU Project Coordinator respectively to their counterpart funding agencies concurrently , namely, Department of Science & Technology (International Cooperation Division) , New Mehrauli Road New

Delhi 110016 India (Email: srelia@nic.in) and EC Directorate General Research, Brussels Belgium (Email:Jose-Lorenzo.Valles @ec.europa.eu)

- Even if the administrative forms to be used are those required by DST and EC respectively, the Part B Proposal Form and Consortium Agreement Form (**Annex.1**) presenting similar scientific and technical content , should be common.
- The evaluation criteria and sub-criteria, together with the eligibility, selection and award criteria to be applied to this call are given in this announcement.
- Forms of grant and maximum reimbursement rates for projects funded through the cooperation work program are given in **Annex. I** and also finds a suitable mention in the proposal submission form **Annex.II**

Consortia agreements: Participants are required to conclude a consortium agreement and a final draft has to be provided together with the joint research project proposal being submitted on or by the prescribed official closing date of the Call .

- **Evaluation procedure (including criteria & minimum thresholds for the proposals:**
The project proposals should be structured in 3 main parts reflecting the evaluation criteria that will be applied, i.e. S/T quality, implementation and expected impact. The 3 parts of the proposals should cover the S&T content, clear identification of the intended results, their intended use and the expected impact (economic, social, environmental, etc.), as well as the implementation, and describe the roles of the consortium and the estimated financial resources. Consortium Agreement should also be prepared and furnished at the time of proposal submission itself.

For this call the evaluation shall follow a one-stage evaluation procedure. The proposals will be evaluated jointly by the co-sponsors, through India-EU Scientific Evaluation Panel, on the basis of following mutually agreed three evaluation criteria, i.e. S/T quality ,implementation and expected impact.

For this call, implemented via a one stage procedure, the following criteria and thresholds are applied: The proposals are evaluated on the basis of the following three criteria: **1. S/T quality; 2. Implementation; 3. Impact.** For each criterion marks from 0 to 5 will be given, with the possibility of half-point scores. Successful proposals must pass the minimum thresholds as follows:

Criteria	Minimum threshold
S/T quality will subsume: S&T excellence,Relevance.	4/5
Implementation will subsume: Quality of Consortium including their complementarity, balance in distribution of research	3/5

activities across both sides.	
Impact will subsume: Financial, Innovation, Competence building- cultivating critical mass of researchers , Exploitation of results, Joint knowledge creation	3/5
Overall threshold required	12/15

India-EU research projects, recommended by Joint Scientific Evaluation Panel, will be processed for necessary approvals and clearances respecting (a) domestic regulations/requirements of respective co-sponsoring agencies as well as (b) requirements stipulated in the India-EC S&T Agreement.

Indicative evaluation and contractual timetable: Publication of Call: January 9,2008 ; Deadline for Submission: 24 April 2008; Evaluation June 2008; Announcement of successful India-EU research projects : Estimated to be available within three months after the closure date. A reserve list of projects might be established. Negotiations will be carried out in parallel by the DST and EC , in order to have a simultaneous start of the grant letter issued for jointly selected and approved India-EU Research Projects to Indian & EU Project Coordinators respectively .

WORK PROGRAMME FOR 2008 INDIA-EUROPEAN COMMISSION COORDINATED (JOINT) CALL FOR PROPOSAL IN COMPUTATIONAL MATERIAL SCIENCE

Technical content/scope:

In the framework of the India-EU S&T Cooperation Agreement, the Department of Science and Technology (DST), Government of India and European Commission (EC) are working together to enhance opportunities for joint activities in materials research between Indian and European teams. Computational modelling has become a major tool to understand materials properties, as well as in their design and industrial use. Multidisciplinary efforts using the powerful computational tools of materials modelling are essential for the understanding of the complex behaviour of new knowledge based materials. Numerous methods are now available, ranging from ab-initio calculations and molecular dynamics to the macroscopic level.

The proposals must be clearly relevant to computational materials science at the frontier of knowledge. The expected joint projects should focus on the understanding and modeling of material properties, processing and performance. Various computational approaches can be considered including *ab initio* theories, model Hamiltonian approaches, atomic simulation such as MC and MD, FEM, DEM, Quasi continuum approaches and multi-scale simulation methods which take into account scale integration covering from atomic level to continuum approaches. The links between simulation, theory, experiment, validation and use should be taken into account.

Areas of computational materials science covered include, but are not limited to, modeling of: nanomaterials, metallic materials, ferroic materials, ceramics, polymers, composites, nature mimicking materials, biomaterials, green solvents, alloys, clusters, interfaces, size-dependent effects, dislocations, diffusion, electronic and optical properties, as well as different aspects of the thermal and mechanical behaviour of materials.

Funding scheme: Small or medium-scale focused research projects, co-sponsored by the Department of Science and Technology (DST) Government of India and European Commission (EC). The proposals should take into account that any accommodation (board and lodging) of the Indian researchers in Europe should be paid by the European host partner, whereas that of the European researchers in India will be paid by the Indian host partner.

Special features: Cooperation with Indian research teams is essential. Proposals which do not include Indian partners will be considered ineligible. To ensure a project implementation that reflects a more genuine EU-India cooperation, priority will be given to proposals showing a balanced participation of partners from Europe and India and where the research work packages involve properly integrated research activities.

The co-sponsors will fund their respective scientific institutions/scientists engaged in jointly approved India-EU research projects. Funding will be under following budget heads:

1. Direct Cost

- i. **Manpower** (according to the respective norms of the sponsoring Parties)
Manpower cost is to be calculated in terms of person months.
- ii. **Equipment** (according to the respective norms of the sponsoring Parties)
Only incremental equipment as would be necessary for pursuing collaborative work will be allowed.
- iii. **Consumable** (according to the respective norms of the sponsoring Parties)
As essential for collaborative work
- iv. **Mobility of scientists** : To be undertaken for joint project related work and given in terms of number of persons and mandays of stay in India/Europe

For Indian project staff visiting EU collaborating institute:

(Number of Indian scientists to undertake project work related visit & man-days of stay in Europe will have to be stated for each year)

- Sending Indian institution takes care of its project staff's return international travel cost (economy excursion class) between place of work in India and place of institution being visited in European country as well as medical insurance (silver class); and
- Receiving European institution takes care of accommodation cost (board and lodging) of the incoming visiting Indian project staff for the actual period of stay in Europe (as per EC norms).

For EU project staff visiting Indian collaborating institute:

(Number of European scientists to undertake project work related visit and & man-days of stay in India will have to be stated for each year)

- Sending European institution takes care of its project staff's return international travel cost between place of work in European country and place of institution being visited in India as well as medical insurance and
- Receiving Indian institution takes care of accommodation (in Guest House or up to 3-star hotel) and subsistence cost of the incoming visiting European project staff for the actual period of stay in India (Per diem of Rs.1000/day for Experienced Researcher or Rs.20,000 per month for Early Stage Researcher)

2. Indirect Cost (according to the respective norms of the sponsoring Parties) e.g Overhead expenses payable to collaborating institutes

Expected impact:

An India-EU Material Science Partnership under the framework of India-EC S&T Cooperation Agreement , supplemented by two-way mobility of researchers, can help create the critical mass of human resources and competence to achieve success in generating new knowledge beyond the state-of the-art to contribute to industrial innovation for the benefit of the European and Indian societies. Reinforcement of the international dimension of European Research within the Seventh Framework Program and of Indian research. Validated predictive models should contribute to the development of new materials including newly emerging nano-structured materials, for flexible production of knowledge-based products leading to industrial competitiveness in the long term.
