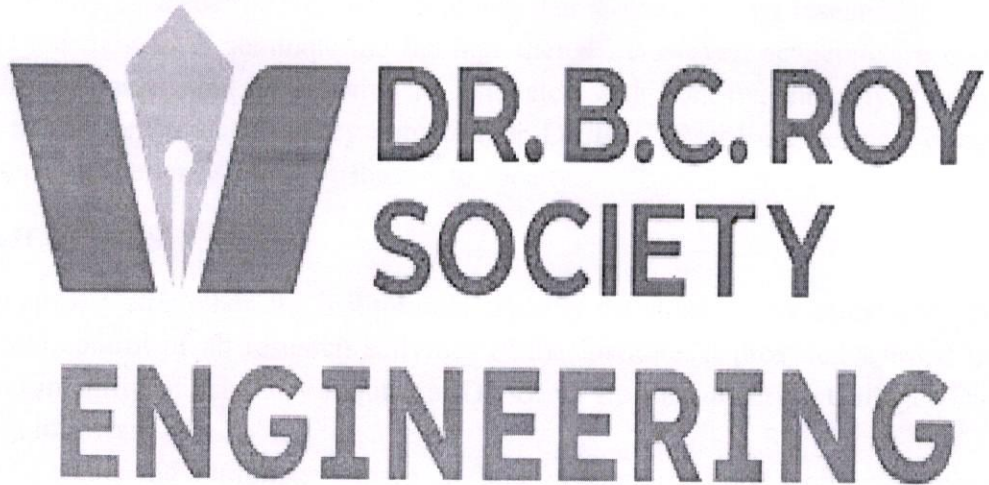


BCREC RESEARCH POLICY



Dr. B. C. ROY ENGINEERING COLLEGE

(An Autonomous Institute)

Approved by: All India Council for Technical Education (AICTE)

Affiliated to: Maulana Abul Kalam Azad University of Technology (MAKAUT), W. Bengal

Jemua Road, Durgapur, West Bengal, India, 713206

1. PREAMBLE

The reputation of any educational institution depends on scholarship, research productivity and Innovation. The success of an Institute in attaining its objectives is significantly contingent upon the alignment of the faculty with all the aspects of research initiatives being undertaken at the Institute. Dr. B. C. Roy Engineering College aspires to become research-centric. Thus, this policy is being promulgated to provide an overall framework for promoting the research ecosystem and a conducive environment for conducting research activities and enhancing research outputs. Research activities flourish in an environment of academic freedom, implying that the faculty and researchers shall have freedom of inquiry and the right to disseminate the findings thereof. However, academic freedom shall include the responsibility to ensure that all research is conducted with honesty, integrity, trust and accountability. Therefore, the present research policy aims to help Dr. B. C. Roy Engineering College and the faculties achieve research excellence and contribution to society.

2. OBJECTIVES

This policy aims to strengthen the institutional capacity for strategic, technical and operational planning, budgeting and control of all research activities of the Institute. It provides a broad framework to guide research and integrity of scholarly inquiry at Dr. B. C. Roy Engineering College. The objectives of the policy are as follows:

- i) To create and administer a research fund for supporting and facilitating research initiatives and projects of faculty members and students
- ii) To develop rules, procedures and guidelines for granting research support, instituting awards, and supporting all other related activities
- iii) To develop rules, procedures and guidelines for granting study leave, sabbatical leave, duty leave, reduction in workload, etc. for faculty members undertaking research activities
- iv) To provide a modality for properly coordinating all research activities of the Institute and aligning these to the vision and missions of the Institute and national development goals.
- v) To guide faculty members in the effective integration of the research works with the regular curriculum implementation and curriculum enrichment activities
- vi) To identify and inform researchers about the appropriate research opportunities announced by different academic, research, industry or government organisations
- vii) To promote interdisciplinary research and establish modalities for preparing and undertaking joint research works covering more than one knowledge domain as well as policies for involving external agencies/experts in such works
- viii) To define an enabling framework for researchers to obtain sponsorships for research projects and which makes the participating researchers responsible for the successful implementation of the project
- ix) To identify and establish linkages, including MOUs for long term relationships with national and international research organisations for widening the scope of research opportunities and funding options available to the teachers and students of the Institute.
- x) To identify and establish linkages, including MOUs for long term relationships with industry bodies and individual companies, to create opportunities for teachers and students of the Institute to involve themselves in real-life research projects and obtain sponsorships



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- xi) To encourage and facilitate the publication of the research work/projects in reputed academic journals
- xii) To encourage and facilitate the presentation/communication of the research work/projects as well as their findings and recommendations through academic events such as workshops/seminars/guest lecturers or the media
- xiii) To compile data on all the research work/projects undertaken by the teachers and students into a database for easy monitoring and analysis of the progress being made by them from year to year
- xiv) To provide a mechanism to ensure that academic staff attain the desired mix of teaching and research to achieve the level stated in the Institute's mission
- xv) To draw up and adopt a research code which informs all researchers about the ethical and legal norms and principles to be followed in the conduct of research
- xvi) To prepare and implement a research quality assurance mechanism for ensuring that all research activities of the Institute conform to standard quality specifications

3. PROMOTION OF RESEARCH

Dr. B. C. Roy Engineering College believes that researchers are free to choose the subject of their research, seek support from any funding source for their research work, and report their findings and conclusions. However, research techniques used by the researchers shall not violate established professional ethics about human beings' health, safety, privacy, and other personal rights or the infliction of injury or pain on animals. Dr. B. C. Roy Engineering College shall create a conducive environment for research. Due to limited resources, the Institute may not support fully all research likely to be undertaken, but it shall allocate the space, facilities, partial funding, and other resources for research programmes based on the scholarly and educational merits of the proposed research. It shall also provide development opportunities to researchers for writing research proposals and reports, publications, patent filing, etc. For a professional conduct of research and to bring about the research culture that will promote possibilities of success in acquiring external research funding, following additional practices shall be followed:

- (i) For formulating any project, man-days of the persons involved should be considered.
- (ii) Stipends / Fellowships to be paid to the Project Assistants / Project Fellows are to be considered.
- (iii) Institutional Overheads (power, water, space, security, lab usage, library usage, computer usage, etc.) are to be considered.
- (iv) Contingency amount should be kept under provision for –
 - a. Hiring Transport
 - b. Hiring of Consultants / Manpower
 - c. Other expenses
- (v) All research works may be undertaken in the project format indicating notional costs for every components, if it is not funded.
- (vi) Faculty members should visit industry/hospital/place of practice to understand problems and formulate projects of different levels. It may be executed as UG / PG project works, if feasible, with the existing infrastructure of the College. For encouraging results, consultancy services may be offered to the concerned industry/hospital/place of practice.



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4. COLLABORATIVE RESEARCH PROJECTS

The Institute-Industry-Government Interaction is the demand of the day. To contribute effectively to society, the Institute must work closely with Government agencies, Industries and other organisations. Different sectors like Academic, Industries or Public face diverse challenges that can be addressed through collaborative research. For that, the Dr. B. C. Roy Engineering College encourages all forms of sponsored and joint research projects as detailed below:

4.1 Government Sponsored Research Projects: Government and public funding agencies such as AICTE, Department of Science and Technology (DST), Department of Biotechnology (DBT), Defence Research and Development Organization (DRDO), Indian Space Research Organization (ISRO), Indian Council of Social Science Research (ICSSR), Council of Scientific and Industrial Research (CSIR), Department of Atomic Energy (DAE), Ministry of New and Renewable Energy (MNRE), Ministry of Electronics and Information Technology (MeitY), Anusandhan National Research Foundation (ANRF), Indian Council of Medical Research (ICMR) and other national or state-level bodies regularly announce schemes for research funding. Faculty members are encouraged to identify suitable schemes, prepare competitive project proposals, and apply through proper channels. The following guidelines shall apply:

- a) The Principal Investigator (PI) must route all proposals through the R&D Cell for review, approval, and administrative support before submission.
- b) The funds received from such projects shall be operated through the institutional accounts, and necessary audits shall be carried out as per funding agency norms.
- c) The overhead charges received from the funding agency shall be credited to the Institute's R&D Fund and utilized for strengthening research infrastructure.
- d) The Principal Investigator (PI) and Co-Investigator(s) shall be entitled to recognition and incentives as per the Research Incentive Scheme (Annexure-I).
- e) In the case of multi-institutional collaborative projects, a formal MoU or agreement must be signed specifying responsibilities, deliverables, and fund utilization norms.
- f) The intellectual property rights (IPR) arising out of such projects shall be jointly shared between the Investigator(s), the Institute, and the funding agency, as per the funding guidelines.

4.2 Industry-Sponsored Research Project: An Industry can sponsor a project, and the concerned experts of Dr. B. C. Roy Engineering College can conduct research on this project for which the financial support will come from the industry. As a result, if any patent is registered and monetized, there shall be a sharing of income from the patent among the industry, researcher and Institute. This will lead to three kinds of benefits:

- a) the researcher will get exposure to the concerned area of research;
 - b) the industry will get solutions to its problem; and,
 - c) the researcher, Institute and Industry can earn money, and in the end, the society ultimately will be benefitted.
- I. The revenue sharing (if any) from Industry – sponsored projects between the College / Society and the Faculty undertaking such sponsored research is to be 30 : 70 (College : Faculty).
 - II. For Consultancy, the revenue sharing between the college and faculty has to be decided on a case to case basis, on receiving the details from the faculty in a prescribed format (to be submitted to the R&D cell). The College: Faculty revenue sharing will be as under –



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- (i) 30:70 ratio : If the incumbent uses only her/his intellectual ability
(ii) 60:40 to 50:50: Depending on the extent of usages of the Institutional facilities as decided by R&D cell on a case to case basis.

If students / external experts are involved in the consultancy work, their stipends/fees are to be paid from the Incumbents share.

4.3 Interdisciplinary/multidisciplinary Research: Interdisciplinary/multidisciplinary research is a must nowadays. No department, institution, researcher or scholar can address a research problem in which more than one discipline is not involved. Unless they get together and conduct interdisciplinary research, no fruitful findings can arrive. Therefore, Dr. B. C. Roy Engineering College has decided to encourage interdisciplinary research activities for which the following steps will be taken:

- a) Identify the interdisciplinary/multidisciplinary area.
- b) Identify the different experts from concerned disciplines who can work together.
- c) Study the requirement of the infrastructure to conduct the concerned interdisciplinary / multidisciplinary research.
- d) Explore possibilities to find resources for such interdisciplinary research.
- e) Promote the culture of citing the relevant research papers of other fellow faculties of the institute.

5. COLLABORATIVE INTERNATIONAL RESEARCH

We live in a global village. Knowledge is being produced in different parts of the world. Collaborative international research is essential to facilitate mutual learning and expertise sharing. Therefore, the Dr. B. C. Roy Engineering College plans to have the MoUs with prominent research institutions abroad to conduct research jointly in common interest areas. For this purpose, a Task Force shall be constituted that will constantly explore the possibilities of having such collaborative or joint research in terms of thrust areas, decide the modus operandi of conducting such research and attend to other relevant aspects. The Task Force shall comprise Faculty from BCREC, Industries, and other Research Institutes for effective cohesion.

6. TRAINING FOR RESEARCH AND PUBLICATIONS

Generally, faculties are eager to conduct research, but because of the lack of expertise in writing a research proposal or having insufficient research skills, they are unable to channelise their efforts effectively. Hence, a funding agency rejects a research proposal in many cases. Even for publication of papers because of the lack of knowledge about how to write a paper and under which format it should be submitted, sometimes the papers are not accepted. Therefore, Dr. B. C. Roy Engineering College shall organize rigorous training programmes for researchers in the identified areas.

7. PUBLICATION OF PAPERS AND JOURNALS

Publication of papers is critical for the effectiveness of a Higher Education Institute. Faculty must publish continuously in quality journals. Therefore, Dr. B. C. Roy Engineering College plans to encourage the publication of papers by the faculties with a targeted aim. A faculty member shall be expected to publish a certain number of research papers in refereed journals at national and international levels every year. Furthermore, we shall endeavour to include serious and research-minded students of the College as part of



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the Research team. In order to improve the score in Research & professional Practice parameter in NIRF, the faculties are encouraged to adopt a policy of collaborative research among the faculty and increase in intra-college citation in publications need to be encouraged. All papers published by the Faculty, students and Researchers of BCREC should acknowledge the financial and/or infrastructural support from the College / Society and Funding agencies.

8. PATENT and IPR

The Institute would like to strengthen the research, leading to the filing of patents. Furthermore, if any innovation is done, the Institute shall encourage the researchers and scholars to patent it.

The incentive will be awarded to the researchers/scholars who could successfully patent their product. If the patent is commercialized, the sharing of earnings is to be done between the researcher and the Institute as per the guideline to be developed from time to time. The Institute shall create awareness about intellectual property rights among faculty, researchers and scholars from time to time.

In order to encourage Faculty and Researchers apply for Indian/International Patents (preferably Full / Utility Patents and may be Design Patents in some exceptional cases), financial support to apply for / reimburse the expense incurred for and/or continuation of the patent(s) will be done by the Society provided the Assignee of the Patent is the College (BCREC) / Society. However, if the faculty wants to avail the Patent related incentive / financial support from the college, prior to actual Patent application, the patentability need to be ascertained by submitting the patent application document to the R&D Cell, which will be deliberated upon by the R&D Cell, with internal / external experts as per the need.

9. ENROLLMENT OF PhD CANDIDATES:

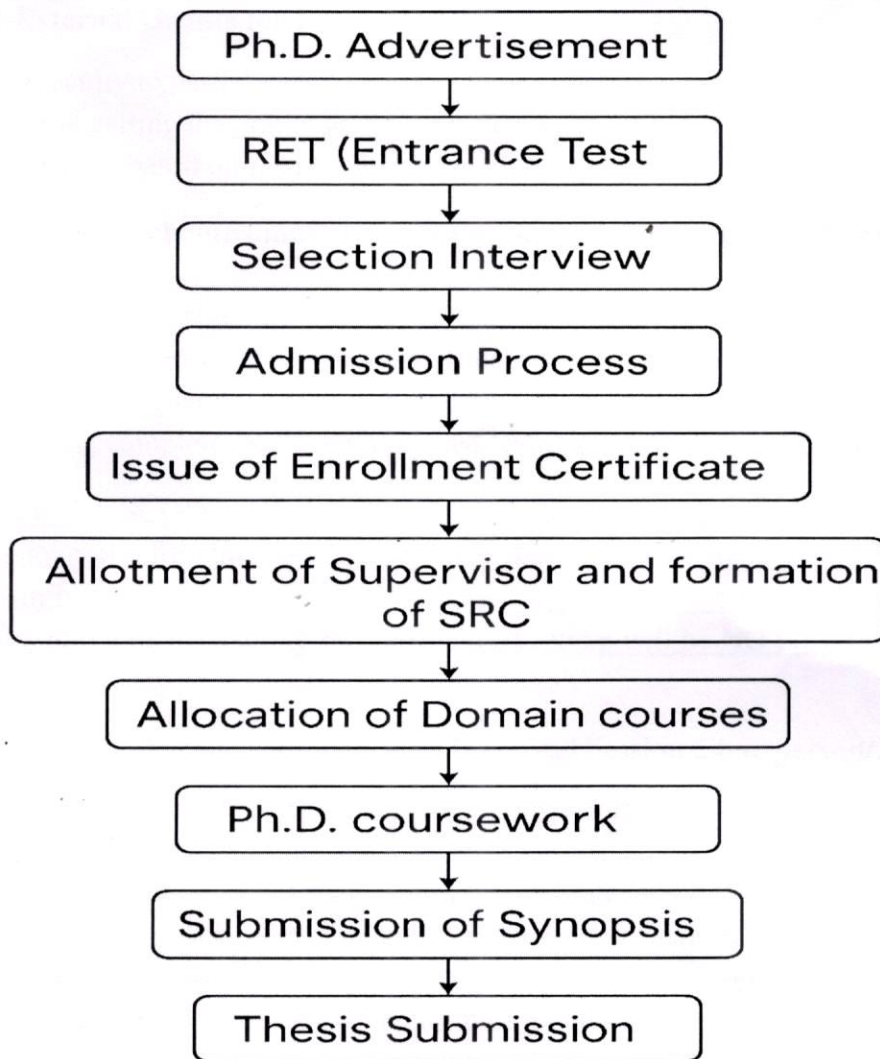
Faculty are encouraged to enroll internal (BCREC) and especially External (Non-BCREC) candidates for PhD registration under their sole or joint Supervision. Suitable award to the Faculty on completion of their PhD of the candidate shall be given. In order to develop a conducive environment for conducting PhD research, the following framework will exist:

- a) Application / Proposal must be submitted to the Principal through a joint letter of the Student and the Supervisor(s).
- b) The Principal shall clear all such applications / proposals within next 15 days.
- c) All PhD students, in presence of their supervising faculty, shall be allowed to continue their research beyond College hours and on regular / national holidays (after obtaining due permission from the Principal in writing), as and when needed
- d) They must take appropriate and expected care and responsibility of the facilities used by them.
- e) If the PhD student is working under some externally funded project grant, the Overhead cost of the project due to the college should be deposited to the finance department in case the same does not credit directly to the college account from the project granting agency.
- f) The College shall make available common facilities such as regular glass apparatus / chemicals / instruments / equipment to the PhD student for carrying out his research. For this purpose, a written application from the PhD student with due remarks from the Supervisor(s) should be made to the Principal through the R&D Cell of the college for ratification / approval.



- g) All chemicals / glass apparatus / instruments / Equipment that are not of regular nature must be procured by the PhD student from his own funds / through project fund, if any, awarded to him. If needed the R&D Cell may be consulted regarding the matter.
- h) A separate account of all such expenses, stock book and utilization records of all apparatus / chemicals should be maintained during the tenure of the PhD student at BCREC and should be submitted to the Principal for obtaining NOC at the end of the tenure.

Ph.D. Process Flow



10. INCENTIVES FOR OUTSTANDING RESEARCH

The Institute would like to encourage quality research in different thrust areas. For this purpose, outstanding research contributions done by faculties, students, and research scholars shall be recognised. Therefore, Dr. B. C. Roy Engineering College shall prepare a scheme for providing incentive researchers and scholars. (Annexure-I)

The incentives are identified as under:



- a) Incentives in terms of money
- b) Incentive in terms of awards/prizes
- c) Incentive in terms of more funding for the ongoing research
- d) Incentive in terms of a certificate or giving more weightage to the career advancement scheme, etc.

The following incentives are being proposed to retain and motivate the faculties to contribute towards achieving the Institute's research goals.

10.1 Incentives for External Grants for Research

To encourage the faculty to participate in applying for research grants from outside agencies actively, a faculty succeeding in getting the grants shall be entitled to incentives. PI of sanctioned Project shall get an appropriate incentive based on the size of the sanctioned project.

10.2 Incentives** for Research outcomes: Journal Publications/Books/Book Chapters

Faculties are entitled to Incentives for

- a) publishing research papers in peer-reviewed* journals.
- b) contributing Book Chapter in Books published by reputed National/ International Publishing House
- c) publishing/editing complete Books with reputed National/International Publishers

* Publication in SCOPUS (<https://www.scopus.com/sources>), or Web of Science (WoS) (<https://wos-journal.info/>) Indexed Journals with high Impact Factor/ Cite Score is encouraged. Faculties with high Citations (h-index, i10-index) may be duly recognized. However, **Publication in predatory journals is strongly discouraged** and there will be NO provision for incentives for this sort of publications.

10.3 Incentives** for Conference** Publications/Technical Session Chairperson/Invited Speaker

To ensure dissemination of research activities in the proper forum, to create networking opportunities for collaborations, to be abreast with the latest developments in cutting edge technologies and domains, faculties will be supported in concurrence with appropriate authority to participate Conferences, Seminars, Workshops, Faculty Development Programme organised by reputed National and International Scientific/ Academic/ Research/ Professional Bodies. Depending on the nature of the forum, faculties are entitled to incentives in the form of money and special leave.

Publication in those conferences and Proceedings will only be considered for incentives/ reimbursement that are **indexed in recognized international bibliometric databases** like:

- a) **SCOPUS- indexed** (<https://www.scopus.com/sources>) or **Web of Science (WoS) indexed** (<https://wos-journal.info/>) conference papers.
- b) Proceedings published by **IEEE, ACM, Springer, Elsevier, Taylor & Francis, SAGE, Wiley** or other publishers whose proceedings appear in **SCOPUS or WoS**.
- c) Publications in **non-indexed or predatory** conferences shall not be eligible for any institutional support.



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** For any incentives to be considered, the author affiliation to the college should appear exactly as “**Dr. B. C. ROY ENGINEERING COLLEGE**” for uniformity in all indexing services

11. RESEARCH MISCONDUCT

Dr. B C Roy Engineering College believes that the occurrence of misconduct threatens the basic principles of research. Therefore, the Institute defines research misconduct as any fabrication, falsification or plagiarism in proposing, performing or reviewing research or reporting research results.

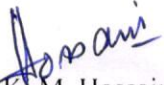
Research misconduct does not include an honest error or differences of opinion, authorship disputes that do not involve plagiarism, and violations of other Institute policies (e.g., sexual harassment policy).

Misconduct in research damages the profession's integrity and undermines scholars' credibility. Accordingly, the Institute shall take all misconduct allegations seriously and ensure that the procedures for the inquiry, investigation and adjudication of any misconduct are well defined and just for all parties involved.


Review of the Policy

The policy will be reviewed after three years.


Proposed by


(Dr. K. M. Hossain)
Vice Principal

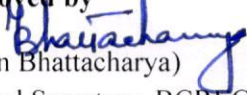
Reviewed by


(Dr. Gouri Shankar Panda)
Registrar

Recommended by


(Dr. Sanjay S. Pawar)
Principal

Approved by


(Tarun Bhattacharya)
General Secretary, BCREC



Annexure-I
REVISED
RESEARCH INCENTIVE SCHEME

OBJECTIVE OF THE SCHEME

The prime intention of the proposed incentive scheme is to encourage the faculty members of our Institution to undertake quality research, consultancy and other research related activities.

SCOPE OF THE SCHEME

This scheme covers all faculty members of all Departments of Dr. B C Roy Engineering College.

The scope of the scheme envisages, in particular:

- To motivate our faculty members to focus on research-related activities, in addition to the teaching, to publish research articles in reputed refereed international and national journals with impact factors.
- To pursue efforts to write books, monographs, and book chapters for publication by International and National publishers of repute.
- To encourage participation in Conferences/Symposiums sponsored by IEEE, Springer, Elsevier, Taylor & Francis, Sage, Emerald, Routledge etc.
- To encourage creativity in the minds of faculty members so that they make original contributions by way of products, concepts, innovations etc. and obtain patents from International and National agencies.
- To promote the culture of interdisciplinary research works and publications.
- To evince interest among faculty members so that they make efforts to establish collaborative research projects with their counterparts in reputed foreign Universities.
- To encourage our faculty members to submit proposals and secure funded research projects from various funding agencies in India and Abroad.
- To encourage faculty with PhD to enroll scholars under their supervision for Doctoral research.
- To encourage faculties to involve UG/PG students in their research/ patent works.

INCENTIVES (all are in Rs.):

1. For Journal Publications:

Faculty/ Authors	Student participation	Type of Journal	Impact Factor	Cite Score	Incentives
From Interdisciplinary departments of BCREC	With Students	<u>Web of Science</u> (WoS) or SCOPUS, <u>Indexed</u>	0.1 to 1.00	0.14 to 1.40	3500/-
			1.01-2.00	1.41 to 2.8	4000/-
			2.01-3.00	2.81 to 4.2	4500/-
			3.01-4.00	4.21 to 5.6	5000/-
			4.01-5.00	5.61 to 7.0	5500/-
		5.01 & above	7.01 & above	8000/-	
	Without Students	<u>Web of Science</u> (WoS) or SCOPUS, <u>Indexed</u>	0.1 to 1.00	0.14 to 1.40	3000/-
			1.01-2.00	1.41 to 2.8	3500/-
			2.01-3.00	2.81 to 4.2	4000/-
			3.01-4.00	4.21 to 5.6	4500/-
4.01-5.00			5.61 to 7.0	5000/-	



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From Same departments of BCREC	With Students	<u>Web of Science (WoS) or SCOPUS, Indexed</u>	5.01 & above	7.01 & above	7000/-
			0.1 to 1.00	0.14 to 1.40	2500/-
			1.01-2.00	1.41 to 2.8	3000/-
			2.01-3.00	2.81 to 4.2	3500/-
			3.01-4.00	4.21 to 5.6	4000/-
			4.01-5.00	5.61 to 7.0	4500/-
	Without Students	<u>Web of Science (WoS) or SCOPUS, Indexed</u>	5.01 & above	7.01 & above	6000/-
			0.1 to 1.00	0.14 to 1.40	2000/-
			1.01-2.00	1.41 to 2.8	2500/-
			2.01-3.00	2.81 to 4.2	3000/-
			3.01-4.00	4.21 to 5.6	3500/-
			4.01-5.00	5.61 to 7.0	4000/-
		5.01 & above	7.01 & above	5000/-	

2. For Participation & Publications in Conferences (SCOPUS Indexed Only):

Frequency	Special Leave	Reimbursement
Maximum two/annum	1 day for Conf. within State	50% of the Registration Fees or 5000/- whichever is minimum
	3 days for Conf. outside State	
	7 days for Conf. outside India	50% of the Registration Fees or 10000/- whichever is minimum

3. For publication of Books/ Book Chapter/ Monograph

Complete Books (Author/Editor)	3000/-
Monograph	2000/-
Book Chapter	1000/-

4. For Patent

Patent stage	Utility Patent	Design Patent
Publication in gazette	5000/-	1000/-
Grant/Award of Patent	10000/-	2000/-
Commercialization/ Licensing	70 : 30 (Faculty : Institute) revenue sharing	70 : 30 (Designer : Institute)

Special Notes:

- Both Utility and Design patents must list "Dr. B. C. Roy Engineering College" as the assignee/applicant.
- Patents filed without institutional affiliation may be acknowledged academically but will not be eligible for financial incentive.
- All patents developed with institutional resources shall remain jointly owned by the **Inventor(s)** and the **Institute**.

5. For Funded Project



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Funding Agency/ Institute/ Industry	Incentives
Government Sponsored	One Time Grant on case to case basis
Industry Sponsored	As per Sec 4.2.I
Consultancy	As per Sec 4.2.II

6. For PhD Supervision (On Award of the PhD)

Scholar	Honorarium
BCREC Scholar	5,000/-
External Non-BCREC	10,000/-

If more than one faculty member is involved in a single paper publication or patent or PhD supervision, the amount will be shared amongst them. If any faculty from another university or college is involved, they need not be considered.

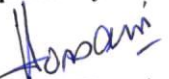
7. Monetary Award for faculties with the maximum publications in journal per year

No. of publications(N) in WoS/Scopus indexed journals (With IF only)	Award Money
10	30,000/-
9	25,000/-
8	20,000/-
7	15,000/-
6	10,000/-

The actual number of publications (N) will be calculated as $N = \sum_{i=1}^p 1/a_i$, where p is the total number of papers, a_i is the total number of authors in the i^{th} paper.

To encourage all faculty members to leverage these financial resources and actively pursue high-impact publications, secure patents, and drive collaborative innovations, the institute has allocated a dedicated R&D budget of ₹4.00 Lakhs for the current financial year.


Proposed by


Dr. K. M. Hossain
Vice Principal

Reviewed by

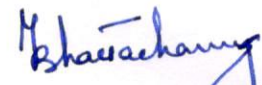

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Principal



Approved by


General Secretary, BCREC