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Minutes of Meeting of the Board of Studies for B.Tech.-Chemical Technology-Plastic Technology held on June 03, 2023
Department of Plastic Technology,
School of Chemical Technology,
HBTU, Kanpur

The meeting of Board of Studies for Plastic Technology was held on June, 03, 2023 at 11:30 AM for B.Tech.-Chemical Technology-Plastic Technology in Room no. 1-112 of HBTU Kanpur. Following members were present:

1. Dr. Pradeep Majhi, Associate Professor & Head; Department of Polymer and Process Engineering, IIT Roorkee, Roorkee - 247667 (Uttarakhand) (Expert members)
2. Dr. Syed Javed Ahmed Rizvi, Associate Professor; Department of Petroleum Studies Faculty of Engineering & Technology, Aligarh Muslim University Aligarh– 202 002 (UP) (Expert members)
3. Dr. D. S. Bag, Scientist G; Defence Materials and Stores Research and Development Establishment (DMSRDE) , Kanpur- 208013 (Expert members)
4. Dr. Pradeep Agarwal, Managing Director, Ark Golden India Pvt Ltd; D-31, Kamalanjali, Akota, Off. Old Padra Road; Vadodra – 399 020 (Gujarat) (Expert members)
5. Mr. Krishna Kanta, Vice President; Sperry Plast Limited, Greater Noida 201306 (UP) (Expert members)
6. Dr. Indira Nigam (Prof. & Head, Plastic Tech. Deptt.)
7. Dr. Reena Singhal (Member, B.O.S.)
8. Dr. Deepak Srivastava (Member, B.O.S.)
9. Dr. Soma Banerjee (Member, B.O.S.)

The minutes of the BoS meeting of Plastic Tech Dept. are as follows: The following changes were made in the course structure of the B. Tech. Plastic Technology:

1. HBTU, Kanpur is adopting New Education Policy (NEP) from session 2022-23 and as per the decisions of **Course Structure Committee/ Committee of Implementation of NEP-2022 of HBTU,** the course structure and syllabus have been developed.
2. The Diploma in **Chemical Technology-Plastic Technology** will be awarded after completion of 2nd year B.Tech program.
3. The students of four year B.Tech. program completing courses with additional credits of 20 or more in their respective branch of study will be awarded Degree of **B.Tech. Honours in Chemical Technology-Plastic Technology** The students can opt for additional courses from the list of PEC or from the online platform.
4. The students of four year B.Tech. program completing courses with additional credits of 20 or more in the area other than their branch of study will be awarded Degree of B.Tech with major in their respective branch of study along with Minor degree in the

area of specialization of additional courses. The minor degree offered by Department of Plastic Technology will be in **Plastic Processing Technology.**

Discussion and decision on the Structure of the B.Tech. Programme:

1. The course structure provided by academic section of HBTU was discussed and after deliberations, the first year course structure and syllabi were unanimously adopted. The course structures and syllabi for third semester onwards (from Third to Eight) were discussed at length and thoroughly deliberated upon. The adopted course structure and syllabi are annexed herewith as **Annexure 1**.
2. The total credits of the Degree **B.Tech Chemical Technology-Plastic Technology** will be **180** with I and II semester of 22 credits; III and IV are of 24 credits; V, VI and VII of 22 credits and VIII semester of 20 credits.
3. There are 20 two Engineering Science Course (ESC), two Humanities Courses (HSS); two Basic Science Courses (BSC); 20 Program Core Course (PCC); 5 Program Elective Course (PEC) and 3 Open Elective Course (OEC) (for students of other departments) with Industrial Training, Seminar, Minor Project and Project from III semester to VIII semester.

Discussion and decision on the Modification/improvement in the name of courses offered for B.Tech. Programme:

1. In the III semester the name of subject **Polymer Chemistry** was changed to **Introduction to Polymer Chemistry.** The Subject **Polymerization Engineering-I** was shifted from IV to III semester.
2. In the IV semester the name of subject **Polymer Processing-I** was changed to **Processing of Polymer.** The Subject **Polymerization Engineering-II** was shifted from V to IV semester. A new lab "Polymerization Engineering Lab" has been introduced in this semester.
3. In the Vth semester the name of **Polymer Processing II** has been changed to **Processing of Polymer II** and subject related to mold Design has been shifted from VII to V semester and its name has been changed to Plastic Mold Design and Dies.
4. The subject technology of elastomer has been shifted from VII to VI semester and its name has been changed to **Rubber Technology**. The subject Polymer Composites has been shifted from VII to VI semester. A new lab 'Polymer Characterization Lab has been introduced in this semester.

Discussion and decision on the Revisions/Improvement in the Syllabus of courses offered for B.Tech. Programme:

1. The syllabus of courses to be taught by Chemistry Department, Electrical Department, Electronics Department, Civil Engineering, Computer Science Department, Mechanical Engineering Department, Mathematics Department, Physics Department and Humanities Department where provided after approval from BoS of respective

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departments. However the courses offered by Chemical Engineering Department, were included as per suggestions communicated by HOD ChE and those will be approved in the BoS of Chemical Engineering Department. All the courses of the syllabi of other departments were scruitinized and deliberated upon. Several suggestions have been made by external and internal experts. The entire syllabus is revised by about 20%.

2. Dr D. S. Bag, in **NPL 201 Introduction to Polymer Chemistry (ITPC)**, in the Reference section, Book titled 'Principles of Polymers-An Advanced Book by D.S. Bag, Nova Science Publishers, NY, 2013' has been added as suggested by external expert.

3. Dr D. S. Bag, in **NPL 203 Polymerization Engineering-I (PE-I)**, Module II, in the Types of Catalyst, Zeigler Natta and Metallocene and recent advancement in catalysts have been included.

4. As suggested by Mr. Javed Rizvi, in **NPL 207 Polymer Chemistry Lab (PC Lab)** list of experiments, the expt. no. 1 has been revised as 'determination of refractive index of organic, monomers, solvents, etc. The expt. no. 8 is revised as 'determination of density of given polymer granules'. Mr. Krishna Kanta, various standards e.g. ISO, BIS, ASTM are included.

5. As suggested by Mr. Javed Rizvi, in **NPL 210 Polymerization Engineering Lab (PE Lab)**, in the list of experiments, expt no. 3 has been revised as 'synthesis of unsaturated polyester resin'.

6. As suggested by Mr. Javed Rizvi, in **NPL 301 Processing of Polymers-II (PP-II)**, in Module VI, in the list of experiments, expt no. 1 has been revised as 'Preparation of sample Dumble shape test specimen on semi-automatic injection molding machine'. Expt no. 2 has been revised as 'Preparation of sample Bar/Disk shaped test specimen on hand injection molding machine'. Expt. no. 3 has been removed.

7. As suggested by Mr. Javed Rizvi, in **NPL 303 Plastic Mould Design and Dies (PMDD)**, Module III, in the injection mould design part, Single cavity, two and three plate mould have been included. In Module IV, the typo has been corrected.

8. As suggested by Mr. Javed Rizvi, in **NPL 305 Polymer Rheology and Testing (PRT)**, in Module IV, in Testing of Polymer Properties, BIS, Concept of Global, quality assurance methods have been included. In Module V, additional characterization techniques added.

9. Dr D. S. Bag, in **NPL 308 Polymer Composites (PC)**, Module III, in the section of matrices for Polymer Composites global and local needs of polymer matrices in transportation has been included. Dr D. S. Bag, in Module 4, 'Bag moulding' has been revised as 'Vacuum Bag Moulding'. As suggested by Mr. Javed Rizvi, in the reference section, Text Book 'Mechanics of Composite Materials, second Ed., by Robart Jones and Robert M.

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Johnes has been added.

10. As suggested by Mr. Javed Rizvi, in **NPL 310 Polymer Characterization Lab (PCH Lab)**, in the list of experiments sl. no. 10 has been revised as 'Determination of melt viscosity by melt rheometer'.
11. Mr. Krishna Kanta, in **NPL 402 Plastic Waste Management (PWM)**, Module III, 'Global Policies and Regulation' section has been revised as 'Global environmental and Regulation of WHO, etc. Policies and regulations of Govt. of India. Plastic and environment, Silent features of Plastic waste management (PWM) rules. Waste treatment of various plastic plants, estimation of power requirement and efficiency of size reduction operation of plastic. Extended producer responsibility (EPR) for plastic waste management.

12. As suggested by Mr. Javed Rizvi, in **NPL 405 Plastic Product Technology (PPT)**, Module V of Computer Aided Design, 'Modeling and simulation applications for Plastic product, designing such as PROE, CATIA, CREO, NX, Solid works, Solid Edge, etc.' have been included.

13. As suggested by Mr. Javed Rizvi, in **NPL 411 Polymer Foams (PF)**, Module IV, the word 'Sorbothane' has been revised as 'synthetic viscoelastic urethane polymer'. As suggested by Dr. Pradeep Majhi, in **NPL 411 Polymer Foams (PF)**, Module V, Recent advancements in Polymer Aerogels has been included.

14. As suggested by Dr. Pradeep Majhi, in **NPL 413 High Performance Polymer Materials (HPPM)**, Module I, the properties and application of High performance Polymer composites are included. As suggested by Dr. Pradeep Agarwal, in Module I, the future prospective of High performance polymers has been included.

15. As suggested by Dr. Pradeep Majhi, **NPL 417 Polymer Blends (PB),** in Module I, examples of different types of polymer blends have been included.

The syllabus has been revised after incorporating the valuable suggestions from the external expert.

Discussion and decision on the Modification/improvement in the New courses offered for B.Tech. Programme:

1. In the IV semester, New Lab courses "**Polymerization Engineering Lab**" and in the VI semester "**Polymer characterization Lab**" has been introduced.

2. In the VII semester, new theory subjects, '**Speciality Polymers**' and '**Characterization of Polymers**' have been offered.

Discussion and decision on the Modification/Improvement in the Programme Elective courses

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offered for B.Tech. Programme:

1. In VII semester **three programme elective has been introduced** to increase the number of electives to 15 and following new subjects are added as PEC (Plastic Packaging, Polymer Adhesives, and Fiber and Film Technology). One subject Polymer Foams and Adhesives has been splited into two subjects. The name of Advanced Polymer Materials has been changed to High Performance Polymer Materials. The name of Polymer Blends and Alloys has been changed to Polymer Blends.

2. In VIII semester Programme elective has been introduced and two new courses **'Characterization of Polymers'** and **'Speciality Polymers'** have been introduced. The name of Plastic Packaging and Waste Management has been changed to Plastic Waste Management.

3. A new Open Elective has been introduced **'Testing of Polymers'**. The credit of Project has been increased from 10 to 16.

4. The credit for the **Minor degree** is 20 and the courses for the minor degree are Introduction to Polymer Chemistry, Processing of Polymers-I, Processing of Polymers-II, Plastic Mould design and Dies, Plastic Product technology.

The meeting ended with vote of thanks to all the BoS expert members and invitees. The expert members also gave consent to chairmen of BoS to make minor amendments in syllabus, if necessary.

Online
03/06/2023

joined in online mode (Pic attached)

(Dr. Pradeep Majhi)

Expert

joined in online mode (Pic attached)

(Dr. Syed Javed Ahmed Rizvi)

Expert

joined in online mode (Pic attached)

(Dr. D.S. Bag)

Expert

joined in online mode (Pic attached)

(Dr. Pradeep Agarwal)

Expert

joined in online mode (Pic attached)

(Mr. Krishna Kanta)

Expert

Reena

(Prof. Reena Singhal)

Member

(Prof. Deepak Srivastava)

Member

Soma Banerjee.

(Dr. Soma Banerjee)

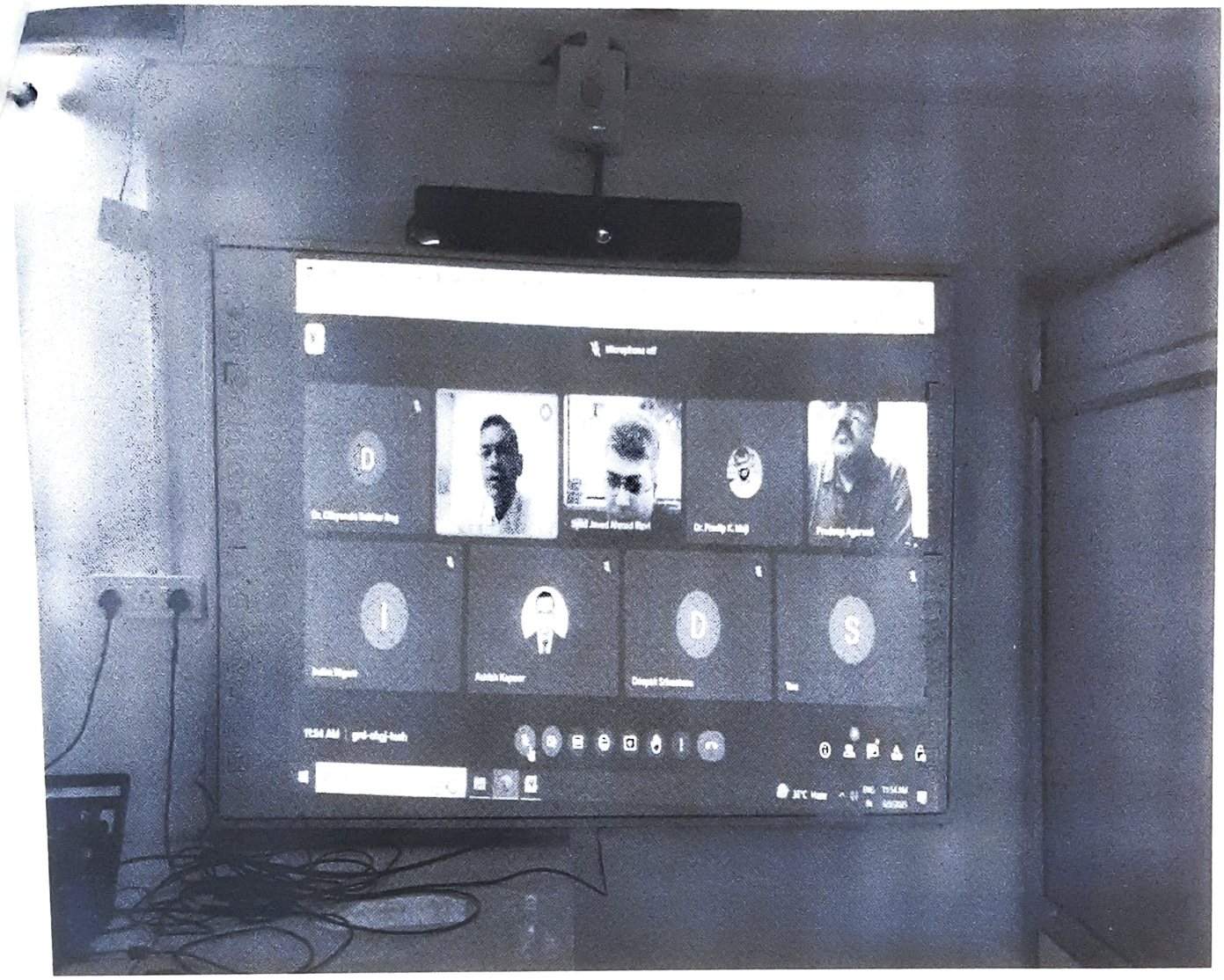
Member

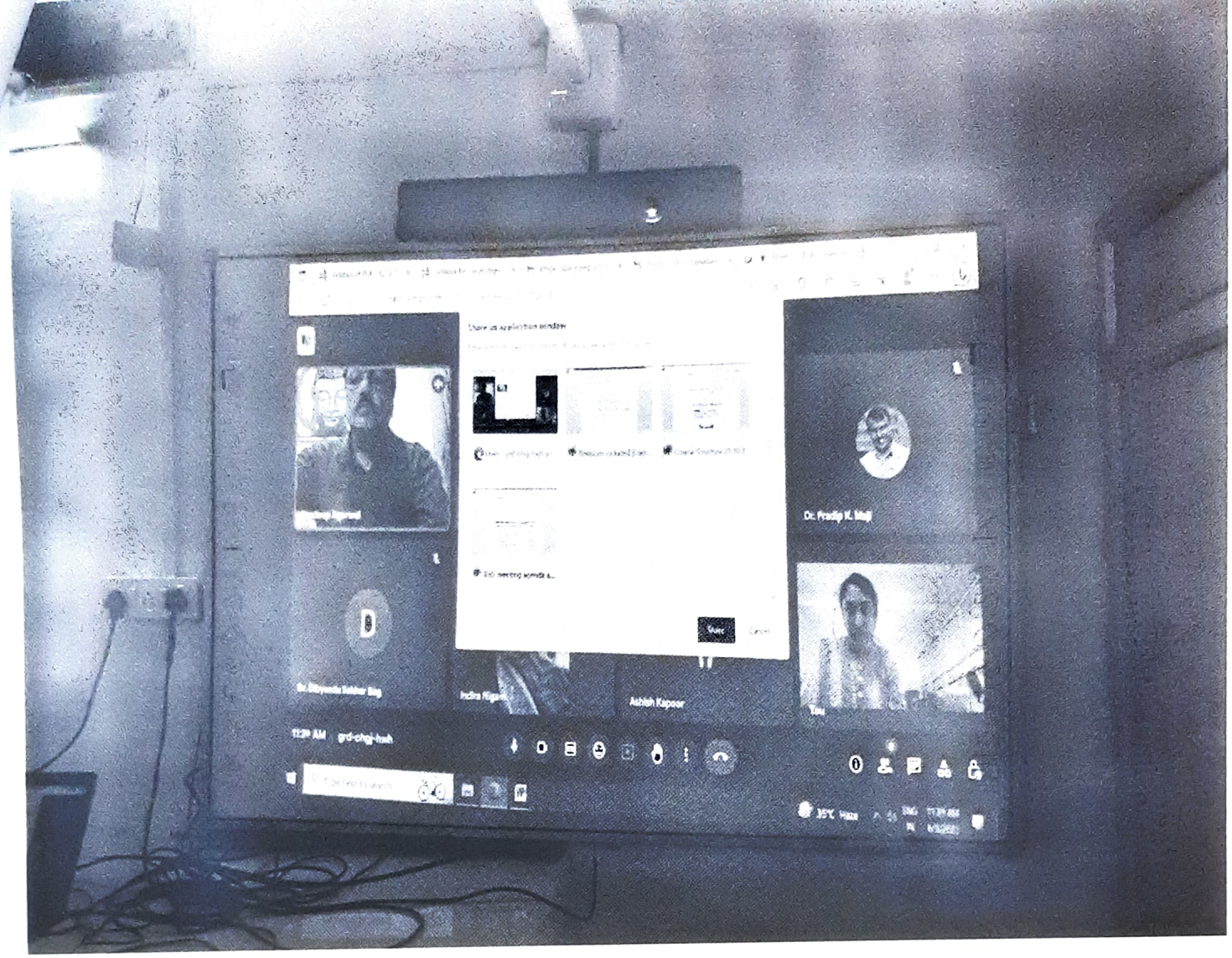
03/01/2023

(Prof. Indira Nigam)

Chairman


Dr. Dibyendu Sekhar Bag
Syed Javed Ahmad Rizvi
Dr. Pradip K. Maji
Indira Nigam
Deepak Srivastava
12:02 PM | grd-ohgj-hwh
36°C Haze




Dr. Pradip K. Maji
Ashish Kapoor