Department of Biochemical Engineering and Biotechnology
Minutes of DRC Meeting N0 01/2018-2019

25th July 2018

The first meeting of *Departmental Research Committee* (DRC) for the academic session 2018-2019 was held on **Wednesday, July 25, 2018** 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. Prashant Mishra
Prof. Preeti Srivastava
Prof. Ravikrishnan Elangovan
Prof. Ashish Misra
Prof. Shilpi Sharma (*Convenor*)

1. To confirm the minutes of the 7th meeting of the DRC for the session 2017-2018(*DRC-07/2017-2018*) held on **16th April 2018** and special DRC meetings held on **25th May 2018** and **20th July 2018**.
The minutes of 7th meeting of DRC 2017-18 held on 16th April 2018 and special DRC meetings held on 25th May 2018 and 20th July 2018 were confirmed as circulated, except for a typographical error in minutes of special DRC meeting held on 25th May 2018, wherein "special DFB" may be read as "special DRC".

2. To report the matters arising from minutes of Meeting No. 07/2017-2018 and special DRC meetings, and action taken.

7th DRC meeting, Item No. 6: In view of the feedback obtained on the new syllabus framed for Paper I for departmental comprehensive examination by the sub-committee, the sub-committee was requested to re-look on the same.
(Action: Sub-committee for new format of comprehensive exam)

3. New projects for allotment to Ph.D. and MSR students (Entry: 2018-2019, 1st Semester).
New projects sent by faculty members were approved. The list of total DRC approved topics available for Ph.D. and M.S.(Res) students for Entry Sem I, 2018-19 has been compiled as Annexure 1. The Ph.D. coordinator was requested to float the topics first for Ph.D. students. It was decided that a time period of two weeks be given to students for obtaining their preference of topics after interacting with faculty members. Post-allotment of topics to the Ph.D. students, the remaining topics may be floated for M.S.(Res) students for their choices.
(Action: Ph.D. Coordinator, DBEB)

4. Comprehensive examination for Ph.D. students:
(a) Paper I for Deepak Sharma (2016BEZ8559) and Shefali Singh (2016BEZ8558)
The Committee finalized the results of the Ph.D. written Comprehensive Exam (Paper I) conducted on 4th July 2018, and declared the two students to have cleared the examination.

(b) Paper II, and Oral Comprehensive Exam for Arif Nissar Zargar (2016BEZ7504)
The Committee finalized the results of the Ph.D. written Comprehensive Exam (Paper II) conducted on 2018 by his respective SRC members, and based on the marks obtained

declared him to have passed the exam. The Plan of Work for Ph.D. submitted by Arif Nissar Zargar was discussed, and based on the recommendations of his SRC, it was approved.

(Action: Chairman DRC to forward the Forms w/ enclosures to Dean Academics)

5.Synopsis of Ph.D. theses

Name	Title of thesis
Gautam Anand (2013BEZ8024)	ACC deaminase positive bacteria in stressed agricultural environments
Siddhi S. (2013BEZ8029)	Process improvement of ethanol production from lignocellulosic residues

The Committee discussed and approved the synopsis submitted by the Ph.D. students Gautam Anand and Siddhi S. 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 Ph.D. 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)

6. Application of foreign student, Mr. Amar Al Ansi for Ph.D. under TWAS-DBT Fellowship Program.

Ph.D. coordinator was advised to screen the application as per departmental screening criteria followed during the summer 2018 selection. If the candidate meets the same, he may be advised to formally apply online through the portal for PhD selections. Subsequently his interview will be scheduled for a final decision. *(Action: Ph.D. Coordinator, DBEB)*

7. Requests received from Ph.D. students for extension of their registration and fellowship

Name	Duration of extension
Richa Sharma (2013BEZ8026)	6 months
Gautam Anand (2013BEZ8024)	6 months
Sonam Takkar (2013BEZ8030)	6 months
Moolchand (2012BEZ8550)	6 months
Sakshi Aggarwal (2013BEZ8027)	6 months

It was noted that the five students have completed five years or more in the Ph.D. program and based on the recommendations of the respective supervisors, the Committee decided to forward the registration of the students beyond 5 years, and an extension of fellowship for the period. These students are required to register for the DTD899 doctoral thesis course in the new semester and the requirement of submitting progress report each semester along with the recommendations of the Supervisor/SRC will continue until the thesis is submitted.

(Action: Concerned students and their supervisors)

8. Synopsis of M.S.(Res) thesis

Name	Title of thesis
Nidhi Yadav 2016BEY7507	Microbiome analysis of contaminated water body
Nitika 2016BEY7503	Engineering yeasts for improved ethanol production
Nakul Aggarwal 2016BEY7502	Designing of hybrid algal-bacterial photobioreactor system for treatment of conventional and emerging pollutants in sewage

The Committee discussed and approved the synopsis submitted by the M.S.(Res) students Nidhi Yadav, Nitika and Nakul Aggarwal. 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 MS.(R) 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)

9. To report the matters for ratification by the DRC

(a) Project proposals submitted by departmental faculty

S. No	Project Title	Project Investigators	Funding Agency
1	Development of tertiary treatment system to reduce antibiotic resistance proliferation and heavy metal pollution	Dr. Parveen (mentor Prof. Z. Ahammad)	BioCARe-BIRAC
2	Overexpression of neurogenic differentiation factors, NeuroD2 and NeuroD6, as a novel approach for glioblastoma treatment	Prof. R. Kulshreshtha	SERB
3	Deciphering the role of ACC deaminase producing bacteria in mediating stress tolerance in *Cajanus cajan* against Fusarium wilt	Dr. Annapurna Bhattacharjee (Mentor Prof. Shilpi Sharma)	NPDF
4	Immunomagnetic enrichment and detect ion for exosomal mRNA as a circulating biomarker in lung cancer progression	Dr. Saumya Singh (Mentor: Prof. R. Elangovan)	NPDF
5	Scale up of high cell density bio-reactor cultivations for production of medical grade bio/copolymer	Prof. A. K. Srivastava	IMPRINT
6	Development of marine microalgal cell factory, photobioreactor systems and integrated biomass processes for large scale coproduction of biofuels and byproducts	Prof. A. K. Srivastava	IMPRINT
7	To develop silver-geniposide nanoformulations for antibacterial and hepatoprotective activity	Dr. Nafeesa Khan (Mentor Prof. P. Mishra)	NPDF
8	Novel approach for the development of bioactive peptide, Lunatusin loaded mesoporous silica nano-carrier for improved gated tumor-targeting strategy with an anti-microbial effect	Dr. Meeta Gera (Mentor Prof P. Mishra)	NPDF
9	Effect of heavy metal pollution on antibiotic resistance (MBLs/ESBL) proliferation	Dr. Parveen Sultana (Mentor Prof. T. R. Sreekrishnan)	NPDF
10	Enhanced methane production in high solids anaerobic digestion of lignocellulosic waste	Dr. Rubia Gaur (Mentor Prof. Z. A. Shaikh)	NPDF
11	Decoding hypoxic signature of long non coding RNAs (lncRNAs) in glioblastoma	Dr. Shivani Sharma (Mentor Prof. R. Kulshreshtha)	NPDF
12	Does AMR in livestock contribute to AMR in	Prof. Z. A. Shaikh	DBT-ESRC

	people in NE India? An interdisciplinary study		
13	Identification and functional characterization of hypoxia regulated long non-coding RNAs (lncRNAs) in glioblastoma	Dr. Shivani Sharma (Mentor Prof. R. Kulshreshtha)	CSIR-RA
14	Development of a cell factory for the production of L-alanine	Prof. Ashish Misra	BIRAC
15	Indo-US Joint Network Centre on Molecular Machines: A multidimensional approach	Prof. Sunil Nath	IUSSTF
16	Mass scale production of biodegradable polymers for medical applications	Prof. A. K. Srivastava	COE by Ministry of Chemicals and Fertilizers

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) Research Scholar Travel Award application by Ph.D. students
Research Scholar Travel Award applications of following students were recommended to be forwarded to Dean Academics:

S. No	Name	Entry Number	Conference
1	Gautam Anand	2013BEZ8024	Ecology of Soil Microorganisms, Helsinki, Finland 17-21 June 2018
2	Divya Singhi	2015BEZ8501	The biology and physics of bacterial chromosome organization, The Netherlands, 4-6 June 2018
3	Sonam Takkar	2013BEZ8030	29th Euro Global Summit on CancerTherapy and Radiation Oncology, Rome, Italy, 23-25th July 2018

(c) Application received from Ph.D. student Aditya Anand (2017BEZ8417) towards his resignation with immediate effect.
The committee agreed to forward the request to PG section.

10. Any other item with the permission of Chair

(i) Evaluation of MTP for batches from 2018 onwards

It was decided that a five-membered committee will evaluate the students for their M.Tech project. A common core committee for evaluation for the semester was formed comprising of Prof Atul Narang, Prof Shilpi Sharma, Prof Preeti Srivastava and Prof Ashish Misra. For each student his/her respective supervisor will constitute the fifth member of the committee.

(ii) Change of MTP topic of Kshitij Rai:

MTP topic of Kshitij Rai was recorded as "Design of a pulse generating circuit in a synthetic microbial consortia".

(iii) Plan of Work for M.S.(Res) student Anubha Shukla (2017BEY7502) was discussed, and approved on the basis of recommendations by the members of SRC.

(iv) Progress Report submitted by Ph.D. students for Semester II, 2017-2018, and award of grade for the course DTD899 (Doctoral Thesis).

On the basis of the progress reports submitted by the PhD students, it was decided to award a satisfactory (X) grade to all the students for the semester in DTD899 course and

the committee authorized the Chairman DRC to forward all the progress reports to the PG section. *(Action: Convenor DRC to upload the grades, and Chairman DRC to forward the letter to Dean-Academics)*

(v) Request by Ph.D. students Deepak Sharma (2016BEZ8559) and Shefali Singh (2016BEZ8558) for extension to appear in Comprehensive Exam Paper II and Oral Comprehensive

In view of the delay in holding a re-examination (for Paper I, Comprehensive) for two students Deepak Sharma and Shefali Singh due to the vacations, the committee recommended a grace period of 2 months (till September 2018) for them to clear Paper II and Oral Comprehensive/Plan of Work for their thesis.

(vi) Fresh list of foreign examiners was approved for Ph.D. thesis of Ritesh K. Aggarwal (2010BEZ8846). The committee authorized the Chairman to forward the same 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 projects available for Ph.D. students

S. No.	Supervisor 1	Supervisor 2	Potential PhD research topic
1.	**AKS**		Production of biopolymers from gaseous substrates (CH_4 : CO_2:Air)
2.	**AKS**		Scale up of Gibberellic acid fermentation process
3.	**AKS**		Scale up of continuous cultivation with cell retention for mass production of bio-pesticide (Azadiractin) by plant cell cultures
4.	**AM**		*Lactobacillus sp.* as a cell factory for the production of compounds of human importance
5.	**AM**		Metabolic engineering of a microbial host for the production of compounds of human importance
6.	**AN**		Kinetics of ethanol production in *Pichia stipitis**
7.	**AN**		Use of alternative inducers for recombinant protein production in *K. phaffi* *
8.	**DS**	**Renu Wadhwa AIST, Japan**	Bioinformatics insights to the manipulation of hypoxia signaling for cancer metastasis treatment by natural products*
9.	**DS**		Natural products as sources of new drugs*
10.	**PM**		Metagenomic isolation and study of novel amidase enzymes for industrial applications*
11.	**PM**		Nanoparticle-biomolecule hybrid systems for biosensor applications*
12.	**PM**		Engineering of Lipase for their application in reigo and steroselectivity
13.	**PM**		Design and development of aptamer and their gold conjugate for the rapid detection of pathogenic bacteria*
14.	**PM**		Design and development of detection system for nucleic acid markers for prostate cancer*
15.	**PM**		Fabrication of bioactive peptide loaded multifunctional mesoposous silica nanoparticles for cancer treatment*
16.	**RE**		Study of myosin XI driven transport using single molecule imaging
17.	**RK**		Investigating the role of long non-coding RNAs in Glioblastoma
18.	**SN**	**RE**	Measurement of oxygen exchange by mass spectrometry for probing the mechanism of ATP synthesis by ATP synthase: A splendid molecular machine
19.	**SN**	**RE**	Probing the mechanism of ATP synthesis

*to be floated for Ph.D. and M.S.(Res)

List of projects available for M.S.(Res) students

S. No	Supervisor 1	Supervisor 2	Potential MSR research topic
1.	**AKS**		Measurement of *on line* 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_4 : CO_2: Air)
3.	**AKS**		Scale up of Gibberellic acid fermentation process
4.	**AM**	**DS**	Identification and characterization of a bacterial terpene synthase
5.	**AM**		Affinity capture and detection of functionalized molecules and cells using a PDMS device
6.	**AM**		Generation of a yeast cell based-protein expression system for testing using PDMS microdevice-based capture
7.	**AN**		Development of starvation promoters in *Escherichia coli* for production of recombinant proteins
8.	**AN**		Kinetics of ethanol production in *Pichia stipitis**
9.	**AN**		Use of alternative inducers for recombinant protein production in *K. phaffi.* *
10.	**DS**	**Renu Wadhwa AIST, Japan**	Bioinformatics insights to the manipulation of hypoxia signaling for cancer metastasis treatment by natural products*
11.	**DS**		Natural products as sources of new drugs*
12.	**PM**		Metagenomic isolation and study of novel amidase enzymes for industrial applications*
13.	**PM**		Nanoparticle-biomolecule hybrid systems for biosensor applications*
14.	**PM**		Title: Design and development of aptamer and their gold conjugate for the rapid detection of pathogenic bacteria*
15.	**PM**		Title: Design and development of detection system for nucleic acid markers for prostate cancer*
16.	**PM**		Title: Fabrication of bioactive peptide loaded multifunctional mesoposous silica nanoparticles for cancer treatment*
17.	**VSB**	**PM**	Production and applications of bacterial nanocellulose.
18.	**RK**	**VP (KSBS)**	Investigating the role of G-quadruplexes in the regulation of non-coding RNAs
19.	**SS**		Transfer of microbial load from fabric to other surfaces
20.	**SS**		Bioremediation of heavy metals from indigenous strains
21.	**PS**		Studies on the mechanism of regulation of dsz operon

*to be floated for Ph.D. and M.S.(Res)