

Department of Polymer Engineering

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Annual Progress Report

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1. Academic

1.1 Introduction

Our BS Polymer Engineering, four year degree program explores the structure, characterization, properties and selection of the full range of polymeric materials used in industry today. Pupils are taught by the research-active lecturers having considerable expertise in their fields. The major focus of our program is on developing concepts and skills of students through class room learning, laboratory work, internship and industrial tours etc. We focus strongly on industrial relevance and application throughout the course as one of the main objectives behind the start of this program was to provide trained man power to polymer sector in the country. Our program is accredited by the Pakistan Engineering Counsel (PEC) enabling our graduates to go on to achieve registered/professional Chartered Engineering status.

1.2 Faculty & Staff

1.2.1 Faculty:

Dr. Yasir Nawab	Chairman/ Assistant Professor	Post Doctorate (Composite materials), France
Dr. Zulfiqar Ahmad Rehan	Assistant Professor	Polymeric Nano-composites Membranes and their Performances in Seawater Desalination
Dr. Zubair	Assistant Professor	Polymer Rheology
Engr. Wasif Razzaq	Lecturer	M.Sc Polymer Engineering UET, Lahore, Pakistan.
Engr. Muzammil Mehmood	Lecturer	M.Sc Chemical Engineering UET, Lahore, Pakistan.

Engr. Abdul Rehman	Lecturer	Masters in Polymer & Process Engineering UET, Lahore, Pakistan.
Engr. Ayesha Afzal	Lecturer	M.Sc. Polymer & Process Engineering UET, Lahore, Pakistan
Engr. Iqra Abdul Rashid	Lecturer	Msc. Polymer and Process Engineering UET, Lahore, Pakistan
Engr. Asra Tariq	Lecturer	MS in Materials and Surface Engineering National University of Sciences and Technology, Islamabad, Pakistan.
Engr. Arslan Ahmed Amin	Lecturer	M.Sc. Electrical Engineering (Control Systems) UET, Lahore, Pakistan
Engr. Adil Rasheed Khan	Lab. Engineer	BSc. Polymer Engineering National Textile University, Faisalabad., Pakistan
Engr. Muhammad Zubair Jilani	Lab. Engineer	BSc. Polymer Engineering National Textile University, Faisalabad., Pakistan

1.2.2 Staff

Mr. Abdul Rehman	Instructor
Mr. Farooq Anwar	Senior Clerk
Mr. Usman Gulzar	Lab. Technician
Mr. Asif Ali	Lab. Technician
Mr. Muhammad Sajid	Lab. Attendant
Mr. Shahryar	Lab. Attendant
Mr. Kashif Jameel	Naib Qasid

1.3 Faculty on Higher Studies

Mr. Hammad Mohsin	Asst. Professor	New Zealand
Mr. Asif Hafeez	Lecturer	Malaysia

1.4 Student Strength

Currently 143 students are enrolled in all years.

1.5 Approval of MS Program

MS program in Polymer Science & Engineering has been approved from the academic council in its 6th meeting held in June 2017.

1.6 Up gradation of Lab Facilities

Four labs of the department of polymer engineering have been shifted to NTRC third floor resulting in 70% more space for each lab.

Polymer Synthesis Lab



Unit Operations Lab



Polymer Characterization Lab



IPC Lab



1.7 Newly purchased equipment for Labs.



Melt Flow Indexer (MFI)



Digital PH Meter



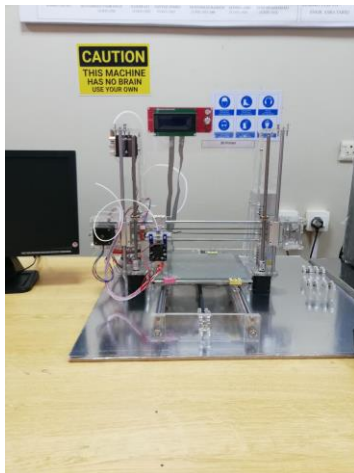
Water Cooling Tower



Membrane Film Casting Knife



Analytical Sieve Shaker



3D Printer

1.8 Industrial Advisory Board

The Department of Polymer Engineering (DPE) has established a new Industrial Advisory Board (IAB) that provides support and guidance to the DPE from the perspective of industry leaders. DPE graduates represent our principal product, and the IAB represents our customers. The first meeting of IAB was conducted on 20th April 2017.



1.9 Board of Studies

5th meeting of Departmental Board of Studies was held on 28 April, 2017 in the Video Conference Room, I.T. Center and was chaired by the Chairman, Dr. Yasir Nawab.



1.10 Job Placement Cell

The Department of polymer engineering has established a “Job Placement Cell”. Job placement cell in collaboration with different industries has organized a couple of recruitment drives in the last year.



1.11 Students Jobs

Following companies hired passing out students in year 2017:

Companies
Spell Synthetic Products Ltd. Lahore
Popular Pipes, Lahore
Express Packages, Lahore
Express Packages, Lahore
Gourmet Foods Faisalabad
Al-Aziz Enterprises
Spectrum Plastics, Gujranwala
Lahore Plastics Limited
Fiber Craft Industries, Lahore
Lahore Plastics Limited
Master Plastics, Gujranwala
Pak-Lite Industries Gujranwala

1.12 DPE Parents Council

In order to take the stakeholders on board, the department of polymer engineering has established a “DPE Parents Council” which holds its meeting in every semester.



2. Research & Development

2.1 Publications

1. Mumtaz Ali, Yasir Nawab, Abdelghani Saouab, Aima Sameen Anjum, Muhammad Zeeshan, "Fabrication induced spring-back in thermosetting woven composite parts with variable thickness", Journal of Industrial Textiles, Vol. , No. , (2017), pp.
2. Muhammad Umair, Khubab Shaker, Yasir Nawab, Abher Rasheed, Sheraz Ahmad, "A Study on the Twist Loss in Weft Yarn During Air Jet Weaving", Journal of Engineered Fibers and Fabrics, Vol. , No. , (2017), pp.
3. Madeha Jabbar, Khubab Shaker, Muhammad Umair, Yasir Nawab, "Optimizing the performance of woven protective gloves using grey relational analysis", Journal of the Textile Institute, Vol. , No. , (2017), pp.
4. Muhammad Umair, Khubab Shaker, Naseer Ahmad, Muzzamal Hussain, Madeha Jabbar, Yasir Nawab, "Simultaneous optimization of woven fabric properties using principal component analysis", Journal of Natural Fibers, Vol. , No. , (2017), pp.

2.2 Presentations/Keynotes

1. Muhammad Zeeshan, Mumtaz Ali, Aima Sameen Anjum, Syed Talha Ali Hamdani, Yasir Nawab, "Shape Memory Polymers and Their Composite for Structural Applications," In the Proceedings of 1st International Conference on Advanced Materials & Processing 2017 (ICAMP-17), Mehran University of Engineering and Technology, Jamshoro, Pakistan, 28 Feb. – 02 Mar. 2017; pp.

2. Yasir Nawab, Khubab Shaker “2D & 3D woven composites with auxetic behavior for improved mechanical properties,” 15th Internal Symposium on Advanced Materials (ISAM), National Centre for Physics, Islamabad, 16-20 October 2017
3. Yasir Nawab, “Development & characterization of novel 3D woven green composites for improved mechanical performance” 26th Zwick TestXpo, Ulm Germany, 16 -19 October 2017, Invited Talk
4. Yasir Nawab, “Auxetic woven composites with enhanced mechanical properties” in First International Conference on Advance Materials and Processing (I-CAMP), February 2017, Jamshoro, Pakistan
5. Zubair Khaliq, The polyelectrolyte behavior of cellulose solutions in N,N-dimethyl acetamide and lithium chloride, In the Proceedings of 1st International Conference on Advanced Materials & Processing 2017 (ICAMP-17), Mehran University of Engineering and Technology, Jamshoro, Pakistan, 28 Feb. – 02 Mar. 2017.
6. Muzammil Mehmood, Development and absorbancy characterization of alchite fibers for bio medical applications, In the Proceedings of 1st International Conference on Advanced Materials & Processing 2017 (ICAMP-17), Mehran University of Engineering and Technology, Jamshoro, Pakistan, 28 Feb. – 02 Mar. 2017.
7. Mr. Faizan Aslam participated in Composite Summit Turkey 2017. Turkish Composites Manufacturers Association fairs was held in Istanbul, Turkey from 5th – 8th October 2017 organized by the Bursa chamber of commerce and Industry (BTSO). Mr. Ubaid Ullah Khaliq form Fibre Craft Industries- Lahore, Mr. Ameer and Mr. Badar from Anwar Khawaja Composite- Sialkot and Mr.Ahtisham from Cosmopolitan Enterprises- Sialkot were also participated in this event.

2.3 Industrial projects by Faculty

Sr.#	Project	Name of PI	Funding Body	Amount (Million Rs.)	Year
1	To develop a lightweight carbon fibre based bobbin	Mr. Faizan Aslam	AA Spinning/AKC Industries	0.1	2017
2	Lightweight bulletproof vest made from 3D comingled woven thermoplastic composites and novel auxetic woven fabrics	Dr. Yasir Nawab	HEC/NESCOM (Technology Development Fund)	14.0	2017
3	Process optimization for the production of plasticizers for polymer industry	Dr. Z. A. Rehan	Power Chemical Industries (PCI)	0.05	2017
4	Evaluation and modeling the Residual stresses in thermoset composite to control interlaminar failure	Dr. Yasir Nawab	HEC/NDC (University-Industry Program)	2.0	2017
5	To develop EPDM based Rubber hose pipes and rubber door seal strips	Mr. Abdul Rehman	T.M. Rubber (TMR)	0.05	2017

2.4 Faculty Research Travel Grants



Mr. Faizan Aslam (Lecturer) participated in Turkish Composites Manufacturers Association fair held in Istanbul, Turkey from 5th – 8th October 2017



Dr. Zubair Khaliq participated in 10th UTIB International R&D Brokerage Event in Turkish Textile and Clothing Sector from March 8 to 9, 2018 held in Bursa, Turkey.

2.5 MoUs signed with industries

The department of polymer engineering has signed several memorandum of understandings with local and international industries.

International

1. Zwick/Roell, Germany
2. T. A. Instruments, USA



Signing of MoU between NTU & Zwick/Roell Germany

National

1. Fibre Craft Industries, Lahore
2. Anwar Khawaja Industries, Sialkot



MoU signing between DPE and Fiber Craft Industries Lahore

3. Paklite Group of Industries, Gujranwala
4. FabTECH Industries, Sialkot
5. NESCOM, Islamabad
6. I. J. Plastics, Faisalabad
7. Chawala Enterprises, Faisalabad
8. Midas Safety, Faisalabad
9. H & F Enterprises, Faisalabad

2.6 Industrial tours for students

- 7th semester to Anwar Khawaja Composite Industries, Sialkot
- 5th semester to ICI Polyester Limited, Sheikhpura
- 3rd semester to Paklite Group of Industries, Gujranwala
- 1st semester to Adamjee Plastic/Pipe Industries, Faisalabad



Industrial visit to Adam Jee Plastic Industries, Faisalabad



Industrial visit to Pak-Lite Industries Gujranwala



Visit to International Pak-Plas Expo, Lahore

2.7 Trainings/Seminars/workshops



Two days technical training on "CAD for Engineering"



Two days technical training on Material Characterization Techniques



A lecture on "Scholarship Winning Tactics for Engineers" & "Tackling Professional Life Challenges"



Training on Corona & Plasma Treatment of Textile & Polymeric Material



Two Days training on OBE

2.8 Faculty & Staff Industrial Trainings

Faculty				
S. No.	Name	Designation	Industry Name	Duration
1	Dr. Zulfiqar Ahmed Rehan	Assistant Professor	Amco Paints (Pvt.) Limited, Lahore	05-09-2017 to 11-09-2017
2	Dr. Zubair Khaliq	Assistant Professor	Amco Paints (Pvt.) Limited, Lahore	05-09-2017 to 11-09-2017
3	Mr. Mubeen Ahmed	Lecturer	Ibrahim Fibers Limited, Khuriawala, FSD.	18-09-2017 to 22-09-2017
4	Mr. Muzammil Mehmood	Lecturer	Jadeed Feeds (Pvt.) Limited, Kabirwala.	11-09-2017 to 15-09-2017
5	Mr. Wasif Razzaq	Lecturer	Fiber Craft Industries, Lahore	11-09-2017 to 15-09-2017

6	Mr. Abdul Rehman	Lecturer	Club Chemicals, Small Industrial Estate, Multan Road, BWP.	21-08-2017 to 25-08-2017
7	Mr. Faizan Aslam	Lecturer	Mad Mold Industries, Karachi	25-09-2017 to 29-09-2017
Staff				
8	Mr. Haseeb Iqbal	Lab Engineer	Servis Industries Limited, Gujrat.	11-09-2017 to 15-09-2017
9	Mr. Adil Rasheed	Lab Engineer	Aircraft Rbuild Factory, Kamra.	18-09-2017 to 22-09-2017
10	Mr. Usman Gulzar	Technician	Adamjee Pipe Industries, Faisalabad	20-09-2017 to 22-09-2017
11	Mr. Asif Ali	Technician	Shahzad Plastic Faisalabad.	12-09-2017 to 14-09-2017
12	Mr. Muhammad Shahreyar	Lab Attendant	Adamjee Pipe Industries, Faisalabad	20-09-2017 to 22-09-2017
13	Mr. Muhammad Sajid	Lab Attendant	Masood Textile Mills MTM, Khuriawala.	25-09-2017 to 27-09-2017

3. Technical/Non-Technical Societies

Society of Polymer Engineers

Society of Polymer Engineering is a technical society which deals with student affairs, technical affairs and manages all the events of the department. Society also provides safe and professional ways of dialogue between students and faculty on general issues. Society's first priority is the development and betterment of department. SPE also provides platform to students who want to show their abilities in technical and extra-curricular activities through different types of modules.



2nd Position in Inter – Departmental Declamation Contest

Participation in DICE-Textile Event



Product Development Competition-2017



OBE/Career Counseling Lecture



The Talent Hunt-17



Inauguration of Poly Techno Philia-17



The Welcome Party for the FRESHERS



Annual Sports/Tug of war



Annual Sports/ Indoor games



Annual sports prize distribution





DPE in collaboration with City Traffic Police and NTU Road Safety Club organized an awareness walk



DPE in collaboration with Quran Society arranged a lecture on "Role of youth in nation building"

The Annual Dinner & Alumni Meet-up

