

Department of Biochemical Engineering and Biotechnology

17 Nov 2022

The second meeting of the Departmental Research Committee for the academic session 2022-2023 was held on Friday, Nov 11, 2022 at 12 pm in the Committee Room of the Department.

The following members were present:

Prof. Prashant Mishra (Chairperson)
Prof. Shilpi Sharma
Prof. Preeti Srivastava
Prof. Shaikh Z. Ahammad
Prof. Ravikrishnan Elangovan
Prof. Kumari Priti Sinha
Prof. Lucinda Elizabeth Doyle (Convenor)

Agenda Items

1. Confirmation of the minutes of the 2nd meeting of the DRC for the session 2022-23 held on 7 Oct 2022.

The minutes were confirmed as circulated.

2. Matters arising from the minutes of Meeting No. 1/2022-23.

Item no. 10: Due to the SIRE PhD admissions occurring on Dec 1st, it was decided to hold the department PhD admissions process on Dec 2nd 2022.

3. Approval of synopsis of MSR and PhD students.

a. The Committee discussed and based on the recommendation of SRC, approved the synopsis of the PhD thesis entitled "Mechanistic Insights into Bioactivity and Permeability of Natural Compounds for Selective Targeting of Cancer" submitted by Navaneethan Radhakrishnan (2017BEZ8438). The Committee also approved the panel of Examiners and authorised the Chairperson to forward the same to Dean (Academics).

b. The Committee discussed and based on the recommendation of SRC, approved the synopsis of the PhD thesis entitled "Molecular characterization of a biosurfactant from *Franconibacter* sp. and its application in oil recovery" submitted by Jyoti Sharma (2015BEZ8503). The Committee also approved the panel of Examiners and authorised the Chairperson to forward the same to Dean (Academics).

c. The Committee discussed and based on the recommendation of SRC, approved the synopsis of the PhD thesis entitled “Metabolic engineering of *Zymomonas mobilis* for lactic acid production and xylose utilization” submitted by Arun Thapa (2015BEZ8357). The Committee approved the panel of Examiners and authorised the Chairperson to forward the same to Dean (Academics).

4. Constitution of new SRCs.

Name/Entry No	Chairperson	External expert	Internal expert	Supervisor
Ria Rani 2022BEZ8360	Prof. Ritu Kulshreshtha	Prof. Jayanta Bhattacharyya (CBME)	Prof. Lucinda Doyle	Prof. Prashant Mishra
Ajanth Praveen M 2022BEZ8354	Prof. Ravikrishnan Elangovan	Prof. Dhiman Mallick (EE)	Prof. Lucinda Doyle	Prof. Prashant Mishra & Samaresh Das (CARE)
Chudamani Chandrakanta 2022BEZ8353	Prof. Shilpi Sharma	Prof. Tanmay Dutta (Chemistry)	Prof. D. Sundar	Prof. Preeti Srivastava

The Committee approved the constitution of the SRCs detailed above.

5. Change/addition to existing SRCs.

The Committee approved the following changes to existing SRCs:

Addition of Dr. Boris Mizaikoff, Professor and Chair, Institute of Analytical and Bioanalytical Chemistry, University of Ulm, Germany to SRC of Ms. Soumya Rajpal, (2017BEZ8291).

Replacement of Prof. Madhuresh Sumit with Prof. Shaunak Sen (EE) in SRC of Anshuman Yadav (2021BEY7565).

6. Modality and shortlisting criteria for PhD entrance exam.

Modality: The Committee decided that, following the Institute directives, all stages of the PhD entrance exam and interviews will be held online. The process will be conducted by DRC and faculty members intending to take on new PhD students. The question paper will be prepared by Prof. Kumari Priti Sinha, Prof. Preeti Srivastava and Prof. Shaikh Z. Ahammad.

Shortlisting criteria: The Committee approved the shortlisting criteria as per Annexure 1 and authorised the Chairperson to forward the same to Dean (Academics) for approval.

7. PhD topics for floating.

S. No.	Project Name	Supervisor
1.	Theoretical study on effect of high surface charge density on vesicle morphology	Prof. Kumari Priti Sinha
2.	Biomimetic supramolecular receptors (artificial antibodies) with tailor made cavities for antimicrobial stewardship	Prof. Prashant Mishra
3.	Development of multiplex PCR cartridge system for blood stream infections	Prof. Ravikrishnan Elangovan
4.	Decoding the biophysical principles of dynamic cell-cell adhesions	Prof. Amit Das
5.	Mitigation of abiotic stresses in plants by using microbiome based approach	Prof. Shilpi Sharma
6.	Identification of the novel biomarkers and therapeutic targets in glioblastoma	Prof. Ritu Kulshreshtha
7.	Comprehensive analyses of cancer cell transcriptome to identify the key genes and pathways for therapeutic targeting	Prof. Ritu Kulshreshtha
8.	Microbe mediated plastic depolymerization and production of value added products	Prof. Preeti Srivastava
9.	Theoretical study of the growth logic of bacteria	Prof. Anjan Roy

The above new PhD projects were discussed and subsequently approved by the Committee.

8. Matters for ratification

DRC approval of Shabnam Parwin (2018BEZ8441), working under supervision of Prof. Preeti Srivastava, to avail of RSTA award for attendance of ASM Microbe 2022 in USA (9-13 June 2022).

This was previously recommended by the last DRC Chairperson (Prof. Ritu Kulshreshtha) on 7 April 2022 with a remark that it will be ratified in a subsequent DRC. The matter was ratified.

DRC approval Garima Yadav (2018BEZ8241), working under the supervision of Prof. Ritu Kulshreshtha, to visit NTU Singapore for 5 months (January to June 2023).

The Committee approved the request.

Project proposals submitted by faculty members.

S. No.	Project Name	Investigator	Funding Agency
1.	An integrative analysis to understand microbiome's role in the pathophysiology of glaucoma	Prof. Ishaan Gupta	Indo-US (DBT-NIH) Vision Research Program

The above project was circulated to members. As no comments were received, the projects were forwarded to concerned authorities, and the item was ratified.

10. Any other matters, with permission of the Chair.

A request received from Mr. Sharad JS (2019BEY7512) for 3 months extension of his thesis submission was discussed. In view of a plan submitted by him, the Committee has recommended in principle to allow him for extension and requested SRC to continuously monitor his progress of work. The Committee also authorised the Chairperson to forward his request to Dean (Academics) for approval.

Comprehensive exam results: The following PhD students were deemed to have passed the Comprehensive exam conducted on 31st October 2022:

Jaykumar Kritikumar Patel (2021BEZ8007)
Soumya Sahai Saxena (2021BEZ8009)

Sounak Dasgupta (2021BEZ8010)
Ritanksha Joshi (2021BEZ8444)
Shilpi Kumari (2021BEZ8445)
Surbhi 2021(BEZ8446)

The meeting ended with a vote of thanks to the Chair.

A handwritten signature in black ink, appearing to read 'Le D', positioned above the printed name and title.

Lucinda E. Doyle
DRC Convenor

Short-listing criteria for Admission to Ph.D. Program (Sem II, 2022-23)

The candidates must have first class (60% or 6.0/10 CGPA) in all examinations starting from 10+2 up to the qualifying exam and they must meet the following criteria based on their qualifying exam degree:

Table: 1 Minimum Qualification for Admission to full-time Ph.D. Programmes

Qualifying exam	Acceptable majors	General Category	General Category (EWS)	OBC (Non-creamy layer)	SC/ST & PD
B. Tech/B.E	Biochemical Engineering, Chemical Engineering, Biotechnology, Industrial Biotechnology, Bioinformatics, Environmental Engineering, Pharmaceutical Biotechnology	(i) B.Tech 75% or 7.5/10 CGPA (ii) Valid JRF or GATE score of min. 650 in Life Sciences or Biotechnology or Chemical Engg.	(i) B.Tech 75% or 7.5/10 CGPA (ii) Valid JRF or GATE score of min. 650 in Life Sciences or Biotechnology or Chemical Engg.	(i) B.Tech 75% or 7.5/10 CGPA (ii) Valid JRF or GATE score of min. 600 in Life Sciences or Biotechnology or Chemical Engg.	(i) B.Tech 70% or 7.0/10 CGPA (ii) Valid JRF or GATE score of min. 550 in Life Sciences or Biotechnology or Chemical Engg.
M. Tech / M.E / MS(R) or equivalent	Biochemical Engineering, Biological Engineering, Bioprocess Engineering, Bioscience and Bioengineering, Chemical Engineering, Chemical Technology, Biotechnology, Industrial Biotechnology, Bioinformatics, Environmental Engineering, Pharmaceutical Biotechnology,	(i) M.Tech 85% or 8.5/10 CGPA	(i) M.Tech 85% or 8.5/10 CGPA	(i) M.Tech 85% or 8.5/10 CGPA	(i) M.Tech 80% or 8.0/10 CGPA
M.Sc	MSc in Biotechnology, Environmental science, chemistry, and all branch of life science	(i) M.Sc. 70% or 7.0/10 CGPA	(i) M.Sc. 70% or 7.0/10 CGPA	(i) M.Sc. 70% or 7.0/10 CGPA	(i) M.Sc. 65% or CGPA 6.5/10

		(ii) Valid JRF or GATE score of min. 650 in Life Sciences or Biotechnology or Chemical Engg	(ii) Valid JRF or GATE score of min. 650 in Life Sciences or Biotechnology or Chemical Engg	(ii) Valid JRF or GATE score of min. 600 in Life Sciences or Biotechnology or Chemical Engg	(ii) Valid JRF or GATE score of min. 550 in Life Sciences or Biotechnology or Chemical Engg.
--	--	---	---	---	--

For students from Centrally Funded Technical Institutions (CFTI)

The requirement of qualification in the GATE / National Exam is waived for the following categories of applicants from CFTIs:

- 1) Currently registered students in Centrally Funded Technical Institutes (CFTIs) pursuing B.Tech./B.E./ Integrated M. Tech/ Integrated M. Sc. programmes, who have completed 6 semesters or more, and have CGPA of 8.000 or above (on a 10 point scale). Such students must obtain a CGPA of 8.000 or above at the time of graduation, and before they formally register for the Ph.D. programme (80% aggregate marks, if marks is the primary mode of evaluation);
- 2) B.Tech./B.E./ Integrated M. Tech/ Integrated M. Sc. programmes of CFTIs (in the programmes marked under (1) with a final graduation CGPA of more than 8.000 (80% aggregate marks, if marks is the primary mode of evaluation);
- 3) M.Sc. graduates/Mtech graduates from IITs with CGPA 8.000 or above.

Minimum Qualifications for admission to Part-time and Sponsored (full-time) Ph.D. Programmes:

The following eligibility conditions apply for the Part-time and sponsored full-time programmes:

1. Only employees of Public Sector Undertakings or Government Departments or Research and Development Organizations or Private Industries (approved by Faculty Boards) are eligible for admission to these programmes.
2. The minimum full-time experience required *after* obtaining the qualifying degree and as on date of registration, is given below in Table 2:

Table 2: Experience required for admission to part-time Ph.D./ M.Tech./ M.S.(R) Programmes For admission to part-time programme	Qualifications	Work Experience (Post Qualification)
Ph.D.	M.E./M.Tech./M.S.(R)/M.D.or Equivalent	Nil

Ph.D.	B.E./B.Tech./M.Sc./M.A./M.B.A./MBBS or equivalent, from CFTIs/Central Universities	1 Year
Ph.D.	B.E./B.Tech./M.Sc./M.A./M.B.A./MBBS or equivalent, and working in IIT Delhi* (Project or Regular) *Through proper channel	1 Year
Ph.D.	B.E./B.Tech./M.Sc./M.A./MBA/MBBS or equivalent, from institutions other than CFTIs/Central Universities	2 Years

3. Minimum qualification for these candidates is the same as for full-time candidates (**Table 1**), except that the requirement of qualifying in a national examination is waived.

4. For part-time candidates from outside NCR (or at a radial distance of more than 50 km from IIT Delhi), there is a minimum residency requirement of 6 months. The Department may specify a higher residency requirement based on the courses recommended as well as the background.