The Science and Engineering Research Board (SERB) has its origins from the erstwhile Science & Engineering Research Council (SERC), DST, Government of India which promoted and served the cause of extramural funding for more than four decades. The Board’s creation under the SERB Act 2008 of Parliament had truly been an important milestone in the field of Science and Engineering. Importantly, it also signifies the commencement of a new era to meet the ever increasing aspirations of the scientific community in the country.

The Board, chaired by Secretary, Department of Science and Technology (DST), is comprised of 17 members including seven Secretaries to the Government of India. As per the provisions of the Act, the Board has an Oversight Committee to advise and assist the Board.

SERB strives to ensure expeditious decision making in R&D funding, thereby greatly improving the responsiveness to the genuine needs of the researchers. Appropriate policy interventions on conflict of interest for grant seeking applicants, reviewers, committee members and own officers ensure that the business in the Board is at par with many of the leading global funding agencies. The aim is always to bring more transparency, increased accountability and provide assurance to the general public that processes followed for the award of grants are fair and non-discriminatory.

It’s been an interesting journey for the SERB, where in we are trying to ensure that the rich legacy of erstwhile SERC is carried forward and the new organisation is enriched with requisite infused energy and vigour. This is being achieved through revamping of the existing schemes and at the same time initiate, plan and implement several new and innovative schemes to cater to the diverse needs of scientific community.

Our research funding can be classified broadly under ‘Schemes and Programs’, ‘Awards and Fellowships’ and ‘Partnership Programs’. Extra Mural Research Funding is provided to individual researchers to undertake research in frontier areas of science and engineering. While “High Risk - High Reward” Scheme aims at supporting “out of box” thinking research, “Industry Relevant R&D” scheme provides research support to address industry-specific problems. Intensification of Research in High Priority Areas (IRHPA) program is for doing research in identified high priority areas in multi-institutional, multi-investigator centric mode in synergic manner to achieve desired impact. The Empowerment and Equity Opportunities for Excellence (EMEQ) ensures enhanced participation of people from the weaker sections of the society in research and
development. Programs under S & T Support System provide funds for organizing national and international seminars & symposia in the country and for attending international scientific events held abroad.

SERB has also established different Fellowships and Awards to recognize scientists for their promise or for rewarding performance. These fellowships target different categories of researchers with varying objectives. These include encouraging scientists to return to India from abroad, building national capacity in frontier areas by undertaking collaborative research with foreign institutions, rewarding promising young women researchers with research grant or supporting superannuated researchers to sustain their research activity.

The Board also actively engage itself with other departments, and implements programs of relevance to the country. Cell Tower Radiation in partnership with Department of Telecommunications, Food Processing program with Ministry of Food Processing, IMPRINT and UAY with Ministry of Human Resources Development are examples of such partnerships. SERB has also established partnership with various international organizations. It has already developed programs with NSF & NIH, USA and Royal Society, UK. We are also an active participant in the Global Research Council, a forum for sharing data and best practices for quality collaboration among research funding agencies globally.

We always believe that Excellence - contrary to the popular belief it being a fixed destination is a moving target. Taking this as cue, we are confident that we would continue to deliver performance par excellence across all parameters.

Dr. Rajiv Sharma
Secretary, SERB

Objectives

1. Serves as a premier agency for planning, promoting and funding internationally competitive research in emerging areas

2. Identifies major inter-disciplinary research areas, and individuals, groups or institutions and funds them for research

3. Assists in setting up infrastructure and environment for scientific pursuit

4. Enables synergy between academic institutions, research and development laboratories and industry for promoting basic research in science and engineering

5. Evolves a management system to speedily provide research funds, including monitoring and evaluation by adopting modern management practices
The scheme is aimed at supporting proposals that are new, challenge existing hypothesis, and provide ‘out of box’ thinking on important problems. It should contain significant risk elements but promise of high reward if the difficulties could be circumvented. It is expected that the success of such proposals will have far reaching implications in S&T. Outcome could be new and significant theoretical or experimental advances, formulation of new hypothesis, or breakthrough science which will lead to new technologies. The funding is provided normally for a period of three years. The proposals can be submitted by an individual or by a team of investigators throughout the year.

Individual centric competitive mode of funding is provided under the EMR. The Board supports potential scientists for undertaking research in frontier areas of S&T. There is no upper limit to the funding. The investigator may propose a realistic budget which is required to implement the proposal, taking into account the resources and infrastructure available at the institution. The grant is provided for manpower, equipment, consumables, national travel, contingencies and overheads. The call for proposals is solicited two times a year.

The scheme is aimed at supporting ideas that address a well-defined problem of industrial relevance. The proposal shall be jointly designed and implemented by the academic partner (which includes a partner from national laboratories/ recognized R&D institutions as the case may be) and industry. The participating industry should ensure that the objectives are industrially relevant. The funding is shared between SERB and Industry. The support from SERB is extended only to the academic partner and not to the industry. The industry share should not be less than 50% of the total budget. The funding can be provided for a maximum period of three years. The call for proposals is open throughout the year.
The IRHPA program supports proposals in high priority areas where multi-disciplinary/ multi-institutional expertise is required which will put our nation in international science map in that particular discipline. The Board identifies the priority areas in consultation with the stakeholders. The necessary facilities required for implementing the identified high priority areas are supported through this scheme. Call for proposals in identified areas is made every year.

The scheme is instituted to ensure enhanced participation of weaker sections of the society in research and development. The applicant should be an active researcher belonging to the Schedule Caste and Schedule Tribe category working in academic institutions/ national labs or any other recognized R&D institutions in the field of Science and Engineering. Also the applicant should have at least four years of service remaining before superannuation as on the date of submission of the proposal. The call for applications is made once a year.

This scheme allows a regular faculty member working in state Universities/ Colleges/ Academic Institutions in Private Sector to undertake research in a nearby well-endowed institution (in terms of research capability and infrastructure) for a specific duration not exceeding three years. Research fellowship of Rs. 5000 pm (in addition to the researcher’s own salary), contingency grant of Rs. 5 lakh per annum and overheads are provided as part of the support. The call is open throughout the year.
Awards & Fellowships

**Early Career Research Award**
The scheme aims to provide research support to the young researchers who are in their early career for pursuing exciting and innovative research in frontier areas of science and engineering. Applicants must hold a regular academic/research position in a recognized academic institution or national laboratories or any other recognized R&D institutions and must apply not later than the first two years of their regular service. The Early Career Research Award is a one-time award and carries a research grant of up to Rs. 50 Lakhs for a period of three years. The call for applications is notified through the website, normally three times a year.

**SERB Women Excellence Award**
SERB Women Excellence Award is a one-time award given to women scientists below 40 years of age and who have received recognition from any one or more of the following national academies such as Young Scientist Medal, Young Associate etc.
1. Indian National Science Academy, New Delhi
2. Indian Academy of Sciences, Bangalore
3. National Academy of Sciences, Allahabad
4. Indian National Academy of Engineering, New Delhi
5. National Academy of Medical Sciences, New Delhi
6. National Academy of Agricultural Sciences, New Delhi
These women researchers are supported with a research grant of Rs. 5 lakh per annum for a period of 3 years. The call for proposals is notified through the website.

**J C Bose Fellowship**
J C Bose Fellowship is instituted to recognize active scientists for their outstanding performance. The value of the fellowship is Rs. 25,000/- per month in addition to the fellow’s regular income. Rs. 15 lakh per annum is provided as research grant for a period of 5 years.

**Ramanujan Fellowship**
Ramanujan National Fellowships are offered to brilliant scientists returning from all over the world to take up scientific research positions in India. It is directed at scientists and engineers below the age of 60 years, who want to return to India from abroad. The Ramanujan Fellows can work in any of the scientific institutions and universities in the country. The duration of Ramanujan Fellowship is five years. The value of the fellowship is Rs.85,000/- per month. Each Fellow, in addition, receives a research grant of Rs. 7.00 lakh per annum.
The SERB-National Post-Doctoral Fellowship (N-PDF) is aimed to identify motivated young researchers and provide them support for doing research in frontier areas of science and engineering. The fellows are to work under a mentor, and this training is to provide them a platform to develop as an independent researcher. The applicant must have obtained Ph.D/M.D/M.S degree from a recognized University, not before two years from the date of application. The fellowship is purely a temporary assignment and is tenable initially for a period of 2 years. The upper age limit for the fellowship is 35 years at the time of the submission of application. Age relaxation of 5 years is given to candidates belonging to SC/ST/OBC/Physically Challenged & Women candidates. The call for applications for SERB-N PDF is notified twice a year through the website.

The SERB Distinguished Fellowship Scheme is meant for eminent and performing senior scientists to continue active research even beyond their superannuation. The Scheme offers a fellowship amount of Rs. 60,000/- per month and a research grant of Rs. 5 lakhs per annum for a period of 3 years, extendable by two more years.

National Post-Doctoral Fellowship

This program supports students registered for PhD in Indian institutions to train certain duration (normally 12 months) of research in reputed overseas institutions. To and fro air fare, fellowship amount of $2000 pm and contingency grant are provided. The program also has a provision for the faculty advisor of the student as well as overseas collaborator to visit each others labs. The call will be notified in the website.

Overseas Post-Doctoral Fellowship

The Overseas Postdoctoral Fellowship Program for Indian researchers is to introduce scientists and engineers in the early stages of their careers to international collaborative research opportunities, thereby furthering their research capacity and global perspective as well as forging long term relationships with scientists, technologists and engineers abroad. The scheme aims to build national capacity in frontier areas of science which are of interest to India by providing post doctoral fellowship for a period not exceeding 2 years. The applicant should have completed Ph.D. degree in science and engineering not earlier than the preceding 2 years from recognized institutions in India. For researchers who are in regular employment, the bar of 2 year period may be relaxed. The Program admits candidates in chosen areas in the identified overseas top ranking universities as notified by the Board from time to time. Fellowship amount of $3000 per month and a contingency/ preparatory allowance of Rs. 60,000/- are provided to each fellow.
# Partnership Programs - National

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<tr>
<th>Program</th>
<th>Details</th>
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<tr>
<td><strong>PM Doctoral Fellowship</strong></td>
<td>The Prime Minister’s Fellowship Scheme for Doctoral Research is a Public-Private Partnership (PPP) between Science &amp; Engineering Research Board (SERB) and Confederation of Indian Industry (CII). The scheme is for supporting aspiring Ph.D. scholars with double scholarship, 50% of which is provided by government (SERB) and balance 50% by a sponsoring industry for doing industrial research for a period of four years.</td>
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<td><strong>R &amp; D Scheme on Food Processing (MOFPI)</strong></td>
<td>The Scheme, developed in partnership with Ministry of Food Processing Industries (MOFPI), aims at extending financial assistance to individual scientists working in various institutions/ universities, Public funded organizations and recognized R&amp;D laboratories both in public and private sector, to promote and undertake demand driven R&amp;D work in the field of Food Processing Sector for product and process development, design and development of equipment, improved storage, shelf-life, packaging etc.</td>
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<td><strong>Cell Tower Radiation Program</strong></td>
<td>The program aims at studying the effects of cell tower radiations on the population living in the vicinity of the towers. This study is jointly supported by SERB and Department of Telecommunication, Ministry of Communication &amp; Information Technology. The call for proposals is notified regularly through the website.</td>
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<td><strong>IMPRINT (Impacting Research Innovation and Technology)</strong></td>
<td>IMPRINT (Impacting Research Innovation and Technology), is a program piloted by the Ministry of Human Resource Development (MHRD) which aims to address and provide solutions to the most relevant engineering challenges faced by our nation by translating knowledge into viable technology (product and processes) in selected technology domains. SERB is partnering in this program and funding mainly the proposals related to two domains, namely, “Nanotechnology” and “Advanced Materials”. The call for proposals is notified by the National Coordinator of the IMPRINT program.</td>
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<td><strong>Partnering with MHRD for Uchhatar Avishkar Yojana (UAY)</strong></td>
<td>The Uchhatar Avishkar Yojana (UAY) has been launched by the Ministry of Human Resource Development (MHRD) with a view to promote innovation of a higher order that directly impacts the need of the industries, thereby improving the competitive edge of Indian Manufacturing capabilities. The industry-sponsored, outcome-oriented research projects are funded. While MHRD funds 50% of the project cost, industry and other participating Ministries share the balance project cost (25% each). SERB is partnering with MHRD in funding UAY projects. The call for proposals is made by the National Coordinator of UAY.</td>
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Partnership Programs - International

S.N. Bose Scholars Program

S.N. Bose Scholars Program is a dynamic student exchange program developed in partnership with Indo-U.S. Science and Technology Forum (IUSSTF) and the University of Wisconsin-Madison. It provides an opportunity to Indian and U.S. students (enrolled in Bachelors and Masters programs in Atmospheric and Earth Sciences, Chemical Sciences, Engineering Sciences, Mathematical and Computational Sciences, and Physical Sciences) to undertake a research internship. The internship program is conducted for 50 Indian students to intern at partner Universities in the U.S. for a period of 10-12 weeks beginning each summer. The program also supports 30 U.S. students to intern at a recognized Indian educational institution for a similar duration. The SERB through IUSSTF will pay Stipend, Accommodation and Air-fare to the Indian Scholars; and Scholars from US will receive dollars equivalent amount of Rs.50,000/- as Stipend.

Overseas Doctoral Fellowship

The Board has entered into an agreement with several leading universities in the world for the Indian students to do doctoral programs abroad. The Board will provide fellowship amount of $2000 pm for a duration of 4 years, to and fro air fare and preparatory allowance. The students should apply directly to the concerned universities following their admission schedule. The selection is made by the overseas institution in consultation with the SERB. The overseas institutions where agreements have been signed are Cambridge University (UK), Stanford University (USA), Carnegie Mellon University (USA), University of Southern California (USA), University of California (Irvine, USA), Rice University (USA), The State University of New York, University at Buffalo (USA), University of British Columbia (Canada).

Newton - Bhabha International Fellowships

It is a joint initiative with The Royal Society of the United Kingdom to enhance capacity in the area of research and innovation. A MoU has been signed between The Royal Society and SERB to institute 15 Newton - Bhabha International Fellowships per year to the Indian research community, covering fields of Science, Technology, Engineering and Mathematics (STEM). Applicants must hold regular positions in institutions based in India or should have completed PhD degree in science, engineering and mathematics, not earlier than the preceding two years from recognized institutions in India. The awards are given up to two consecutive years in length spent in the UK, undertaking research at a host university or research institute. The awards provide a stipend, research expenses and one-off relocation expenses and provide up to an amount of £99,000 for two years. All applicants must identify a UK co-applicant who will host them whilst they are in the UK.

Partnership for International Research and Education (PIRE)

PIRE is a highly prestigious international collaborative program of National Science Foundation (NSF) aimed to leverage the monetary resources of funding agencies as well as intellectual capabilities of research groups all over the world in front line areas of research and education. India has joined the PIRE program through a bilateral agreement between SERB and NSF.
The Scheme encourages research collaboration within and between India and USA in this area within a framework (MOU) signed between Department of Science & Technology (DST), Government of India and the National Institute of Bio Medical Imaging & Bioengineering (NIBIB), National Institute of Health (NIH), USA. The objective of the collaboration is to develop durable, reliable and affordable blood pressure measurement technologies for either passive or active monitoring of hypertension. The innovations resulting from this collaboration are intended to focus on the clinical needs of underserved population of both USA and India, but are also expected to be more broadly applicable to the general population globally. By providing research funding to investigators in India and USA, this initiative seeks to synergize National Medical Device Research funding from SERB/ DST and NIBIB/ NIH through a focused bilateral research collaboration that will involve multi-disciplinary research teams in both countries.

**SERB-NSF Graduate Student Exchange Program**

The scheme is a coordinated effort between NSF and SERB to provide opportunities for enhanced professional development through research collaborations in top caliber research environments for U.S. Graduate Research Fellows (GRF) under the Graduate Research Opportunities Worldwide (GROW) program. U.S GRF is placed in select top research institutions in India for a period of 3 to 12 months. The Selection of the GRF is done by NSF with the concurrence of the Indian host.

**S & T Support**

**International Travel Support Scheme (ITS)**

ITS scheme is designed to provide financial assistance for presenting a research paper or chairing a session or delivering a keynote address in an international scientific event (conference/ seminar/ symposium/ workshop etc.). In addition, support is also provided to young scientists (age limit 35 years as on date of conference) for attending training programs and short-term schools/ workshops/ courses. Economy class air-fare by shortest route, airport-tax and visa fees are provided under the scheme. Registration Fee is also provided to young scientists in addition to the above support. Applications shall be submitted at least 60 days prior to the event.

**Assistance to Professional Bodies & Seminar/ Symposia**

The Program extends partial support for organizing seminar/ symposia/ training program/ workshops/ conferences at national as well as international level. The support is provided to Research Institutes/ Universities/ Medical and Engineering Colleges and other Academic Institutes/ Professional Bodies who organize such events for the scientific community to keep them abreast of the latest developments in their specific areas. It is generally given for encouraging participation of young scientists and research workers in such events and publication of proceedings/ abstracts for wider dissemination. The Program also supports S&T Professional bodies.
Science and Engineering Research Board (SERB) serves as the national premier funding agency for planning, promoting and steering internationally competitive research in science and engineering. The mandate is to promote basic research in frontier areas and provide financial assistance to persons engaged in such research, academic institutions, research and development laboratories, and other agencies. This is achieved through various schemes like extramural research funding fellowships, grants, awards, scholarships and joint industrial relevant collaborations.

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