

“Report on Two Weeks Professional Development Program (PDP) On New Trends and Advancements in Bioengineering”

Bioengineering is the application of the life sciences, physical sciences, mathematics and engineering principles to define and solve problems in biology, medicine, health care and other fields. Traditionally, the biotechnology sector has had high barriers but fields like bioengineering, computational biology, robotics and other high throughput technologies have helped a lot in the growth of this field. Employee's performance and potential represents one of the greatest assets of any organization and thus the faculty need to update and reorient themselves to meet the rapidly changing professional and scientific needs of the stakeholders. The idea of PDP was henceforth conceived to appraise the teaching and non-teaching staff working in the area of bioengineering and related fields about the latest research advancements taking place in various disciplines encompassing bioengineering with the aim to enhance their academic and research career.

Inaugural Session

The PDP commenced with the Inaugural function on **15th November, 2021**. The function was hosted and coordinated by **Dr. Alvina Farooqui**, Associate Professor, Department of Bioengineering. The Programme began with the welcome address by **Prof. Mohammad Haris Siddiqui**, Registrar and Head, Department of Bioengineering, the Convener of PDP followed by addresses by the dignitaries of Integral University, **Prof. Aqil Ahmad**, Hon'ble Pro Vice Chancellor, **Prof. Javed Musarrat**, Hon'ble Vice Chancellor, **Prof. Syed Nadeem Akhtar**, Hon'ble Pro Chancellor and **Prof. Syed Waseem Akhtar**, Hon'ble Chancellor and Founder. Distinguished guests included **Prof. Rajendra Prasad**, Former Pro-Vice Chancellor, Jawaharlal Nehru University, New Delhi; Dean Faculty of Science Engineering and Technology, Amity University, Gurgaon who was the keynote speaker and also shared glimpses of his fascinating work on one gene one protein and multidrug transporter.

Prof. Mushtaq A. Siddiqui, Former Vice Chancellor, Islamic University of Science and Technology, Awantipora, Jammu & Kashmir, the Guest of Honour, emphasized that major breakthroughs in the field of medicine is due to the field of Bioengineering and also apprised the audience about the latest diagnostic tools and the role of Bioengineering in developing them. **Dr. Mohd. Aslam**, Former MD, BIRAC and Advisor DBT, Ministry of Science and Technology, Govt. of India spoke on the importance of collaborative research and also updated the audience about various schemes of DBT. **Prof. Rana Pratap Singh**, Pro Vice Chancellor, JNU was another Guest of Honour who motivated the teaching fraternity to work for innovation in teaching and research. The inaugural session was closed by the vote of thanks proposed by **Prof. Iffat Zareen Ahmad**.

PDP highlights

- Eminent speakers from prestigious Institutes like IITs, SGPGI, Lucknow Universities of national and international repute like JNU, New Delhi, BHU, Varanasi, AMU, Aligarh, BBAU, Lucknow, University of Hail, Hail, KSA, Research organizations like NIFTEM, Haryana, NIPER, Raebareli
- Registered Participants – 84 (covering 4 states of India) and 6 international participants from University of Hail, Qassim University, Saudi Arabia, Bezmialem Vakif University, Istanbul, Turkey, Mekelle Institute of Technology, Mekelle University, Ethiopia
- 11 days of face-to-face session and 80+ Hrs of Online active engagement through content-based learning, assignments & quizzes on the **Google platform**.
- Certificate: Participation certificate to attendees and Appreciation certificate to speakers and coordinators

PDP structure

The Professional Development Programme (PDP) focused on teaching **eight modules** by eminent researchers, scientists and academicians specializing in different fields of Bioengineering moderated by Faculty members of the Department of Bioengineering.

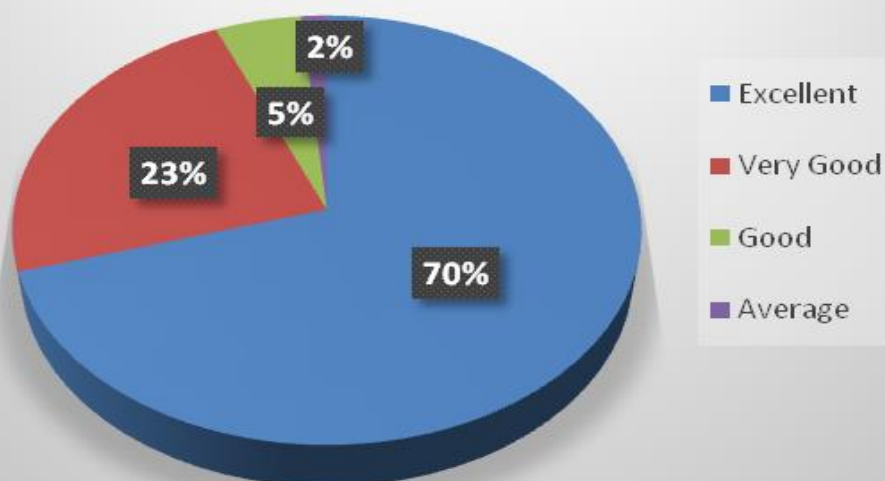
Module	Speakers	Date/Time	Title of the talk
1. Biotechnology	Prof. Prashant Mishra IIT, Delhi	10:30 am- 11:15am 16th November 2021	Recent Advances in Nanobiosensors for Bacterial Detection and Protein Based Nanodevices
	Prof. Rama Shanker Verma IIT, Chennai	11:30am- 12:15pm 16 th Novem ber 2021	Tissue Engineering and its Biomedical application.
	Prof. R.P. Singh IIT, Roorkee	10:30 am- 11:15am 17 th Novem ber 2021	Fossil Fuels: The depleting treasure
2. Pharmaceutical Biotechnology	Dr. Abha Sharma Dean & Associate Professor NIPER, Raebareli	9:30 am- 10:00am	Antidote and sensor for Organophosphorus compounds
	Prof. Shubhini A Saraf Dean, School of Pharmaceutical Sciences BBAU, Lucknow	11:30am- 11:45am 18 th Novem ber 2021	Lipid Based Nanocarriers for Biomolecules: From Nutraceutical to Pharmaceuticals
3. Computational Biotechnology	Prof. Asad U Khan	09:30 am- 10:15am	Designing potentials inhibitors against

	Interdisciplinary Biotechnology Unit Aligarh Muslim University	20th November 2021	carbapenemase type metallo-b- lactamases: a hybrid approach of computational biology
	Prof. Dhruv Kumar Amity Institute Of Molecular Medicine & Stem Cell Research, Amity University Noida.	10:30 am- 11:15am 20th November 2021	Cancer Cell Metabolism: A Potential Target for Cancer Therapeutics
	Dr. Manoj Kumar Yadav SRM University Delhi-NCR, Sonapat	11:30 am- 12:15pm 20 th Novem ber 2021	Drug repurposing against key COVID- 19 Drug Targets using advance Machine Learning based algorithms
4. Microbial Technology	Prof. Rizwan Hasan Interdisciplinary Biotechnology Unit Aligarh Muslim university, Aligarh, UP, India	10:30 am- 11:15am 22 nd Novem ber 2021	Amyloids Induction and its inhibition
	Prof. Mohd. Kuddus Department of Biochemistry College of Medicine University of Hail Hail, Kingdom of Saudi Arabia	11:30 am- 12:15 pm 22 nd Novem ber 2021	Microbial extremozymes and their biotechnological applications
	Prof. Atul Kumar Johri School of life sciences, JNU, Delhi	10:30 am- 11:15am 23 rd Novemb er 2021	Use of reverse vaccinology approach for the vaccine development against Group B <i>Streptococcus</i> whi ch causes high mortality in neonates.
5. Plant and algal Biotechnology	Prof. Anees Ahmad Aligarh Muslim University, Aligarh	09:30 am- 10:15am 24th November 2021	Intervention of in vitro morphogenesis for conservation and sustainable utilization of

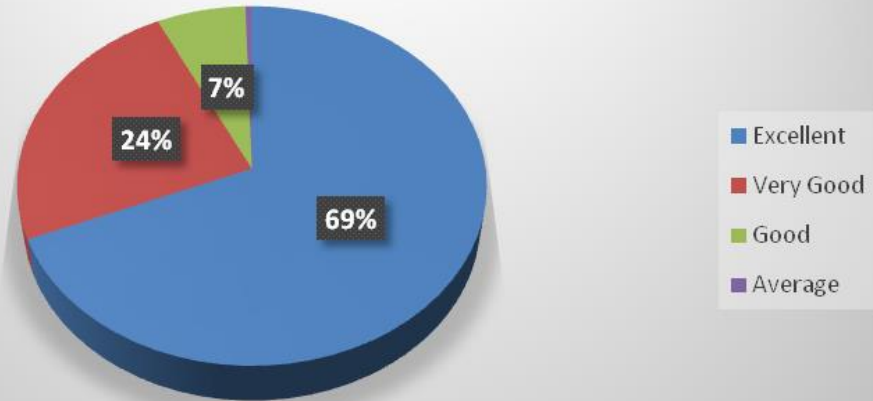
			Medicinal plants
	Prof. Shanty Sundram University of Allahabad	10:30 am-11:15am 24th November 2021	Designing sensors using algae as biomaterials
	Prof. L.C. Rai Distinguished Professor DAE Raja Ramanna Fellow & DST JC Bose National Fellow (BHU) Department of Botany BHU, Vranasi.	11:30 am-12:15pm 24th November 2021	Molecular basis of Arsenic toxicity in Anabaena PCC 7120: Characterisation of a novel Arsenic responsive gene
6.Food Biotechnology	Prof. Ashutosh Upadhyay HOD, Food Science and Technology NIFTEM, Haryana	10:30 am-11:15am 25th November 2021	Food Waste & Valorization: Overview and Challenges
	Prof. Sadaf Zaidi Department of Post-Harvest Engineering & Technology AMU, Aligarh	11:30 am-12:15am 25th November 2021	Food Waste Management: An overview
7.Biochemical Engineering	Prof. Brajesh Singh HBTU, Kanpur	09:30 am-10:15am 27th November 2021	Advancement in Biofuel and Impact of Environment.
	Prof. Shivesh Sharma MNNIT, Allahabad	10:30 am-11:15am 27th November 2021	Engineering Rhizosphere: Unraveling Plant-Microbe-Soil-Engineered Nanoparticles Interactions for Agricultural Sustainability.
8.Biomedical Engineering	Prof. Neeraj Sharma School of Biomedical Engineering IIT BHU	09:30 am-10:15am 29th November 2021	Recent advances in Biosignal Processing
	Prof. Neeraj	10:30 am-	NMR based

	Sinha CBMR, SGPGI Lucknow	11:15am 29th November 2021	metabolomics: a new paradigm to study disease biology
	Prof. Ashwani Kumar Thakur Associate Professor Department of Biological Sciences & Bioengineering (BS BE) IIT Kanpur, Kanpu	11:30 am- 12:15am 29th November 2021	Deciphering structural and biophysical basis of aggregation of proteins in Amyloid diseases

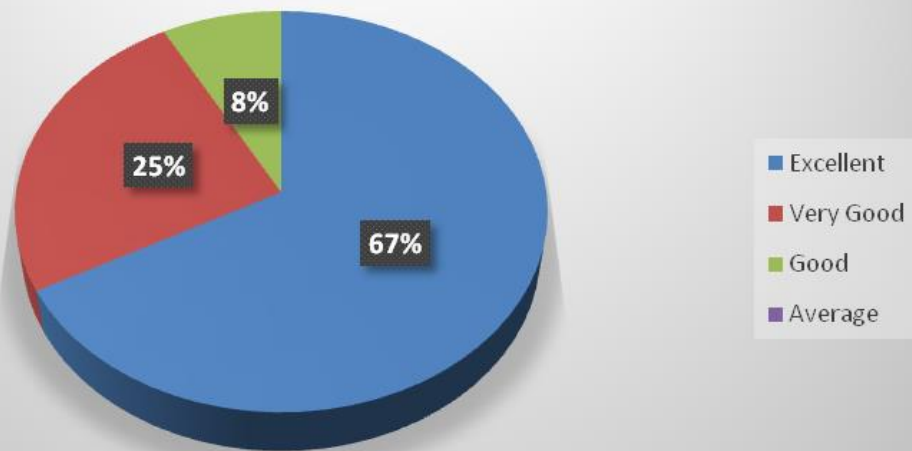
1. Theme and content of module



2. How would you rate the sessions of module?



3. The relevance of information and skills presented were:



4. The presenter(s) provided adequate time for questions and answered them satisfactory?

