

Department of Biochemical Engineering and Biotechnology

**Minutes of the meeting of
Departmental Research Committee (DRC)
(DRC-01/2016-2017)**

September 16, 2016

The first meeting of the reconstituted *Departmental Research Committee* (DRC) for the academic session 2016-2017 was held on **Thursday, September 15, 2016 at 12:30 PM** in the Seminar Room (I-223) of the Department.

The following members were present:

Prof. T.R. Sreekrishnan (*Chairman*)
Prof. Atul Narang
Prof. Saroj Mishra
Prof. Prashant Mishra
Dr. Shilpi Sharma
Dr. Ritu Kulshreshtha
Dr. Preeti Srivastava
Dr. Ravikrishnan Elangovan
Dr. D. Sundar (*Convener*)

Item No. 1 - To confirm the minutes of the 8th meeting of the DRC for the session 2015-2016 (DRC-08/2015-2016) held on July 19, 2016.

The Minutes of the DRC meeting No. 8/2015-2016 were confirmed as circulated.

Item No. 2 - Matters arising out of the minutes of DRC-08/2015-2016.

None

Item No. 3 - Allotment of M.Tech Major Project (MTP) for the following dual degree students:

The Chairman informed the Committee that the following MTP projects were allocated to the three students, who had indicated their interest after the first round of allotment:

Sl.	Entry #	Student	Project Title	Supervisors
1	bb5120013	Ayan Agrawal	Optimization of conditions for viscosity reduction of heavy oil	Preeti Srivastava & Manoj Upreti (IOCL)
2	bb5120016	Dwarakanath Ragire	Determination of genome equivalents in <i>Rhodococcus erythropolis</i> under different growth conditions	Preeti Srivastava
3	bb5120032	Prem Khoja	Investigation of ethanol productoin by <i>Z. mobilis</i>	Ashish Misra

Item No. 4 - A note received from Dr. Ravikrishnan Elangovan regarding allocation of MTP to the dual degree student Mr. Ankit Dutt (bb5120010).

It was noted by the Committee that the student Mr. Ankit Dutt has not registered for the BED 851/853 MTP course in the current semester. It was decided that a fresh allotment of MTP topic to the student would be taken up by the DRC as and when the student registers for the course.

Item No. 5 - Constitution of committees for evaluation of M.Tech Major Projects (MTP) for BED851-854

The evaluation committees were constituted for the dual degree students by the DRC as given in **Annexure - 1**.

Item No. 6 - Project entitled 'Rapid genotyping of bacterial strains' floated by Dr. Ravikrishnan Elangovan for allotment to the student Ms. Jyoti Sharma (2015BEZ8503), who was selected for the Part Time PhD program in April 2016.

The Committee discussed and approved the allotment of the project to Ms. Jyoti Sharma as given in **Annexure - 2**.

Item No. 7 - A letter received from PhD student Ms. Nitu Maity (2015BEZ8502) seeking exemption for registering for pre-PhD course *BEL820 Downstream Processing*.

Based on the recommendation of the Supervisor, the Committee approved the course-exemption sought by the PhD student Ms. Nitu Maity.

Item No. 8 - A letter received from PhD student Ms. Swati Varshney (2016BEZ8325) regarding her DST-INSPIRE Fellowship.

The Committee noted the requirement of details of PhD topic/supervisor, etc for PhD student Ms. Swati Varshney to submit to DST by September 31, 2016 for availing INSPIRE fellowship and authorized the Supervisor/ student to go ahead with the submission to DST.

(Action: Dr. Shilpi Sharma)

Item No. 9 - Allotment of Projects to 2016 July-entry PhD students.

The Committee approved the allotment of projects to two 2016 July-entry PhD students (Samannaya Hazra and Swati Varshney) as given in **Annexure - 2**. It was decided that the remaining 2016 July-entry PhD students would be given additional time until September 25, 2016 to give their choices of PhD topics from the revised list of available projects (**Annexure - 3**). The Chairman was authorized to allot the projects to these students based on the choices to be indicated by them.

(Action: DRC Convener)

An updated list of DRC approved Ph.D. projects as on date (for allocation in the future semesters) is given in **Annexure - 4**.

Item No. 10 - Allotment of Projects to 2016 July-entry MSR students.

The Committee recommended that new projects be sought from faculty members for floating and the 2016 July-entry MSR students be given time until Sep 30, 2016 for conveying their choice of projects. The list of already available MSR projects is given in **Annexure - 5**.

(Action: DRC Convener)

Item No. 11 - Nomination for BOSS Award.

The Committee recommended that the nomination of Mr. Archit Raj (2011BB50006) to be forwarded to Dean (Academics) for favorable consideration.

(Action: Head of the Department)

Item No. 12 - Nomination for Ujjal Jiwan Charitable Trust Award.

The Committee recommended that the nomination of Mr. Ashutosh Mishra (2011BB50009) to be forwarded to Dean (Academics) for favorable consideration.

(Action: Head of the Department)

Item No. 13 - Guidelines for submission of project proposals to funding agencies.

The Committee finalized the '*Research Grant Application Coversheet*' as given in **Annexure 6**. It was further decided that following guidelines be followed, from now on, for submission of project proposals by faculty members to external funding agencies:

- a) PIs should first submit the proposal on IRIS.
- b) PIs should then fill-up the '*Research Grant Application Coversheet*' and email it to the Head of the Department, with a copy to the DRC Convener. There is no requirement for circulation of the full project proposal.
- c) The DRC Convener will circulate it subsequently to all DRC members.
- d) The Head of the Department will forward the proposal on IRIS within 3 working days of submission after seeking clarification from the PI, if any.
- e) PIs should apply for clearances (viz. ethical, safety, biosafety), if any, before submission to DRC.

Item No. 14 - To report the matters for ratification by the DRC

The Committee ratified the approval accorded by the Chairman (DRC) or Head of the Department on the following items:

- a) *Project proposals submitted by Drs. A.K. Srivastava and Shilpi Sharma as given below:*

Sl.	Project Title	Project Investigators	Funding Agency
1	National facility for mass production of plant-based therapeutic compounds by Plant Cell/Hairy root cultivations	AKS and TRS	DST (Drugs and Pharmaceuticals Research Program – DPRP)

2	Study on the influence of textile properties on microbial load	SS and Deepti Gupta (Textile)	DBT
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b) *Research Scholar Travel Award application of the following PhD student was forwarded to Dean (Academics) during the past two months:*

Sl.	Student	Entry Number	Conference
1	Swati Jaiswal	2009BEZ8506	Cell Symposia: Technology, Biology, Data Science, October 9-11, 2016; Berkeley, California, USA

Item No. 15 - To report the matters for information of the DRC.


The following matters were informed to the members by the Chairman DRC:

- Resignation of PhD student Mr. Ankur Kumar (2014BEZ8001)

Item No. 16 - Any other item with the permission of the Chair.

None

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


D. SUNDAR
DRC Convener

Distribution

All DRC members and other DBEB Faculty (by email)

Cc: DRC File

Students registered for BED 851

Sl.	Entry #	Student	Project Title	Supervisor(s)	Internal Examiner
1	bb5090003	Akhil Kumar	Lignocellulose to bioethanol SHF conversion in continuous mode	PKRC & ZA	VSB
2	bb5110003	Anandu S Mukundan	Development of magnetic tweezers to trap magnetically labeled cells	RE	SN
3	bb5120003	Abhay Tanksali	Membrane Bioreactor (MBR) for waste water treatment	GPA	ZAS
4	bb5120005	Abhineet Sain	Interaction of microbes with textiles	SS & Deepti Gupta (Textile)	PS
5	bb5120006	Aditi Mishra	Preparation of nCLEA of β -glucosidase and its application in production of Indigo	VSB	SS
6	bb5120011	Annie Godara	Production of the platform chemical 6-pentyl pyrone	AN	AKS
7	bb5120012	Atul Verma	Anaerobic and aerobic digestion of stillage from distillery	GPA	TRS
8	bb5120018	Gunjan Gupta	To engineer fructosyl amino acid oxidase	PS	SM
9	bb5120034	Rahul Kumar	Revisiting the characterization and annotation of <i>Saccharomyces cerevisiae</i> genes	GPA	RE
10	bb5120043	Tushar Thote	Use of nanofiltration for converting xylose and glucose into ethanol using yeast strains	GPA	SN
11	bb5120049	Chirag Mittal	Mass production of azaridachtin using inert solid supports	AKS	GPA

Students registered for BED 852

Sl.	Entry #	Student	Project Title	Supervisor(s)	Internal Examiner
1	bb5110003	Anandu S Mukundan	Development of magnetic tweezers to trap magnetically labeled cells	RE	SN
2	bb5110007	Ashish Nain	Development of fluorescent assay for quantification of bacterial cell viability	RE	AM
3	bb5110020	Jasmeet Singh	Performance comparison of tertiary treatment systems used in sewage treatment plants	ZA	TRS
4	bb5110051	Jaiprakash	Processing of fermented sweet sorghum hydrolysate	GPA	VSB

Students registered for **BED 853**

SI.	Entry #	Student	Project Title	Supervisor(s)	Internal Examiner
1	bb5120001	Aashika Sekar	Overcoming catabolite repression in <i>P.stipitis</i>	AN	AM
2	bb5120002	Aayushi Singhal	Mass production of shikimic acid using inert solid support.	AKS	AN
3	bb5120008	Deependra Kushwah	Elucidation of key molecules involved in cancer using TCGA analyses	RK	DS
4	bb5120009	Aashima Goyal	Investigation N-terminus residues in laccase functioning	SM	PM
5	bb5120013	Ayan Agrawal	Optimization of conditions for viscosity reduction of heavy oil	PS & Manoj Upreti (IOCL)	SM
6	bb5120015	Divyansh Apurva	Concentration of clarified sugar cane juice using nanofiltration and reverse osmosis	GPA	MNG
7	bb5120016	Dwarakanath Ragire	Determination of genome equivalents in <i>Rhodococcus erythropolis</i> under different growth conditions	PS	SS
8	bb5120017	Gaurav Singh Choudhary	Application of nano cross-linked enzyme aggregates of cellulolytic enzymes in hydrolysis of lignocellulosic residues	VSB	PM
9	bb5120019	G Vijay Kumar	Effect of interaction amongst <i>Azotobacter chroococcum</i> , <i>Bacillus megaterium</i> and <i>Pseudomonas fluorescens</i> on their plant growth promoting properties	VSB & SS	PS
10	bb5120020	Karishma Dagal	Biopreservative from <i>Lactobacillus</i> sp	SS	VSB
11	bb5120023	Malay Shah	Development of a starvation promoter for recombinant protein synthesis	AN	AM
12	bb5120025	Mayank Kumar Sahu	Fouling studies during microfiltration and ultrafiltration of treated waste water ¹	GPA	MNG
13	bb5120026	Meenakshi Saranga	Bio-sorption of heavy metals using hairy root cultures	AKS & TRS	SN
14	bb5120028	Nikhil Patidar	Preparation and characterization of bimetallic nanoparticles	PM	MNG
15	bb5120032	Prem Khoja	Investigation of ethanol production by <i>Z. mobilis</i>	AM	ZAS
16	bb5120035	Rishabh Mathur	Preparation and characterization of drug loaded BSA nanoparticles	PM	RK
17	bb5120036	Rohit Kumar Agarwal	Clarification of sugar cane juice via microfiltration and ultrafiltration	GPA	SN

18	bb5120037	Roshi Raina	Biodegradation of xenobiotic compounds	TRS	ZAS
19	bb5120039	Shashank Yadav	<i>In silico</i> analysis of antibiotic resistance genes	ZA,DS	GPA
20	bb5120040	Shenoy Rutha Ratnakar	Biopolymer for therapeutic	AKS	SN
21	bb5120044	Vasu Jaiswal	Identification of key molecules involved in cancer using TCGA analyses	RK	DS
22	bb5120048	Yash Kumar Bhati	Preparation of magnetic nanoparticle coated bacteria	PM	SM
23	bb5120050	Yoshita Agarwal	Production of biopolymer using air lift reactor with cell retention	AKS	TRS

Student registered for BED 854

SI.	Entry #	Student	Project Title	Supervisor(s)	Internal Examiner
1	bb5100043	Tannishka Singh	Effect of carbon source on the bio-granule properties in an anaerobic hybrid reactor	TRS	AN

Allotment of Projects for PhD students

Sl. No.	Student	Project Title	Supervisor (s)
1	Jyoti Sharma (2015BEZ8503)	Rapid genotyping of bacterial strains	Ravikrishnan Elangovan
2	Samannaya Hazra (2016BEZ8003)	Development of methods for measuring concentrations of intracellular sugars and cyclic AMP, small molecule regulators of prokaryotic gene expression	Atul Narang
3	Swati Varshney (2016BEZ8325)	Effect of type of fabric on microbial diversity in textile	Shilpi Sharma and Deepti Gupta (Textile)

(Action: Respective Supervisors to submit requests to DRC for constitution of SRC)

Revised list of PhD projects for 2016 July-entry students

(updated on Sep 15, 2016)

Sl.	Supervisor 1	Supervisor 2	Potential PhD research topic
1	GP Agarwal	Ashish Misra	Protein transmission investigations through ultrafiltration for moderately high-pressure range (> 100 Kpa).
2	GP Agarwal	Atul Narang	Mixed sugars fermentation for alcohol production with the help of nanofiltration
3	TR Sreekrishnan		Production of biopolymers (PHB and its derivatives) from molasses using <i>A. latus</i>
4	Prashant Mishra	Prashant Mishra	Engineering and nano-delivery of Azurin protein for cancer therapy
5	Prashant Mishra		Engineering of Lipase for their application in reigo and stereoselectivity
6	Sunil Nath	Ravikrishnan Elangovan	Measurement of oxygen exchange by mass spectrometry for probing the mechanism of ATP synthesis by ATP synthase: A splendid molecular machine.
7	Sunil Nath	Ravikrishnan Elangovan	Probing the mechanism of ATP synthesis
8	Atul Narang		Production of platform chemical 6-pentyl- α -pyrone (6PP) by <i>Trichoderma atroviride</i>
9	Shilpi Sharma		Understanding the interaction of bioinoculants applied as consortium
10	Ashish Misra		Genetic engineering and culturing of cyanobacteria for the production of renewable chemicals

List of other PhD projects (as on Sep 15, 2016)

(not being floated for the 2016-July entry PhD students)

Sl.	Supervisor 1	Supervisor 2	Potential PhD research topic
1	GPA	PM	Production and purification of lipase using MF and UF membrane
2	GPA	PS	Succinic acid production and its separation via nanofiltration
3	AKS		Mass production of bio/copolymer using <i>Azohydromonas australica</i> and <i>A. eutropha</i> in novel reactor configurations.
4	AKS		Production of biopolymers (PHB and its derivatives) from sulfite waste water
5	AKS		Scale up of continuous cultivation with cell retention for mass production of bio-pesticide (Azadiractin) by plant cell cultures
6	PKRC	PM	Process optimization for bioconversion of rice straw to ethanol
7	DS		Computational genome analysis
8	DS	Renu Wadhwa, AIST, Japan	Bioinformatics insights to the manipulation of hypoxia signalling for cancer metastasis treatment by natural products
9	SS		Non-dairy probiotics for Indian market
10	SS	SC	Biotic and abiotic factors affecting healthy Indian adult microflora
11	RE		Visualizing processive molecular motors using single molecular fluorescence techniques
12	PS		Engineering of Dibenzothiophene monooxygenase (DszC) for enhanced substrate range and improved activity
13	PS		Regulation of dsz operon
14	ZAS	TRS	Mitigating the risk of heavy metals and emerging contaminants in the environment

List of available MSR projects (as on Sep 15, 2016)

Sl.	Supervisor 1	Supervisor 2	Potential PhD research topic
1	GPA	AM	Protein transmission investigations through ultrafiltration for moderately high-pressure range (> 100 Kpa).
2	GPA	AN	Mixed sugars fermentation for alcohol production with the help of nanofiltration
3	AKS		Mass production of bio/copolymer using <i>Azohydromonas australica</i> and <i>A. eutropha</i> in novel reactor configurations.
4	AKS		Production of biopolymers (PHB and its derivates) from sulfite waste water
5	AKS		Scale up of continuous cultivation with cell retention for mass production of bio-pesticide (Azadiractin) by plant cell cultures
6	PKRC	PM	Process optimization for bioconversion of rice straw to ethanol
7	TRS		Production of biopolymers (PHB and its derivates) from molasses using <i>A. latus</i>
8	PM		Cloning and functional expression of amidase gene from <i>Delftia acidovorans</i> in <i>E. coli</i> .
9	PM		Cloning and functional expression of aminoacid racemase gene from a bacterial isolate in <i>E. coli</i> .
10	AN		Production of the platform chemical 6-pentyl-a-pyrone (6PP) by <i>Trichoderma atroviride</i>
11	AN		Development of methods for measuring concentrations of intracellular sugars and cyclic AMP, small molecule regulators of prokaryotic gene expression
12	SN	RE	Measurement of oxygen exchange by mass spectrometry for probing the mechanism of ATP synthesis by ATP synthase: A splendid molecular machine.
13	SN	RE	Probing the mechanism of ATP synthesis
14	DS		Drug discovery and bioinformatics of natural products
15	DS		Genome data analysis
16	SS		Characterization of toxin from <i>Lactobacillus</i>
17	SS		Microbiome analysis of contaminated water body
18	SS		Rhizosphere engineering
19	SS		Non target effects of pesticides
20	SS		Non-dairy probiotics for Indian market
21	SS		Biotic and abiotic factors affecting healthy Indian adult microflora
22	SS		Understanding the interaction of bioinoculants applied as consortium
23	SS	Deepti Gupta (Textile)	Effect of type of fabric on microbial diversity in textile
24	PS		Engineering of Dibenzothiophene monooxygenase (DszC) for enhanced substrate range and improved activity
25	PS		Regulation of dsz operon
26	RE		Visualizing processive molecular motors using single molecular fluorescence techniques
27	ZAS	TRS	Mitigating the risk of heavy metals and emerging contaminants in the environment
28	AM		Strain engineering for overproduction of isopentenols in a suitable microbial host



Department of Biochemical Engineering and Biotechnology
Research Grant Application Coversheet

Proposal Number from IRIS

This coversheet must be completed and submitted to the Head of the Department for forwarding the grant application to the IRD Unit. **Return the completed hardcopy to the Head's office and email the scanned copy to the Head of the Department with a copy to the DRC Convener.**

(A). Application Details	
Funding Agency (scheme)	
Closing date of submission to the funding agency	
Project Title	
PI	
Co-PI	
Major equipment required for the project	
Major equipment requested in the grant application	

(B). Abstract

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(C). Regulatory Impact

Does this grant application require any of the CLERANCES listed?			
If YES, please complete details below <input type="radio"/> No <input type="radio"/> Yes			
Indicate the relevant clearance required by ticking the relevant box	Has the relevant Committee's approval been received?		
	Yet to apply	Pending	Approval received dated
Institutional Bio-Safety Committee (IBSC)	<input type="radio"/>	<input type="radio"/>	
Ethical Clearance	<input type="radio"/>	<input type="radio"/>	

Declaration :

- (A) No additional space is required as existing space is sufficient for the proposed work
- (B) Space needed is available in the department (indicate place & approximate area)
- (C) No hazardous chemicals are required for the project

Principal Investigator's Certification	
I certify that all details on this application are correct and that health and safety implications have been considered in the design of the project and necessary clearances will be obtained before execution.	
Date:	Signature of the Principal Investigator

Signature of the Head of the Department