

Department of Biochemical Engineering and Biotechnology

Minutes of DRC meeting

(DRC-7/2020-2021)

Dated: 20th May 2021

The seventh meeting of the Departmental Research Committee (DRC) for the academic session 2020-2021 was held on 19th May 2021 at 3 pm by video conferencing.

The following members were present:

Prof. Shilpi Sharma (Chairperson)

Prof. D. Sundar

Prof. T. R. Sreekrishnan

Prof. Atul Narang

Prof. Ritu Kulshreshtha

Prof. Preeti Srivastava

Prof. Rohan Jain

Prof. Ishaan Gupta (Convenor)

Prof. K. J. Mukherjee (*Invited member*)

Prof M. Sumit (*Invited member*)

1. To confirm the minutes of the 6th meeting of the DRC for the session 2020-2021 held on 5th April 2021.

The minutes were confirmed as circulated.

2. To report the matters arising from minutes of Meeting No. 06/2020-2021

None.

5. Ph.D. and MSR selection, Entry Sem 1, 2021-22

Ph.D Programme

The shortlisting criteria for the selection was finalised (Annexure 1). The Ph.D. Coordinator presented the details of applications received from P.G. section, and details of candidates shortlisted for 1st round (online exam) as per the eligibility criteria finalised by DRC (Annexure 2).

In view of the revised academic calendar the schedule for the Ph.D. selection process was decided as follows:

- Announcement of list of shortlisted candidates: **by 22nd May 2021**
- Online exam (1st round) (to be coordinated by RJ and IG): **27th May 2021**
- Special DRC meeting for shortlisting for 2nd round: **28th May 2021, 3 pm**
- Online Interviews of shortlisted candidates (whole day): **3rd - 4th June 2021**

- Special DRC meeting

7th June 2021, 11 am

M.S.(Res)

The shortlisting criteria for the selection was finalised (Annexure 3). The MSR Coordinator presented the details of applications received from P.G. section.

International PhD Programme

Interview of international applications for the programme was scheduled for 28th May 2021 at 3 pm.

4. New Ph.D. and MSR projects by faculty member

Prof Madhuresh Sumit briefed the committee about the following two new proposals which were circulated to the members earlier:

(a) Understanding the effect of metabolism on pathways that influence critical quality attributes in mammalian fedbatch processes through mathematical modeling (for MSR)

(b) Novel supplementation strategies in mammalian fedbatch processes using mathematical modeling and at line metabolite monitoring (for Ph.D.)

The proposals were approved for floating for the students of Entry Sem I, 2021-2022:

5. Plan of work for M. Apurva (2019BEY7510) for her thesis entitled “Catabolite repression in *Saccharomyces cerevisiae*”

The plan of work for Ms M. Apurva was approved based on recommendations by her SRC.

6. Request from doctoral student Priyanka (2016BEZ8005) for extension of fellowship through Institute funds

Ms Priyanka (2016BEZ8005) had to withdraw from two semesters (2018-2019) due to medical reasons. During this period she did not avail her Ph.D. fellowship from CSIR. Her communications to CSIR for extending financial support for a period of one year in view of medical reasons did not receive a favourable response. The DRC deliberated on her request for support from Institute funds for one year (beyond 5 years). It was decided to recommend the request to Dean Academics.

(Act: DRC Chairperson to forward to Dean Academics)

7. To report the matters for ratification by the DRC

- a. Project proposals submitted by departmental faculty

S. No.	Project Name	Investigators	Funding Agency

1	Boosting the bio-electrode: electroactive biofilms enhanced with electrochemically deposited nanomaterials	LED	MFIRP: IITD-HUJI
2	Identification of APOBEC3G/microRNA axis in the regulation of DNA repair in Glioblastoma	RK	MFIRP: IITD-HUJI
3	Microbiome-based strategy for mitigation of drought stress: A physical answer to a biological observation	SS	MFIRP: IITD-HUJI
4	Development of engineered microbial consortium for consolidating bioprocessing (CBP) of lignocellulosic agriculture by-products to lactic acid	AM (PI) KJM (Co-PI)	DST (Indo-Italy)
5	Microbial community profile of fecal indicators (viral and bacterial), and Antibiotic resistance genes (ARGs), Mobile genetic elements (MGEs) in extracellular DNA in an urban impacted river ecosystem – Implications for human and environmental health risk	ZA (PI) TRS (Co-PI)	DST
6	Green electricity by targeted engineering of plant rhizosphere	SS (PI) LED (Co-PI)	DST
7	A detailed foodomics study of selected commodities for authentication and exploration of nutraceutical potential	RK	NASF, ICAR

The above projects were circulated to members, since no comments were received the projects were forwarded to Dean R&D and the item was ratified.

b. Requests for RSTA

S. No.	Name of Student	Conference details
1	Arif Nissar Zargar (2016BEZ7504)	World Microbe Forum, 20-24 th June 2021
2	Swati Varshney (2016BEZ8325)	World Microbe Forum, 20-24 th June 2021

Applications for Research Scholar Travel Award by the two students were recommended to be forwarded to Dean Academics.

8. Any other item with the permission of Chair

(a) Requests received from Prof. Ashish Misra for (a) change in title (and project) of the thesis of his Ph.D. student, Ms Sakshi (2018BEZ8243), and (b) including an additional member in her SRC, were discussed by the committee. In view of his expertise, the committee recommended including Prof. K. J. Mukherjee as an additional expert in the SRC of the student.

Revised composition of SRC is as follows:

- *Chairperson – T. R. Sreekrishnan*
- *Internal experts – Shaikh Z. Ahammad, K. J. Mukherjee*
- *External expert – Neetu Singh, CBME*
- *Supervisor: Ashish Misra*

The Head and DRC Chairperson were advised to participate in the student's SRC meetings to facilitate her progress. The decision of changing the title was deferred till the next SRC meeting of the student, to be conducted in the presence of the additional expert, Head, and DRC Chairperson.

- (b) Paper I of written comprehensive examination for Ph.D. students of 2020 entry was decided to be held in 1st week of August 2021. PhD Coordinator was requested to communicate the same to the concerned batch. (Act: Ph.D. Coordinator)*
- (c) It was decided to initiate the process of allotment of topics to MTP students for Sem I, 2021-2022 and the allotments be finalised by June 2021. (Act: M.Tech. Coordinator)*
- (d) One application was received for the scheme of advance selection of NIT students for Ph.D. programme. It was decided to conduct interview for the applicant on 28th May 2021. (Act: Ph.D. Coordinator)*
- (e) One application was received for ASEAN Ph.D. fellowship. The applicant was found to be ineligible for the programme.*

Shilpi Sharma
Chairperson, DRC

Distribution: DFB (by email)

Shortlisting criteria for Admission to Ph.D. Program (Sem I, 2021-2022)

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 Qualifications for Admission to full-time Ph.D. Programme

Qualifying exam	Acceptable majors	General Category	General Category (EWS)	OBC (Non-creamy layer)	SC/ST & PD
B. Tech/B.E.	Biochemical Engineering, Biotechnology, Bioinformatics, Chemical Engineering, Chemical Science & Technology, Environmental Engineering, Industrial Biotechnology, Pharmaceutical Biotechnology	(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.	(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.	(i) B.Tech 70% or 7.0/10 CGPA (ii) Valid JRF or GATE score of min. 500 in Life Sciences or Biotechnology or Chemical Engg.	(i) B.Tech 65% or 6.5/10 CGPA (ii) Valid JRF or GATE score of min. 450 in Life Sciences or Biotechnology or Chemical Engg.
M. Tech / M.E / MS(R) or equivalent	Biochemical Engineering, Biological Engineering, Bioprocess Engineering, Bioscience & Bioengineering, Biotechnology, Bioinformatics, Chemical Engineering, Chemical Technology, Chemical plant design, Computational Biology, Computational Biology & Bioinformatics, Environmental Engineering, Environmental Science & Engineering, Environmental Biotechnology,	(i) MTech 80% or 8.0/10 CGPA	(i) MTech 80% or 8.0/10 CGPA	(i) MTech 80% or 8.0/10 CGPA	(i) MTech 75% or 7.5/10 CGPA

	Genetic Engineering, Industrial Biotechnology, Pharmaceutical Biotechnology				
M.Sc	Biochemistry, Biotechnology, Bioinformatics, Biophysics, Biosciences, Chemistry, Chemical & Molecular Biology, Computational Biology & Bioinformatics, Environmental Science, Genetics, Industrial Biotechnology, Life Sciences, Microbiology, Microbial Biotechnology, Molecular Biology & Biotechnology, System Biotechnology, System Biology & Bioinformatics	(i) M.Sc. 60% or 6.0/10 CGPA (ii) Valid JRF or GATE score of min. 550 in Life Sciences or Biotechnology or Chemical Engg	(i) M.Sc. 60% or 6.0/10 CGPA (ii) Valid JRF or GATE score of min. 550 in Life Sciences or Biotechnology or Chemical Engg	(i) M.Sc. 60% or 6.0/10 CGPA (ii) Valid JRF or GATE score of min. 500 in Life Sciences or Biotechnology or Chemical Engg	(i) M.Sc. 55% or CGPA 5.5/10 (ii) Valid JRF or GATE score of min. 450 in Life Sciences or Biotechnology or Chemical Engg.

For students from Centrally Funded Technical Institutions (CFTI)

Requirement of qualification in GATE / National Exam is waived off 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) Graduates of the 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 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. Programmes

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.

**Shortlisting of candidates for online exam (1st round) towards admission to Ph.D. programme
of DBEB**

Category	No. of applications received			No. of direct admission			No. of shortlisted students		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Gen	128*	282**	410	0	0	0	55	140	195
OBC-NCL	54	70	124	0	0	0	27	39	66
EWS	20	31	51	0	0	0	8	17	25
SC	44	30	74	0	0	0	17	12	29
ST	3	7	10	0	0	0	2	4	6
PwD	0	0	0	0	0	0	0	0	0
Total	249	420	669	0	0	0	109	212	321

*Includes one applicant who has mistakenly applied under the International Students category

**Includes one applicant who has submitted paper application

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M.Sc	Biochemistry, Biotechnology, Bioinformatics, Biophysics, Biosciences, Chemistry, Environmental Science, Genetics, Life Sciences, Microbiology	i) M.Sc. 60% or 6.0/10 CGPA ii) GATE score of min. 550 in Life Sciences or Biotechnology or Chemical Engg.	i) M.Sc. 60% or 6.0/10 CGPA ii) GATE score of min. 550 in Life Sciences or Biotechnology or Chemical Engg.	i) M.Sc. 60% or 6.0/10 CGPA ii) GATE score of min. 500 in Life Sciences or Biotechnology or Chemical Engg.	i) M.Sc. 55% or 5.5/10 CGPA ii) GATE score of min. 450 in Life Sciences or Biotechnology or Chemical Engg.

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