

Department of Biochemical Engineering and Biotechnology
Minutes of DRC meeting
(DRC-6/2020-2021)

Dated: 9th April 2021

The sixth meeting of the Departmental Research Committee (DRC) for the academic session 2020-2021 was held on 5 April 2021 at 3 pm by video conferencing.

The following members were present:

Prof. Shilpi Sharma (Chairperson & Acting Convenor)

Prof. T. R. Sreekrishnan

Prof. Atul Narang

Prof. D. Sundar

Prof. Rohan Jain

1. To confirm the minutes of the 5th meeting of the DRC for the session 2020-2021 held on 15th Feb 2021.

The minutes were confirmed as circulated.

2. To report the matters arising from minutes of Meeting No. 05/2020-2021

None.

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

The committee discussed the modality for Ph.D. selection process for Semester 1, 2021–2022. It was decided to assess the option of online test for the 1st round of selection. (Act: IG and RJ)

The following new project proposals floated by faculty members were approved:

Faculty	Ph.D. / MSR	Project title
AN	Ph.D.	Development of systematic methods for overcoming catabolite repression in <i>Escherichia coli</i> .
		Enhancing the ethanol productivity of glucose-limited cultures of <i>Scheffersomyces (Pichia) stipitis</i> .
PM	Ph.D.	Nanostructured stimuli-responsive molecularly imprinted polymers for the targeted delivery of produg and detection of breast cancer.
RK	Ph.D.	Investigating the role of non-coding RNAs in meningioma pathogenesis
RJ	Ph.D.	Recovery of furfural, acetic acid and 5 HMF from torrefaction condensate using solvent extraction, adsorption, distillation and other technologies
AN	MSR	Understanding the kinetics of <i>Saccharomyces cerevisiae</i> strains that resist catabolite repression.
		Development of an accelerostat —a bioreactor for rapid acquisition of steady state data.
PM	MSR	Bioactive molecule conjugated nano-hydroxyapatite: an angiogenic-

		osteogenic biomaterial for bone tissue engineering application (MSR project)
RJ	MSR	Recovery of acetic acid and removal of furfural from torrefaction condensate and subsequent conversion of acetic acid to valuable compounds

The list of Ph.D. and MSR projects available for the students to be admitted in Sem 1, 2021-2022 have been compiled as Annexure 1.

Schedule for the Ph.D. selection process was decided as follows:

- Announcement of list of shortlisted candidates: **10th May 2021**
- 1st and 2nd rounds of selection: **19th & 25-27th May 2021**, respectively

*A sub-committee comprising of Prof A. Misra, Prof. K. J. Mukherjee, Prof. R. Kulshreshtha and Prof. P. Mishra was formed for setting the questions for the 1st round of selection. It was decided that the questions should be vetted by the DFB latest by **7th May 2021**.*

4. Plan of work for the following Ph.D. students:

1. Rewati Dixit, 2019BEZ8187: Recovery of selenium from wastewater for their application as slow-release fertilizer
2. Surabhi Mishra, 2019BEZ8189: To develop metagenomics assisted tool for AMR surveillance

The dates of Paper II of written comprehensive examination (21st Feb 2021) and Oral comprehensive examination (23rd March 2021 for Rewati, and 24th March 2021 for Surabhi) of the students was recorded, and Plan of Work was approved based on recommendations by the members of SRC.

5. Addition of a member to the SRC for Rohit Khandelwal, 2015BEZ8355

Prof. Aradhana Srivastava, University School of Chemical Technology, GGSIP, was included as an Expert in the SRC of Rohit Khandelwal. Revised composition of SRC is as follows:

- Chairperson - Saroj Mishra
- Experts - Shilpi Sharma, K. J. Mukherjee, Aradhana Srivastava
- Supervisors: Preeti Srivastava and V. S. Bisaria

6. Synopsis of PhD student Shashi Kumar, 2015BEZ8358, for his thesis entitled "Co-culture studies on glucose and xylose mixture in batch and chemostat mode for bioethanol production"

The Committee discussed and approved the synopsis. The Committee also approved the panel of Examiners and authorized the Chairperson to forward the same to Dean Academics.

(Action: Theses supervisor to send the following documents to the DRC Chairperson: (a) Filled in form for Ph.D. synopsis submission & Appointment of Examiners, and (b) soft copy of the Synopsis)

7. Comprehensive examination for Paper-1 conducted on 15.03.2021

The committee took a note of the performance of both students, Arjun Rastogi (2019BEZ8183) and Debasa Mukherjee (2019BEZ8667). The students were advised to appear for Paper-2 of the written comprehensive examination.

8. Hardcopy application received for Ph.D programme

One hardcopy application (Application No. 50157) was received for departmental Ph.D. programme (Sponsored Ph.D.). It was decided to consider the application in the upcoming selection process for Entry to Sem 1, 2021-2022.

9. Applications for RETA

No application was received for the deadline of 1st April 2021.

10. To report the matters for ratification by the DRC

(a) Project proposals submitted by departmental faculty

S.No.	Project Name	Investigators	Funding Agency
1	Recovery of Ga, Ge and In through innovative biotechnology and process integration	Prof. Rohan Jain	SERB-SRG
2	Integrating hydrothermal liquefaction and biological resource upcycling towards the synthesis of high-value products from municipal solid waste and sewage sludge	Prof. Rohan Jain (Co-PI: Prof. T. R. Sreekrishnan)	DST Indo-Italian joint call
3	Extremophile electroactive microorganisms for hydrogen production in microbial electrolysis cells	Prof. Lucinda Elizabeth Doyle (Co-PI: Prof. Shilpi Sharma)	SERB-SRG
4	Enhanced production of piperine using elicitation of endophytes	Dr. Sushma Mishra (Mentor: Prof. Shilpi Sharma)	SERB-TARE

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. Request for change of date for Ex-India leave with fellowship by Shubham Dubey, 2017BEZ7534
In view of the pandemic the request for postponement of the start date for Ex-India leave with fellowship for Shubham Dubey was changed from 10th Jan 2021 (as approved in 1st DRC 2020-21) to 1st May 2021. The duration of leave is for 5 months.

c. Plan of work presentations of 2019 entry MSR students

The dates for plan of work presentations by 2019 Entry MSR students was recorded:

Name	Entry No.	Date of Plan of Work presentation
Sourabh Chavan	2019BEY7514	09.03.2021
Shravya Velamala	2019BEY7513	31.03.2021
Rajat Anand	2019BEY7511	31.03.2021
Sharad J.S.	2019BEY7512	18.03.2021

Their plan of work was approved based on recommendations by respective SRCs.

d. Application for extension of fellowship for a period of 6 months for the following PhD students:

- Rishabh Shukla, 2015BEZ8351
- Srishti Srivastav, 2015BEZ8353
- Manju , 2015BEZ8354
- Rohit Khandelwal, 2015BEZ8355
- Shashi Kumar, 2015BEZ8358

The applications were forwarded by the DRC Chairperson and the item was ratified.

11. Any other item with the permission of Chair

None



Shilpi Sharma
Acting Convenor, DRC

Distribution: DFB (by email)

List of Ph.D. projects available for students of Entry Sem 1, 2021-2022

Faculty	No. of slots available with faculty	Project number and title
Atul Narang	2	1. Development of systematic methods for overcoming catabolite repression in <i>Escherichia coli</i> .
		2. Enhancing the ethanol productivity of glucose-limited cultures of <i>Scheffersomyces (Pichia) stipitis</i> .
Prashant Mishra	2	1. Fabrication of bioactive peptide loaded multifunctional mesoporous silica nanoparticles for cancer treatment
		2. Biomarker based noninvasive method for detection of oral cancer using nanosensor.
		3. Nanostructured stimuli-responsive molecularly imprinted polymers for the targeted delivery of produg and detection of breast cancer.
Ritu Kulshreshtha	1	1. Investigating the role of non-coding RNAs in meningioma pathogenesis
Ravikrishnan Elangovan	2	1. Molecular source tracking of AMR pathogens based on Whole Genome Sequencing
		2. Optimization of light sheet microscopy for large clinical specimen analysis
Rohan Jain	1	1. Recovery of furfural, acetic acid and 5 HMF from torrefaction condensate using solvent extraction, adsorption, distillation and other technologies

List of MSR projects available for students of Entry Sem 1, 2021-2022

Faculty	No. of slots available with faculty	Project number and title
Atul Narang	2	1. Understanding the kinetics of <i>Saccharomyces cerevisiae</i> strains that resist catabolite repression.
		2. Development of an accelerostat —a bioreactor for rapid acquisition of steady state data.
Prashant Mishra	1	1. Bioactive molecule conjugated nano-hydroxyapatite: an angiogenic-osteogenic biomaterial for bone tissue engineering application (MSR project)
Ravikrishnan Elangovan	1	1. Liquid Biopsy: Exosome based diagnostics for lung cancer
Rohan Jain	1	1. Recovery of acetic acid and removal of furfural from torrefaction condensate and subsequent conversion of acetic acid to valuable compounds
Shilpi Sharma	2	1. Transfer of microbial load from fabric to other surfaces
		2. Soil metabolome as indicator of soil health
Z. A. Shaikh	1	1. Assessment of anaerobic digester performance in mitigating AMR proliferation during treatment of sewage