

**Department of Biochemical Engineering and Biotechnology**  
**Minutes of DRC Meeting N0 03/ 2017-2018**  
(DRC-03/2017-2018)

Sept 21, 2017

The third meeting of *Departmental Research Committee* (DRC) for the academic session 2017-2018 was held on **Wednesday, Sept 20th, 2017** at **12 noon** in the Committee Room (I-230) of the Department.

The following members were present:

Prof. T. R. Sreekrishnan (*Chairperson*)  
Prof. Saroj Mishra  
Prof. A. K. Srivastava  
Prof. Atul Narang  
Prof. D. Sundar  
Prof. Preeti Srivastava  
Prof. Ravikrishnan Elangovan  
Prof. Z. A. Shaikh  
Prof. Ashish Misra  
Prof. Shilpi Sharma (*Convenor*)

1. To confirm the minutes of the 2nd meeting of the DRC for the session 2017-2018 (*DRC-02/2017-2018*) held on July 27, 2017

The minutes of 2nd meeting of DRC 2017-18 held on 27th July 2017 were confirmed as circulated.

2. To report the matters arising from minutes of Meeting No. 02/2017-2018 and action taken.

None.

3. Approval of new Ph.D. and MSR proposals by faculty members

New projects sent by faculty members were approved. The list of topics available has been compiled as Annexure 1.

4. Allotment of projects to new Ph.D. and MSR students (July 2017 entry)

The Committee approved the allotment of projects to the Semester I, 2017-18 entry Ph.D. and MSR students as per Annexure 2. The respective supervisors are required to submit requests to DRC for constitution of SRC.

It was decided to ask Ms Sneha Kumari, Soumya Rajpal and Aakanksha Ahlawat to submit fresh choice of topics (from the available projects) to Ph.D. Coordinator by 27th Sept 2017.

5. Discussion on evaluation of BTP and MTP students

For MTP students the following criteria for evaluation was decided for the two evaluations conducted during the semester:

<b>Evaluation</b>	<b>BBD851/BBD853</b>	<b>BBD852/BBD854</b>
1	<ul style="list-style-type: none"> <li>• Understanding of project</li> <li>• Literature survey</li> <li>• Initial work done (BBD851)</li> </ul>	<ul style="list-style-type: none"> <li>• Work done and results</li> <li>• Presentation of results and discussion</li> <li>• Planning of future work</li> </ul>
2	<ul style="list-style-type: none"> <li>• Work done (methodology and initial results)</li> <li>• Future course of work</li> <li>• Planning of future work</li> </ul>	<ul style="list-style-type: none"> <li>• Overall understanding of project</li> <li>• Explanation of results</li> <li>• How the work done adds to the body of</li> <li>• knowledge in the field</li> </ul>

The evaluation for MTP students will be done based on the submission of a report (hardcopy and soft copy on *turnitin*) and presentation made to the examiners. The 2<sup>nd</sup> evaluation for BBD852/854 will be in the presence of an external examiner.

The evaluation for BTP students will also be based on report submission (hardcopy and soft copy) and presentation made to the examiners.

#### 6. Formation of evaluation committees for BTP and MTP students

Evaluation committees for BTP and MTP students for Session 2017-18 were approved as per Annexure 3.

#### 7. Synopsis of Ph.D. theses titled:

- (a) 'Cultivation of hairy root cultures using inert solid supports' submitted by Ms. Anveshika Aditya (2011BEZ8423)
- (b) 'Evaluation of laccases produced by *Cyathus bulleri* on wheat bran' submitted by Ms. Arpita Vats (2012BEZ8188)

The Committee discussed and approved the synopsis submitted by the Ph.D. students Ms Anveshika Aditya and Ms Arpita Vats. The Committee also approved the panel of Examiners and authorized the Chairman to forward the same to Dean (Academics).

(Action: 1 Thesis Supervisor to send the following documents to the DRC Convener:  
(a) Filled-in form for PhD synopsis submission & Appointment of Examiners (b) 2 hard copies of the Synopsis and (c) soft copy of the Synopsis by email)

(Action 2: Upon receipt of the above documents, Chairman DRC to forward it to Dean-Academics)

#### 8. Application received from Mr Anish Raju for part-time Ph.D. program in the department

The committee decided to take this up with other applications that might come in the next month.

#### 9. Approval of research plan of MSR student Mr Vasu Goel (2016BEY7506)

The Plan of Work for MSR student Vasu Goel (2016BEY7506) was approved on the basis of recommendation by the members of SRC.

#### 10. Constitution of SRC for PhD student Mr Arif Nissar Zargar (2016BEZ7504)

The Committee discussed and constituted the SRC for Arif Nissar Zargar and two other students: Deepak Sharma (2016BEZ8559) and Shefali Singh (2016BEZ8558), as per Annexure 4.

11. Application received from PhD student Ms Swati Varshney (2016BEZ8325) regarding release of DST Inspire Fellowship

The committee approved forwarding of application received from Ms Swati Varshney requesting Institute Assistantship for the period 22.7.2016 to 14.12.2016, to Dean Academics. This is in view of a recent letter from DST fixing her start date for INSPIRE Fellowship to be 15th Dec 2016.

12. Report on Comprehensive Examination and Approval of Research Plan of Ph.D. student Ms. Divya Singhi (2015BEZ8501)

Based on the recommendation of the students' SRC, plan of work of Ms. Divya Singhi (2015BEZ8501) was approved. (Action: Chairman DRC to forward the Form w/ enclosures to Dean - Academics)

13. To report the matters for ratification by the DRC

(a) Project proposals submitted by departmental faculty members

S. No	Project Title	Project Investigators	Funding Agency
1	Identification of mediator complex subunits differentially expressed in glioblastoma and their functional and regulatory characterization	Prof R. Kulshreshtha	SERB
2	Genome and metabolic engineering in Lactobacillus - developing a cell factory for human consumption bioproducts	Prof A. Misra (PI), Prof A. Narang (Co-PI)	DST Indo-Korea
3	Molecular events responsible for the switching of cell shape with respect to cell cycle in <i>Rhodococcus erythropolis</i> PR4	Prof P. Srivastava	SERB
4	Evaluation of novel/engineered laccases in combination treatment plants for degradation/decolourization of textile waste waters	Prof. S. Mishra (PI), Prof. T. R. Sreekrishnan (Co-PI)	DBT

The above projects were circulated to members, since no specific comments were received from the members on the proposal, the project was forwarded to Dean IRD and item was ratified in DRC.

(b) Change of BTP and MTP topics of students

- *S. Barath Kumar* (BTP supervisor Prof Sunil Nath): Modelling of cavities at aqueous interfaces in a membrane
- *Varsha Seshadri* (BTP supervisor Prof Ashish Misra): Rechanelling of flux in primary metabolism by genetic intervention
- *Archit Kumar* (BTP supervisor Prof Ashish Misra): Computational modelling of metabolic pathways

- *Rishabh Sethi* (MTP supervisor Prof Sunil Nath): Simulation of pH profiles in the vicinity of a membrane

The change in topics was approved.

(c) Allotment of MTP topic to Rishi Dayanand (2013BB50029)

Rishi Dayanand was allotted the topic "Characterization of growth condition for various *Bacillus* species" under the mentorship of Prof Ashish Misra.

(d) Application received from Mr Jitendra Singh Verma for conversion of full time to part time Ph.D.

The board ratified the forwarding of application to DR (PGS&R).

(e) Modifications in QIP M.Tech. and Ph.D. brochure for year 2018-2019

Modifications suggested by faculty members were forwarded to QIP Cell

14. Any other item with the permission of Chair

a) Approval of research plan of MSR student Ms Nidhi Yadav (2016BEY7507)

The Plan of Work for MSR student Nidhi Yadav (2016BEY7507) was approved on the basis of its recommendation by the members of SRC.

b) Proposal entitled "Experimental studies to elucidate the electrical aspects in the functioning of the FO-nanomotor in ATP synthase" submitted by Prof Sunil Nath for submission to DBT.

The above project was circulated to members, since no specific comments were received from the members on the proposal, the project was forwarded to Dean IRD and item was ratified in DRC.

c) Application received from Ph.D. student, Mr Samannaya Hazra, towards his resignation with effect from 1st October 2017.

The board agreed to forward the request to PG section.

d) Application received from Ph.D. student, Ms Anika Goyal (2017BEZ8288), requesting switching to Institute Assistantship from CSIR fellowship

The committee disapproved the request as her selection to the programme was based on her assistantship from CSIR.

e) Request received from Ph.D. student, Mr Omkar S. Vinchure (2014BEZ8003) for grant of ex-India leave from 12-25th October 2017 for personal reasons.

The board ratified the forwarding of application to Dean Academics.

The meeting ended with thanks to all members.

**Shilpi Sharma**  
Convenor, DRC

**Distribution**

All DRC members and other DBEB faculty (by email)

Annexure 1  
**List of available topics approved by DRC**

S. No	Supervisor 1	Supervisor 2	Potential PhD research topic
1.	AM		<i>Lactobacillus sp.</i> as a cell factory for the production of compounds of human importance
2.	AN		Use of alternative inducers for recombinant protein production in <i>K. phaffi</i> .
3.	DS		Computational genome analysis*
4.	DS	Renu Wadhwa AIST, Japan	Bioinformatics insights to the manipulation of hypoxia signaling for cancer metastasis treatment by natural products*
5.	PM		Metagenomic isolation and study of novel amidase enzymes for industrial applications*
6.	PM		Protein engineering for the development of bio-nano devices*
7.	PM		Nanoparticle-biomolecule hybrid systems for biosensor applications*
8.	PM		Engineering of Lipase for their application in reigo and stereoselectivity
9.	RE		Development of nano metal substrate for single molecule fluorescence detection
10.	RE		Purification of monoclonal antibodies using functionalized magnetic nanoparticles
11.	RE		Study of myosin XI driven transport using single molecule imaging
12.	RK		miRNA therapy for glioblastoma treatment
13.	SN	RE	Measurement of oxygen exchange by mass spectrometry for probing the mechanism of ATP synthesis by ATP synthase: A splendid molecular machine
14.	SN	RE	Probing the mechanism of ATP synthesis
15.	SS		Impact of xenobiotics on microbial community structure and function in agricultural soil
16.	ZA		Engineered wetland for removal of conventional and emerging pollutants from sewage
17.	TRS		Recovery of precious metals from industrial waste

S. No	Supervisor 1	Supervisor 2	Potential MSR research topic
1.	AKS		Measurement of <i>on line</i> fluorescence (NADH etc) for assessment of biomass, product and metabolic activity in plant /microbial cell cultivations
2.	AKS		Study of role of key nutrients on copolymers production from gaseous substrate (CH <sub>4</sub> : CO <sub>2</sub> : Air)
3.	AM	DS	Identification and characterization of a bacterial terpene synthase
4.	AM		Affinity capture and detection of functionalized molecules and cells using a PDMS device
5.	AN		Development of starvation promoters in <i>Escherichia coli</i> for production of recombinant proteins
6.	DS		Computational genome analysis*
7.	DS	Renu Wadhwa AIST, Japan	Bioinformatics insights to the manipulation of hypoxia signaling for cancer metastasis treatment by natural products*
8.	PM		Metagenomic isolation and study of novel amidase enzymes for industrial applications*
9.	PM		Protein engineering for the development of bio-nano devices*
10.	PM		Nanoparticle-biomolecule hybrid systems for biosensor applications*
11.	PS		Improving biodesulfurization using recombinant bacteria
12.	RE		Study of phosphate role in ensemble sliding of actin filament by myosin II
13.	RK		Investigating the role of mediator complex subunit in glioblastoma
14.	SM		Domain shuffling of laccases for application in textile sector
15.	SS		Engineering of rhizosphere for disease suppressiveness
16.	VSB	PM	Production and applications of bacterial nanocellulose

\*Floated as either MSR or Ph.D. topics

Annexure 2

**Allotment of topics to students of entry year 2017, Semester I**

<b>S. No</b>	<b>Student</b>	<b>Title</b>	<b>Supervisor</b>
<b>Ph.D.</b>			
1.	Rupsa Chaterjee	Engineered wetland for removal of conventional and emerging pollutants from sewage	Prof Z. Ahammad
2.	Priyanka Dubey	Recovery of precious metals from industrial waste	Prof T. R. Sreekrishnan
3.	Indranil Mondal	miRNA therapy for glioblastoma treatment	Prof R. Kulshreshtha
4.	Shivani Khatri	Impact of xenobiotics on microbial community structure and function in agricultural soil	Prof S. Sharma
5.	Anika Goyal	Purification of monoclonal antibodies using functionalized magnetic nanoparticles	Prof R. Elangovan
6.	Arti Tyagi	Development of nano metal substrate for single molecule fluorescence detection	Prof R. Elangovan
7.	Aditya Anand	Use of alternative inducers for recombinant protein production in <i>K. phaffi</i>	Prof A. Narang
8.	Dhvani S Vora	Computational genome analysis	Prof D. Sundar
<b>MSR</b>			
1.	Jagat Narayan Prajapati	Study of phosphate role in ensemble sliding of actin filament by myosin II	Prof R. Elangovan
2.	Anubha Shukla	Investigating the role of mediator complex subunit in glioblastoma	Prof R. Kulshreshtha
3.	Amanpreet Kaur	Protein engineering for the development of bio-nano devices	Prof P. Mishra
4.	Shruthi Lakshmi P	Domain shuffling of laccases for application in textile sector (SM)	Prof S. Mishra
5.	Mansi Arora	Improving biodesulfurization using recombinant bacteria	Prof P. Srivastava
6.	Shubham Dubey	Engineering of rhizosphere for disease suppressiveness	Prof S. Sharma

### Annexure 3

#### **Evaluation committee for BTP students**

<b>Examiners</b>	Prof. A. Misra	Prof. T R Sreekrishnan	Prof. Z A Shaikh	Prof. S. Nath	Prof. A.K. Srivastava
	Prof. D Sundar	Prof. R. Elangovan	Prof. V S Bisaria	Prof. P. Mishra	Prof. Atul Narang
	Prof. M N Gupta	Prof. S. Sharma	Prof. P. Srivastava	Prof. R. Kulshreshtha	Prof. S. Mishra
				Prof G P Agarwal	

<b>Students</b>	Bhave Chaitanya	Pankaj Yadav	Ayushi Agrawal	Jatin Kohar	Shashank Garg
	Jatin Mittal	Saurabh Parikh	Saurabh Srivastava	K Vinay	Sonakshi Bhatia
	Rashmi Yadav	Abhi Jain	Abhay Karol	Randheer Kumar	Aditi Agrawal
	Varsha Seshadri	Ankit Kumar	Deepak Kumar	Ankit Kumar Kaswan	Kartikaya Singh
	Vatan Goya	Anurag Dani	Saumya Goyal	Barath Kumar S	Neha Rangari
	Archit Kumar	Ganji Umesh Chandan	Shaurya Malhotra	Gajraj Singh Yadav	Satyajeet Kumar
		Shantanu Mathankar	Vijayant Pratap	Pradhan Siddhant Sameer	

#### **Evaluation committee for MTP students**

<b>Examiners</b>	Prof. Sunil Nath	Prof. D. Sundar	Prof. Ritu Kulshreshtha	Prof. T.R. Sreekrishnan	Prof. A.K. Srivastava
	Prof. Saroj Mishra	Prof. Ashish Misra	Prof. Prashant Mishra	Prof. V. S. Bisaria	Prof. Atul Narang
	Prof. G.P. Agarwal	Prof. Ravi Elangovan	Prof. Preeti Srivastava	Prof. Shilpi Sharma	Prof. Z.A. Shaikh
	Prof. M.N. Gupta				

<b>Students</b>	Rishabh Sethi	Mira Kabra	Divya Chaudhary	Satyarth Gupta	Saurabh Sharma
	Dhruv Bhalla	Tishya Kapoor	Sparsh	Swati Agrawal	Shailly Dharawat
	Raj Kumar	Shreya Pal	Palash Gupta	Ekatmika	Kumar Sahaj
	Priyanshu Agarwal	Kshitij Rai	Jayant Darokar	Jayant Nahata	Shubham M.
	Naresh Kumar M.	Rishi Dayanand	Raghav Kumar	Arogya Rajkumar G.	Malla Paramesh
	Devendra Singh	Akhil Kumar	Ramesh Chand Meena	Vageesh Gupta	Deepak Kumar Jat
	Shilpa Kamboj	Kaluram Ninama	Aniruddh Yadav	Priyanka Jalwan	Yatish Agrawal
	Nikhil Kanojia	Anant Preet	Bijjiga Jayaram	Prashant Pandey	Kunal Chaudhary
			Bintu Kumar Meena	TRK Saran	Tushar Khandelwal

Annexure 4

**Student's Research Committee for PhD students**

Students	Chairman, SRC	Expert from within the department	Expert from outside the department	Supervisor(/s)
Arif Nissar Zargar (2016BEZ7504)	Prof. S. Mishra	Prof. S. Sharma	Prof. B. Kundu (KSBS, IITD)	Prof P. Srivastava, Dr Manoj Upreti (IOC)
Deepak Sharma (2016BEZ8559)	Prof. A. K. Srivastava	Prof. Atul Narang	Prof B. J. Alappat (Civl Engg, IITD)	Prof Z. A. Shaikh, Prof T. R Sreekrishnan
Shefali Singh (2016BEZ8558)	Prof. S. Nath	Prof. R. Kulshreshtha	Prof. N. Singh (CBME, IITD)	Prof R. Elangovan