

Department of Polymer Engineering

Polymer Engineering News Bulletin - 2024

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EDITORS

Dr. S. Shamshath Begum

Mrs. J. Dafini

NEWS LETTER (2023-2024)



Alhaj Dr. B.S. Abdur Rahman
Founder of the Institution



Mrs. Qurraath Jameela
Chancellor



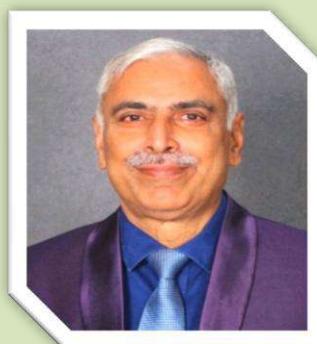
Mr. Abdul Qadir Abdul Rahman
Buhari
Pro-Chancellor



Prof. Dr. T. Murugesan
Vice-Chancellor



Dr. N. Thajuddin
Pro-Vice Chancellor



Dr. N. Raja Hussain
Registrar

NEWS LETTER (2023-2024)

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ABOUT THE DEPARTMENT

Department of Polymer Engineering was established in the year 1996 to deliver technical support to various academic institutions, polymer industries, and National laboratories. A first-ever four-year undergraduate program Polymer Engineering in Tamil Nadu was started with an intake of 30 students. The department is equipped with better infrastructure, and well-equipped lab facilities. Students will receive hands-on training in equipment handling and industrial practices. Employment in key polymer industries includes Apollo Tyres, Kingfa Science & Technology, Motherson Limited, Asian paints, TVS, MRF, and JK Tyres etc., The Polymer Engineering course of Crescent Institute is accredited by NBA. Entrepreneurs in this area also greatly valued because of the adaptability and versatility of this course. Higher studies abroad with 100% scholarships are one of the key highlights of this course.



Dr. H. Siddhi Jailani
Dean
School of Mechanical Sciences

MESSAGE FROM DEAN (SMS)

As we reflect on the past year, I am filled with pride in the accomplishments of our students, faculty, and staff within the Department of Polymer Engineering. It has been a year marked by innovation, collaboration, and a deep commitment to academic and research excellence.

Our faculty continue to lead research that pushes the boundaries of polymer science and engineering, contributing significantly to both the academic community and industry. Their work not only enhances our reputation as a premier institution but also creates lasting impacts in the field.

Our students have excelled in every way, demonstrating both academic rigor and enthusiasm in their pursuits. Whether through groundbreaking research, participation in competitions, or extracurricular engagement, they have continuously proven their dedication and passion for learning.

Together, we look forward to another year of achievement and progress, as we continue to advance the field of Polymer Engineering.



Dr. S. Shamshath Begum
Head of the Department (i/c)
Polymer Engineering

Message from Head of the Department

Department of Polymer Engineering offers four year B.Tech and Ph.D program in Polymer Engineering. The goal of the department is to provide high quality education and training in polymer engineering, enabling us to produce engineers with necessary technical knowledge and expertise to meet the demands in society. Looking back on our amazing journey spanning nearly 28 years, our list is filled with many noteworthy accomplishments and awards. The curriculum includes project-based learning, design courses and industry-based syllabus, hands on training on equipment's etc. The department regularly organizes conferences, seminars, symposia and workshops to develop relations with industries. Industrial visits and internships are a part of our curriculum and students also encouraged to do the final year projects in the industries. Our department also has numerous publications and patents. Our students also won prizes in various national level paper and poster presentations during the academic year 2023-2024.

DEPARTMENT ACTIVITIES



Guest Lecture on “Industries Synthesis of Polymers – Polyolefins” by Dr. Poondi Srinivasan – 29.04.2024

Department of Polymer Engineering organized a Guest Lecture on 29th April 2024. Dr. S. Shamshath Begum, Associate Professor and HOD (i/c) welcomed the gathering. The Guest Lecture was coordinated by Dr. Basanta Kumar Behera, Associate Professor (Sr.Gr). He introduced the speaker. Dr. Poondi Srinivasan, Consultant, Chennai, delivered a talk on “Industries Synthesis of Polymers – Polyolefins”. Students participated interacted with the speaker and industrial experience of Dr. Poondi Srinivasan was shared among the attendees.



Webinar on “Effect of Additives on Structure Development in Semicrystalline Polymers and Associated Properties”

On 28th March 2024, the Department of Polymer Engineering, BSACIST, Chennai organized an webinar on the topic entitled “Effect of Additives on Structure Development in Semicrystalline Polymers and Associated Properties” by the eminent speaker Prof. Dr. S. Radhakrishnan through online mode. The lecture through online mode was a part of guest lecture organized by the department to engage the students with eminent personalities on Polymer Engineering. The webinar was attended by the B.Tech. Polymer Engineering and also the students from other Institutions providing Polymer/Plastic Engineering course all across India. Students from CIPET Bhubaneswar, CIPET Balasore (Odisha), CIPET Ahmedabad (Gujarat), Department of Polymer Engineering, MIT, Aurangabad, Maharashtra also attended the webinar



Association of Polymer Engineers - Inauguration by Mr. G. Ananda Kumar, Deputy Manager, Stahl India Private limited 05.10.2023

The Department of Polymer Engineering organized Association of Polymer Engineers inaugural function on 05.10.2023. Dr. S. Shamshath Begum, Head of the Department (i/c) welcomed the gathering and dignitaries with a warm gesture. Mr. G. Ananda Kumar, Deputy Manager, Stahl India Private limited, Chief Guest has shared the importance of industry expectations, and opportunities of polymer engineers. Dr. N. Raja Hussain, Registrar, delivered the presidential address and shared his insights on department activities platform, best practices, and encourage the exchange of ideas that will drive innovation and excellence in polymer field. Dr. H. Siddhi Jailani, Professor & Dean, delivered the felicitation. Dr. J. Shahitha Parveen, AP, coordinated the event.



Guest Lecture on “Changing Lanes: The Transformation of Transportation and the Automotive Industry” by Mr. Sandeep Kumar Shukla, Lead Engineer, Materials Technology (Polymer), Mahindra Auto Division, Chennai - 27.10.2023



Department of Polymer Engineering Organized a Guest Lecture
27th October 2023

Dr. S. Shamshath Begum Associate Professor and HOD (i/c) welcomed the gathering. The Guest Lecture was coordinated by Dr. J. Shahitha Parveen, Assistant Professor (Sr. Gr). She introduced the speaker. Mr. Sandeep Kumar Shukla, Lead Engineer, Materials Technology (Polymer), Mahindra Auto Division, Chennai, delivered a talk on “Changing Lanes: The Transformation of Transportation and the Automotive Industry”. Students participated interacted with the speaker and industrial experience regarding the current development, technologies of Mr. Sandeep Kumar Shukla, was shared among the attendees.

National Level Seminar “Recent trends in Tyre and Rubber Product Manufacture” – 8th November 2023

The Department of Polymer Engineering organized a seminar on “Recent Trends in Tyre and Rubber Product Manufacture” on 08.11.2023. The event aimed at providing comprehensive overview of the current state of the tyre industry focusing on market dynamics, technological advancements, industrial manufacturing process and performance. Three distinguished speakers shared their expertise, each offering a unique perspective on various aspects of tyre industry. The seminar was open to all the members of the institute.



National Level Seminar “Recent trends in Tyre and Rubber Product Manufacture” – 8th November 2023

Dr. S. Shamshath Begum, Associate Professor & HoD (i/c) the convenor of the seminar extended a warm welcome at the gathering. In her opening address, she expressed gratitude to the distinguished speakers, Mr. T. Selva Kumar, Mr. A. Sajesh Chandran, and Mr. K. Gopi. She expressed her warm welcome to the Registrar, Dr. Raja Hussain Dr. H. Siddhi Jailani, Professor & Dean, Dr. S. S. M. Abdul Majeed, Professor & admissions director, and also the participants of the seminar. Ms. J. Dafini, Visiting faculty coordinated the seminar. Dr. N. Raja Hussain, Registrar, delivered the presidential address. He shared his insights on department activities and the importance of the seminar. Dr. S. S. M. Abdul Majeed, Director of admissions, delivered the felicitation.



Career Guidance Programme for Higher Secondary Students – 15th November 2023

The Department of Polymer Engineering organized a Career Guidance Programme for Higher Secondary Students on November 15, 2023. Mr. D. Balaji, Executive Director of Kingfa Science and Technology, who shared insights on the scope of Polymer Engineering. He shared his knowledge on the current landscape of polymer engineering and also provided a glimpse into the future opportunities and challenges within the field. The occasion was graced by the presence of Registrar, Dean of Mechanical Sciences and Admissions Director of B. S. A. Crescent Institute of Science & Technology.



NEWS LETTER (2023-2024)

Career Guidance Programme for Higher Secondary Students – 15th November 2023

Students from various schools in and around Chennai participated in the programme. Crescent School of Vandalur, St. Anne's Matriculation Higher Secondary School of Perungalathur and Sankara Vidyalaya of Urapakkam has participated in the seminar. The event featured engaging competitions such as quizzes, just a minute, essay writing contest, debate and maths puzzles for the students. To recognize and reward the achievements of the participants, prizes were distributed at the end of the event. The program also includes interaction with alumni through virtual and direct communication. The alumni of polymer engineering department shared their personal journey, highlighting the career pathways and their views on the polymer course. They also discussed about the higher studies opportunities in abroad. This session allows the students to ask questions and seek advice for their career path.



Career Guidance Programme for Higher Secondary Students - 15th November 2023



National Level Technical Symposium “MACRON 2024” - 1st March 2024

Department of Polymer Engineering organized the National Level Technical Symposium, “MACRON 2024” on 1st March 2024. Dr. T. Murugesan, Vice Chancellor delivered the presidential address. Dr. N. Thajuddin, Pro-Vice Chancellor delivered the inaugural address, Dr. H. Siddhi Jailani, Dean (School of Mechanical Sciences) delivered the felicitation address. Dr. S. Shamshath Begum, Associate Professor and HOD (i/c) welcomed the gathering. The symposium was coordinated by Dr. J. Shahitha Parveen, Assistant Professor (Sel. Gr). Dr. R. Rajesh Babu, Divisional Head – Compound Development Apollo Tyres, Chennai was the chief guest of the National Level Technical Symposium.



National Level Technical Symposium “MACRON 2024”

Student Magazine “POLYLINKS 2k24” was released by the chief guest. He delivered a talk on “Sustainability in Tyre Industries”. Students from various colleges participated in various events such as paper presentation, poster presentation, technical quiz and non-technical events. The certificates and prizes were distributed to the participants.



AUXILLARY ITEMS - Purchased

S. No	Name of Equipment	Price	Date of Purchase	Date of Installation
1.	Drum Collecting for Electro Spinning Apparatus	59,000/-	16.11.2023	16.11.2023
2.	Hot Plate Magnetic Stirrer	19,729.02/-	28.02.2024	28.02.2024
3.	Electro Magnetic Sieve Shaker	1,50,000/-	04.03.2024	04.03.2024
4.	Over Head Stirrer	29,820/-	21.03.2024	21.03.2024
5.	CAD Mould Education License	1,29,800/-	30.07.2024	24.09.2024

AUXILLARY ITEMS - Purchased



Electro Magnetic Seive Shaker



Hot Plate Magnetic Stirrer



Overhead Stirrer

List of Candidates Awarded Ph. D

Scholar	:	Mr. D. Murali Manohar
Supervisor	:	Dr. S. Shamshath Begum
Month & Year	:	December, 2023
Title of Thesis	:	Studies on dynamic viscoelastic and vibration damping characteristics of nitrile rubber - polyvinyl chloride blend composites

Scholar	:	Mr. Basanta Kumar Behera
Supervisor	:	Dr. M. Thirumurugan
Month & Year	:	January 2024
Title of Thesis	:	Studies on the viscoelastic and mechanical properties of ABS-reinforced composites

FACULTY ACHIEVEMENTS





Dr. S. Shamshath Begum
Associate Professor & HOD (i/c)



Dr. S. S. M. Abdul Majeed
Professor & Director (Admissions)



Dr. Basanta Kumar Behera
Assistant Professor (Sr. Gr)



Dr. S. Shahitha Parveen
Assistant professor (Sel. Gr)



Mrs. R. Daulath Banu
Assistant Professor (Sr. Gr)



Mrs. J. Dafini
Visiting Faculty

PUBLICATIONS

❖ J. Shahitha Parveen, M. Thirumurugan, M. Dhakshnamoorthy, S. Sathick Basha, R. Daulath Banu, V. Hari Shankar, “Enhanced performance of electrospun poly (ethylene oxide)/reduced graphene oxide polymer electrolyte for lithium-ion batteries”, Material Letters, Vol. 355, 13345, 2024.

DOI :<https://doi.org/10.1016/j.matlet.2023.135545>

❖ Basanta Kumar Behera, Thirumurugan M, Shahitha Parveen J, Murali Manohar D, and S. Shamshath Begum published a paper titled “The Influence of Graphite Filler on the Viscoelastic and Mechanical Characteristics of PC/ABS Hybrid Composite for Automobile Application” Journal of Mechanical Engineering, Volume 21(1), pp. 143-161, 2024.

❖ Basanta Kumar Behera, “Mechanical, viscoelastic, biodegradability characteristics of ramie fiber reinforced acrylonitrile butadiene styrene composites”, Journal of Applied Polymer Science, 2024, e55448.
<https://doi.org/10.1002/app.55448>

❖ Vilvanatha Prabu A, Vijayaraghavan G.V, Rehana Jan, Shahitha Parveen J, Poovarasan. K “Collegial effects of CeO_2/SiC nano-fillers on dielectric, thermal, impedance and conductivity behavior of PVDF-HFP matrix for flexible energy storage applications” Polymer - Plastic Technology and Materials, pp. 1-19, 2024.

DOI: <https://doi.org/10.1080/25740881.2024.2307335>.

PUBLICATIONS

- ❖ Tadele Ageru Alemu, Delele Worku Ayele, J Shahitha Parveen, Ababay Ketema Worku, Minbale Admas Teshager, Praveen C Ramamurthy and Dhakshnamoorthy Mani1, “Highly sensitive detection of bacteria (E. Coli) endotoxin using novel PANI-benzimidazole-Ag nanocomposite by DMMB dye displacement assay” Materials Research Express 10 (2023) 075302. DOI [10.1088/2053-1591/ace239](https://doi.org/10.1088/2053-1591/ace239)
- ❖ Murali Manohar Dharmaraj, S. Shamshath Begum, and Bikash C. Chakraborty, “A study on nitrile rubber/polyvinyl chloride blend vulcanization kinetics with different fillers by using single isothermal rheography”, Journal of Elastomers & Plastics, 55 (6), 2023, pp. 896-916.
- ❖ N. Gopinathan, S. SathikBasha, N. Vasimalai, Noor Aman Ahrar Mundari, A.Shajahan, J. Shahitha Parveen, S. Syed Enayathali, “Composition-Driven Structural, Optical, Thermal and Electrochemical Properties of Hybrid Perovskite – Structured Methlammonium- Tin-Chloride”, Journal of Electronic Materials, Vol.53, pp.94-105, 2023. DOI: <https://doi.org/10.1007/s11664-023-10777-0>

PUBLICATIONS

- ❖ A Vilvanathaprabu, GV Vijayaraghavan, M BasheerAhamed, J Rehana, J Yoganadhan, J.ShahithaParveen, “Influence of $\text{SrTiO}_3/\text{Fe}_2\text{O}_3$ nano-fillers assisted PVDF-HFP polymer nanocomposite films on dielectric, impedance, and conductivity studies for energy storage applications”, *Fullerenes, Nanotubes, and Carbon Nanostructures*, pp.1-12, 2023.

DOI :<https://doi.org/10.1080/1536383X.2023.2296141>.

INTERNATIONAL CONFERENCES

- ❖ Dr. Basanta Kumar Behera, “A Study on the Mechanical and Viscoelastic Characteristics of Compression Molded Acrylonitrile Butadiene Styrene(ABS)/Coconut Fiber (CF) Bio-Composites and the Cole-Cole Plots” in the “International Conference on Advanced Functional Materials and Devices (AFMD – 2024)”, Nanotechnology Research Center (NRC), SRM Institute of Science and Technology, Kattankulathur, Chennai, Tamilnadu, India, 28 – 29 February, 2024

PATENTS / BOOK CHAPTER

Granted

S. Shamshath Begum, “An apparatus for synthesizing polymer-based composites”, Patent Application (202141056758), Indian Patent Office Journal, 02-04-2024.



Published

S. Shamshath Begum, “A system and method for automated moulding process” (202441012991), Indian Patent Office Journal, 22-02-2024.

BOOK CHAPTERS - PUBLISHED

S. Shamshath Begum, and Asit Barun Samui

Title : “**2D nanomaterials for removal of gas molecules**”
Nanomaterials in Environmental Analysis – Elsevier Publications, 2024, ISBN : 978-0-12-820643-0, pp.393-417.

DOI : <https://doi.org/10.1016/B978-0-12-820643-0.00020-1>

Shahitha Parveen . J, and M Thirumurugan

Title: “**New generation polymer nano composites for flexible electronics**” Advances in Flexible And Printed Applications- Materials, fabrication and applications, IOP Publishing, 2023, ISBN:978-0-7503-5492-9, pp. 2-23.

DOI: <https://doi.org/10.1088/978-0-7503-5492-9ch2>

CONFERENCES / FDPs / SEMINARS

S. No	Faculty Name	Training Course	FDP/ Training/ Webinar	Organizer	Date / Duration
1.	Dr.Basanta Kumar Behera	Future of Tyre and Rubber Industry in 2030 and Beyond	Seminar	IRI Chennai Chapter	26.06.24
2.	Mrs. J. Dafini	Strategies for publishing in High Impact Factor Journal	Webinar	BSACIST	17.04.24
3.	Dr.Basanta Kumar Behera	Current and Future Technological Development in Rubber Components	Seminar	IRI Chennai Chapter	06.04.24
4.	Dr. J. Shahitha Parveen	Characterization of Polymers, Elastomers and Composites	NPTEL	IIT	Jan - April 2024
5.	Mrs. J. Dafini	Characterization of polymers, elastomers and composites	NPTEL	IIT	Jan - April 2024

CONFERENCES / FDPs / SEMINARS

S. No.	Faculty Name	Training Course	FDP/ Training/ Webinar	Organizer	Date / Duration
6.	Dr. J. Shahitha Parveen	X –ray Diffraction Analysis	Hands on Training	Department of Physics, BSAU	24.03.24
7.	Dr. Basanta Kumar Behera	Latest Development in Automotive Plastic Industry, Machinery, Automation, and Mould	Seminar	IPI Chennai, Chapter	01.03.24
8.	Dr. J. Shahitha Parveen	Polymers: Concepts, Properties, Uses and Sustainability	NPTEL	IIT	July – October 2023

KEY NOTE / INVITED SPEAKERS

S. No	Faculty Name	Title	Organizer	Date / Duration
1.	Dr. S. Shamshath Begum	Session Chair & Keynote Address	2 nd International Conference on Recent Trends in Engineering and Technology – (2 nd ICRTE-T – 2024)	14 th , March 2024
2.		Invited Talk	4 th International Conference on Recent Trends in Engineering Technology and Management 2024, (4 th IC RETM – 2023), Suguna College of Engineering, Coimbatore, India	5 th – 6 th , April, 2024
3.		Invited Talk	The International Conference on Recent Innovative Techniques in Engineering, Technology, Science, and Management – (ICRITETSM – 2023)	17 th , December 2023

Advisory Committee Member

S. No	Faculty Name	Organizer	Date / Duration
1.	Dr. S. Shamshath Begum	15 th International Conference on Recent Engineering and Technology 2024, – (15 th ICRET–2024) – 30 th – 31 st , May 2024 – Sri Venkateshwara College of Engineering, Bangalore, India	30 th and 31 st , May 2024
2.		5th International Conference on Engineering and Advancement in Technology, – (5 th ICEAT – 2024) – 17 th – 18 th , May 2024 – Malla Reddy Institute of Engineering and Technology, Hyderabad	17 th –18 th , May 2024
3.		4th International Conference on Recent Trends in Engineering Technology and Management 2024, (4 th ICRETM – 2023) – 5 th – 6 th , April 2024 – Suguna College of Engineering, Coimbatore, India	5 th – 6 th , April, 2024

STUDENTS CORNER



ACHIEVEMENTS

- Logeswari S.P, Manoj P.V, Aneesh P.K and Ramya Shree. V (2021-2025 Batch), have won **1st place** in the event “Paper Presentation” titled “A Novel Sustainable Starch-based Flexible Film for Packaging Applications”, organized by Chemflux’24, a National Level Technical Symposium on 21-23 February 2024, at SRM University, Chennai.



- Ramya Shree. V, Aneesh P.K, Manoj P.V, and Logeswari S.P, (2021-2025 Batch), have won **1st place** in the event “Poster Presentation” titled “An Eco-Benign Novel Light Weight Hybrid Biocomposites for Automotive Applications”, organized by Chemflux’24, a National Level Technical Symposium on 21-23 February 2024, at SRM University, Chennai.



ACHIEVEMENTS

- **Manoj P.V, Aneesh P. K Logeswari S.P, and Ramya Shree. V** (2021-2025 Batch), have won 1st place in the event “**Paper Presentation**” titled “A Sustainable Packaging Solutions for Single Use Plastic”, organized by SIMATS, Quantum Techfest, a National Level Technical Symposium on 23rd February 2024, at Saveetha University, Chennai.

Supervisor : Dr. S. Shamshath Begum



- **S. Ajeer, Mohammad Mazood, A. Riyaz Khan, and Ms. J.N. Kursheed Sulaiha**, (2020-2024 Batch), oral presentation titled “Characterization Studies of *Sepia officinalis* Bone Powder’s Synergistic Effect with Aluminium Hydroxide in the Improvement of Flame Retardancy in Flexible Polyurethane Foam”, 3rd International Conference on Materials Science & Engineering (ICMSE-2023), (23-25th November 2023), Dr B.R. Ambedkar National Institute of Technology Jalandhar, India.

Supervisor : Dr. S. Shamshath Begum

ACHIEVEMENTS

- **M. Mohammed Mazood, S. Ajeer, A. Riyaz Khan, J.N. Kursheed Sulaiha, (2020-2024 Batch), oral presentation titled, “Eco-friendly Hybrid Bio-composite Materials for Materials Engineering”, National Conference on Functional Materials for Sustainable Energy & Information Technology (FuMSEIT-2023), (27-28th November 2023), BSACIST, Chennai, India, pp. 100, ISBN: 978-93-92892-88-2.**
Supervisor : Dr. S. Shamshath Begum
- **J.N. Kursheed Sulaiha, A. Riyaz Khan, M. Mohammed Mazood, S. Ajeer, (2020-2024 Batch) poster presentation titled, “Sustainable polymer reinforced with innovative filler: preparation and characterization”, National Conference on Functional Materials for Sustainable Energy & Information Technology (FuMSEIT-2023), (27-28th November 2023), BSACIST, Chennai, India, pp. 103, ISBN: 978-93-92892-88-2.**
Supervisor : Dr. S. Shamshath Begum
- **B. Raja Sundar (2021-2025 Batch) won 1st place in the event “Paper Presentation” titled “Polymer in Bio-medical Application” on 26 September 2023 at Madras Medical College, Chennai.**

ACHIEVEMENTS

- **Aneesh P.K, Logeswari S.P, Manoj P.V, and Ramya Shree. V** (2021-2025 Batch), have won **1st place** in the event “**Paper Presentation**” titled “**A Study on Characteristics of Sustainable Natural Rubber Composites incorporated with Novel Biochar**”, organized by **ELASTOPLAZ 2024**, a National Level Technical Symposium on 16th March 2024, at Madras Institute of Technology, Anna University, Chennai.

Supervisor : Dr. S. Shamshath Begum



- **Logeswari S.P** (2021-2025 Batch), have won **1st place** in the event “**Technical Debate**” on the topic “**Rubber plantation leads to deforestation for and against**”, organized by **ELASTOPLAZ 2024**, a National Level Technical Symposium on 16th March 2024, at Madras Institute of Technology, Anna University, Chennai.



ACHIEVEMENTS

- **Logeswari S.P, Gokul T, Mohamad Ashfack K.I** (2021-2025 Batch), have won **1st place** in the event “**Product Decoding**”, organized by ELASTOPLAZ 2024, a National Level Technical Symposium on 16th March 2024, at Madras Institute of Technology, Anna University, Chennai.



- **Deepak. D** (2020-2024 Batch), won **1st place** in the event “**Just a Minute**”, organized by ELASTOPLAZ 2024, a National Level Technical Symposium on 16th March 2024, at Madras Institute of Technology, Anna University, Chennai



ACHIEVEMENTS

- **Amjath Khan .J** (2021-2025 Batch) won **1st place** in the event **“Polypix (Photography Contest)”**, organized by ELASTOPLAZ 2024, a National Level Technical Symposium on 16th March 2024, at Madras Institute of Technology, Anna University, Chennai.



- **Ramya Shree .V, Manoj P.V, Logeswari S.P, Aneesh P.K** (2021-2025 Batch), have won **2nd place** in the event **“Idea Presentation”** titled **“A Study on Preparation and Characterisation of Self-healing Rubbers”**, organized by ELASTOPLAZ 2024, a National Level Technical Symposium on 16th March 2024, at Madras Institute of Technology, Anna University, Chennai.

Supervisor : Dr. S. Shamshath Begum



ACHIEVEMENTS

- **Jai Ganesh . R**, (2020-2024 Batch) won **2nd place** in the event **“Technical Quiz”** organized by **ELASTOPLAZ 2024**, a National Level Technical Symposium on 16th March 2024, at Madras Institute of Technology, Anna University, Chennai



- **Logeswari S.P**, (2021-2025 Batch), have won **Young Scientist Position** organized by **Central Institute of Petrochemicals Engineering and Technology (CIPET)**, Chennai, “**CIPOFEST-2024**”, a National Level Technical Symposium on 5th April 2024.



ACHIEVEMENTS

- Logeswari S.P, Manoj P.V, Aneesh P.K, and Ramya Shree. V (2021-2025 Batch), have won **runner position** in the event **“Paper Presentation”** titled “A Novel Sustainable Hybrid Biocomposites from Agricultural Wastes”, organized by “CIPOFEST-2024”, a National Level Technical Symposium on 5th April 2024, at Central Institute of Petrochemicals Engineering and Technology (CIPET), Chennai.

Supervisor : Dr. S. Shamshath Begum



FINAL YEAR PROJECT DETAILS

S. No	RRN	Name of the Student	Faculty	Topic of the Project
1.	200131601001	AJEEER (Apollo Tyres)	Dr. S. Shamshath Begum	Studies on the Reinforcing Effect of Recycled Material Into Natural Rubber For Truck Tire Component
2.	200131601002	DEEPAK (Apollo Tyres)	Dr. S. Shamshath Begum	Effect of Ageing on Viscoelastic Properties of Tyre Thread Compounds
3.	200131601003	Ragamath Rughi	Dr. J. Shahitha Parveen	Development And Characterization Of Polyvinyl
	200131602011	Suireiliu Kamei		Alcohol (PVA) – Based Hydrogel With Long Term Biocompatibility for Skin Wound Repair
	200131602013	Thingujam Lishimondy		
4.	200131602016	Yokes. K	Dr. J. Shahitha Parveen	Development of Biocomposite PLA/PEG Films incorporating Sustainable Fillers For Packaging Application
	200131602004	Kennedy Laishram		
	200131602014	Uvaraj .B		

FINAL YEAR PROJECT DETAILS

S.No	RRN	Name of the Student	Faculty	Topic of the Project
5.	200131602003	Jaiganesh .R	Mrs. R. Daulath Banu	Study on Epoxy Based Bio Hybrid Composite for Automobile Applications
	200131602012	Thanveer Muhammad.M		
	200131601004	Ragunath		
	200131601005	Syed Yasir Sohail		
6.	200131602007	Mohammad Mazood (Apollo Tyres)	Dr. S. Shamshath Begum	Exploring the Concept of Pre-crosslinking Powder Rubber on Tire Performance
7.	200131602005	Kursheed Sulaiha .J. N (Apollo Tyres)	Dr. S. Shamshath Begum	Investigation of Sustainable Material In Tire Compound
8.	200131602009	Riyaz Khan. A (Apollo Tyres)	Dr. S. Shamshath Begum	Study of Optimization of Formulation of Natural Rubber Reinforced With Silica For Low Rolling Resistance Tyres

FINAL YEAR PROJECT DETAILS

S.No	RRN	Name of the Student	Faculty	Topic of the Project
9.	200131602001	Akhil Mohamed .M.S	Dr. Basanta Kumar Behera	Studies on Mechanical and Viscoelastic Characteristics of Basalt Fiber Reinforced PC/ABS Biocomposites prepared by 3D Printing
	200131602006	Maanish Raaj .B		
	200131602010	Roshan Kumar. L		
	200131602017	Yugesh. P. J		
10.	200131602002	Harish .R	Dr. Basanta Kumar Behera	Study of Mechanical And Viscoelastic Properties of ABS/Coir Fibre/Basalt Fiber Biodegradable Hybrid Composite For Automotive Applications
	200131602008	Mokith Raaj		
	200131602015	Victor Immanuel		

INDUSTRIAL INTERNSHIPS

RRN	Name	Industry name	Place	Duration
210131601011	Logeswari S. P	JK Fenner India limited	Sriperumbudur	24-06-24 to 08-07-24
210131601012	Mohammed Ashfack K.I	polyhose india pvt ltd	Kelambakkam	8-07-24 to 23-07-24
210131601015	Manoj P.V	JK Fenner India limited	Sriperumbudur	24-06-24 to 08-07-24
210131601013	Ramya Shree .V	JK Fenner India limited	Sriperumbudur	24-06-24 to 08-07-24
210131602006	Keerthivasan V .R	CEAT Tyres	Sriperumbudur	24-06-24 to 08-07-24
210131601002	Aneesh P .K	JK Fenner India limited	Sriperumbudur	24-06-24 to 08-07-24
210131602012	Sakthisurya . M	CEAT tyres	Sriperumbudur	24-06-24 to 06-07.2024
210131601009	M. Kalaiselvi	UNO Minda limited	Irungattukottai	12-06-24 to 26-06-24
210131601010	P. Keerthana	UNO Minda limited	Irungattukottai	12-06-24 to 26-06-24
210131601006	Daniel C .G Jospher	UNO Minda limited	Irungattukottai	12-06-24 to 26-06-24

INDUSTRIAL INTERNSHIPS

RRN	Name	Industry name	Place	Duration
210131601002	Aneesh P . K	JK Fenner India limited	Sriperumbudur	24-06-24 to 08-07-24
210131602012	Sakthisurya .M	CEAT tyres	Sriperumbudur	24-06-24 to 06-07-24
210131601009	M. Kalaiselvi	UNO Minda limited	Irungattukottai	12-06-24 to 26-06-24
210131601010	P. Keerthana	UNO Minda limited	Irungattukottai	12-06-24 to 26-06-24
210131601006	Daniel C .G Jospher	UNO Minda limited	Irungattukottai	12-06-24 to 26-06-24
210131601014	Amjath Khan. J	Polyhose India Pvt. Ltd	Kelambakkam	08-07-24 to 23-07-24
210131602002	Amal .V Varghese	Sri Ramkarthic Polymers Pvt Ltd .	Coimbatore	01-07-24 to 13-07-24
210131601002	Aneesh P .K	JK Fenner India Limited	Sriperumbudur	24-06-24 to 08-07-24
210131602012	Sakthi Surya .M	CEAT tyres	Sriperumbudur	24-06-24 to 06-07-24

INDUSTRIAL INTERNSHIPS

RRN	Name	Industry name	Place	Duration
220131601001	Anandu Sunil	Yokohama tyres	Tirunelveli	24-06-24 to 08-07-24
220131601002	Dhandayuthapani .R	Yokohama tyres	Tirunelveli	24-06-24 to 06-07-24
220131601003	Hari Ram Prasad . K	PKV Polimers	Namakkal	12-06-24 to 26-06-24
220131601004	Lekashree	Wintech Polysol	Thirumudivakkam	18-06-24 to 05-07-24
220131601005	Mohamed Fazil	Modern Pipes industries	Palladam	15-06-24 to 29-06-24
220131601006	Muhammad Sheik Razeen	Sri Krishna Polymers	Ambattur	26-06-24 to 11-07-24
220131601007	Musthaq Naina	Modern Pipes Industries	Palladam	19-06-24 to 04-07-24
220131601008	Naveen Arockia Josuva	Sivasankar Automation	Coimbatore	18-6-24 to 03-07-24

INDUSTRIAL INTERNSHIPS

RRN	Name	Industry name	Place	Duration
220131601010	Ragul Ganesh	Allwin Pipes	Erode	25-06-24 to 10-07-24
220131601009	Praveen	Morden Pipes Industries	Palladam	20-6-24 to 04-07-24
220131601012	Tawfeequr Rahman	Modern Pipes Industries	Palladam	19-6-24 to 04-07-24
220131601013	Tharik Azees	PKV Polimers	Namakkal	12-06-24 to 26-06-24
220131601014	Vigneshwaran	Modern Pipes Industries	Palladam	15.06.24 to 29.06.24
220131602001	Gladwin	Naveen Rubber Products	Coimbatore	18-06-24 to 03-07-24
220131602002	Gugapriyan	PKV Polimers	Namakkal	16-06-24 to 03-07-24
220131602006	Nirmal Rajan M.N	Modern Pipes Industries	Palladam	15-06-24 to 29-06-24

INDUSTRIAL INTERNSHIPS

RRN	Name	Industry name	Place	Duration
220131602007	Siddarthan	RMBS Enterprises	Seneerkuppam	08-07-24 to 13-07-24
220131602010	Taherunnisa .P	Dolphin rubber industry	Vizag	18-06-24 to 03-07-24
220131602011	Sindhanai Chelvan	PKV Polimers	Namakkal	12-06-24 to 26-06-24
220131602012	Shubhash	Naveen Rubber Products	Coimbatore	18-06-24 to 03-07-24

PLACEMENT (2020-2024 Batch)

Sl. No.	Register No.	Name	Name of the Company	Position
1.	200131601001	Ajeer .S		Entrepreneur
2.	200131601002	Deepak	Apollo Tyres Ltd Chennai	Intern – Passenger Car Radial
3.	200131601003	Ragamath Rughi	Polyhose India Private Ltd Sipcot Industrial Park Irringungattukottai Sriperumbudur Kancheepuram	GET(Trainee) – R&D
4.	200131601004	Ragunath	Higher Studies–CIPET, M.Tech Chennai	Plastics Technology
5.	200131601005	Syed Yasir Sohail		Entrepreneur
6.	200131602001	Akhil Mohamed M . S	SKAPS Industries India Pvt.Ltd (Chennai Division) – Oragadam, Kanchipuram District	Jr.Engineer Design
7.	200131602002	Harish. R	Vignesh Polymers India Pvt. Ltd.	GET - Production
8.	200131602003	Jaiganesh. R	Sciechem Limited, Puduchery	Intern
9.	200131602004	Kennedy Laishram	SKAPS Industries India Pvt.Ltd (Chennai Division) – Oragadam, Kanchipuram District	Jr.Engineer Design

PLACEMENT (2020-2024 Batch)

Sl. No.	Register No.	Name	Name of the Company	Position
10.	200131602005	Kursheed Sulaiha J. N	Apollo Tyres Ltd, Chennai	Executive
11.	200131602006	Maanish Raaj. B		Entrepreneur
12.	200131602007	Mohammad Mazood	Apollo Tyres Ltd, Chennai	GET – (Plant Technology)
13.	200131602008	Mokith Raaj	SKAPS Industries India Pvt.Ltd (Chennai Division) – Oragadam, Kanchipuram District	Jr. Engineer Design
14.	200131602009	Riyaz Khan .A	Apollo Tyres Ltd Chennai	GET – (Plant Technology)
15.	200131602010	Roshan Kumar L	SKAPS Industries India Pvt.Ltd (Chennai Division) – Oragadam, Kanchipuram District	Jr. Engineer Design
16.	200131602011	Suireiliu Kamei	Apollo Tyres Ltd, Chennai	Intern – Compound Development
17.	200131602012	Thanveer Muhammad.M	JK Fenner (India) Ltd Madurai	Graduate Engineer Trainee – Rubber Mill
18.	200131602013	Thingujam Lishimondy	Hwaseung Materials (India) Private Limited Thandalam Post Sriperumbudur Kancheepuram	Graduate Engineer Trainee – Development Department
19.	200131602014	Uvaraj.B	Hwaseung Materials (India) Private Limited Thandalam Post Sriperumbudur Kancheepuram	Graduate Engineer Trainee – Development Department

PLACEMENT (2020-2024 Batch)

Sl. No.	Register No.	Name	Name of the Company	Position
20.	200131602015	Victor Immanuel	Higher Studies, IIUCNN, M.G. University, Kerala	M.Tech, Polymer Science and Engineering
21.	200131602016	Yokesk. K	Apollo Tyres Ltd. Chennai	GET – (Plant Technology)
22.	200131602017	Yugesh.P.J	Higher Studies	

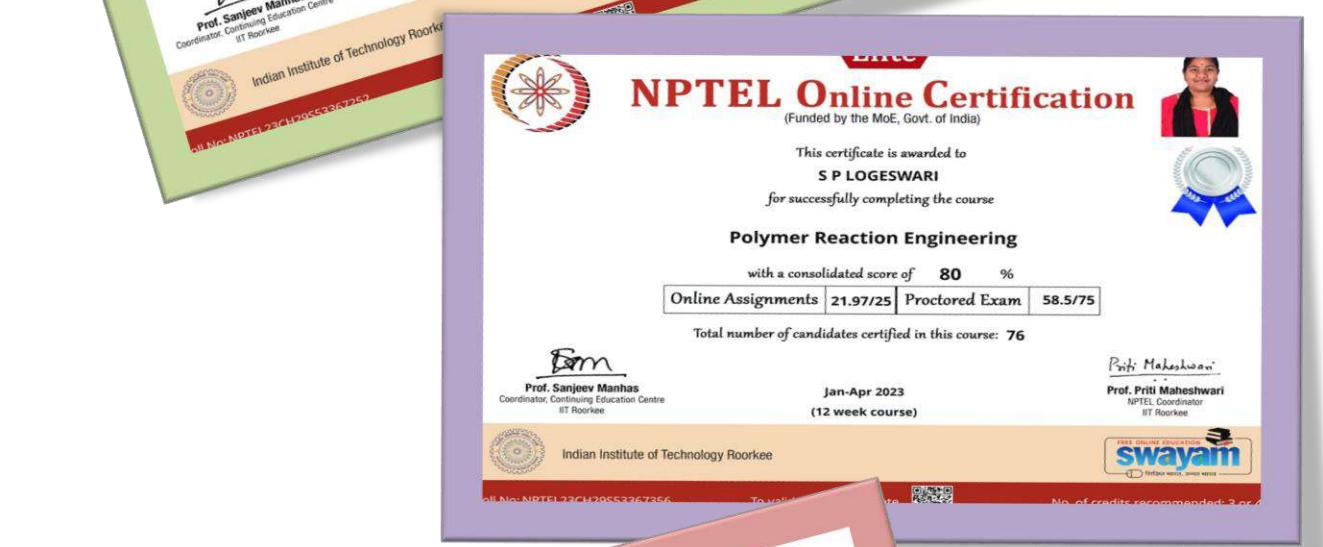
NPTEL CERTIFICATIONS

RRN	Name	Course & Credit	Duration	Grade Point
220131601005	Mohamed Fazil	Polymer Reaction Engineering & 4 credits	12 Weeks	Elite
210131601011	Logeswari S .P	Polymer Reaction Engineering & 4 credits	12 Weeks	Elite
210131601011	Logeswari S .P	Rheology and Processing of Paints, Plastics and Elastomer based Composites & 3 credits	8 Weeks	Elite
210131601011	Mohammed Ashfack.K.I	Rheology and Processing of Paints, Plastics and Elastomer based Composites & 3 credits	8 Weeks	Elite
210131601015	Manoj P.V	Polymer Reaction Engineering & 4 credits	12 Weeks	Elite
210131601014	Amjath Khan J	Polymers: Concepts, Properties, Uses and Sustainability	12 Weeks	Elite

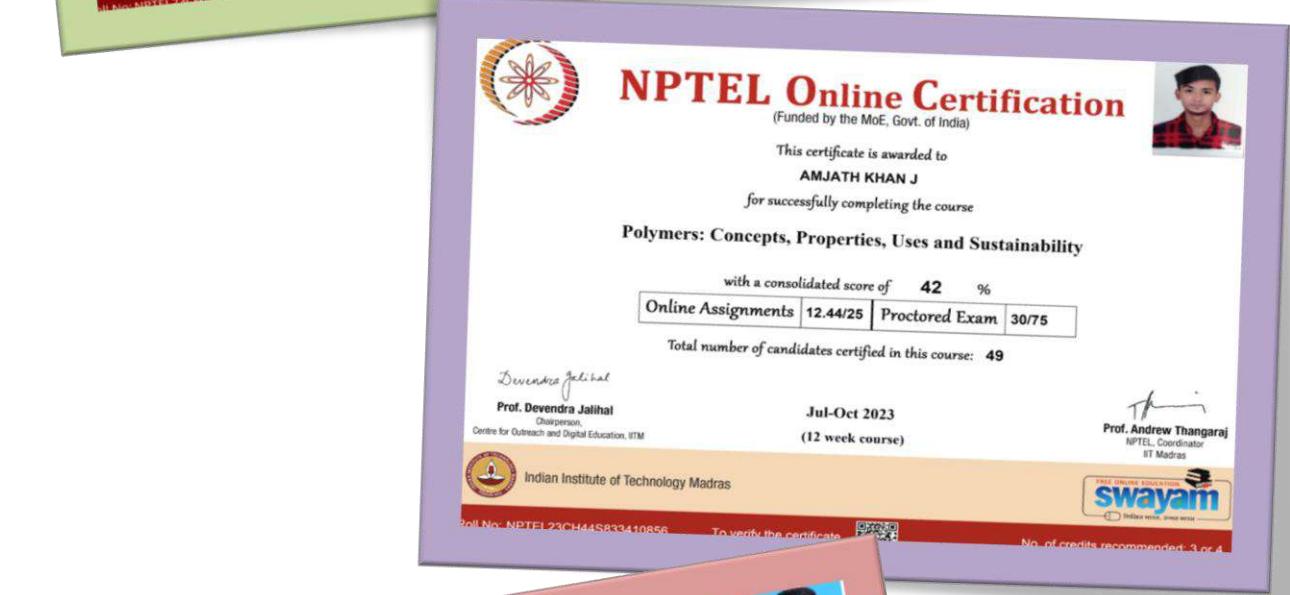
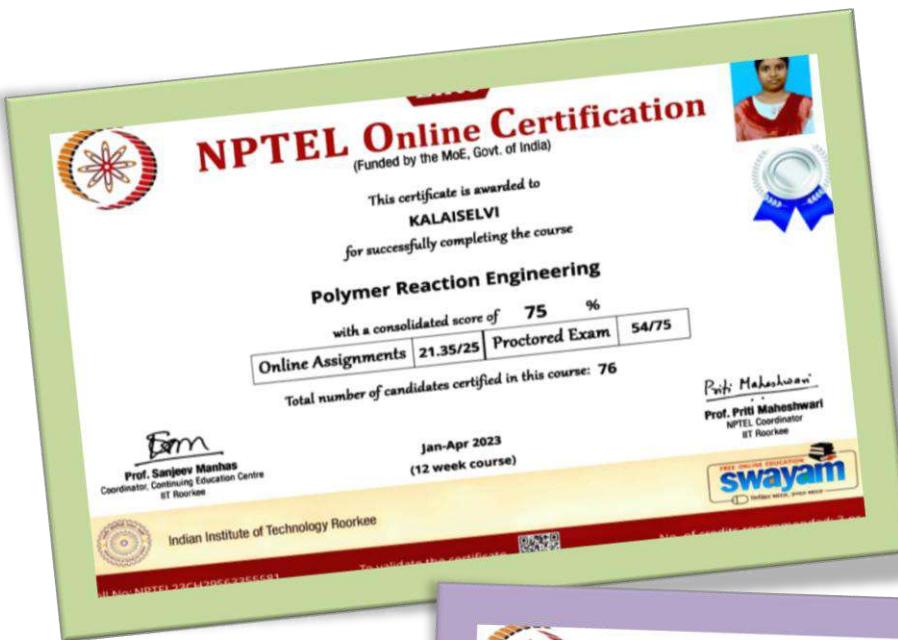
NPTEL CERTIFICATIONS

RRN	Name	Course & Credit	Duration	Grade Point
210131601002	Aneesh P .K	Polymer Reaction Engineering & 4 credits	12 Weeks	Elite
210131601002	Aneesh P .K	Rheology and Processing of Paints, Plastics and Elastomer based Composites & 3 credits	8 Weeks	Elite+Silver
210131601009	M.Kalaiselvi	Rheology and Processing of Paints, Plastics and Elastomer based Composites & 3 credits	8 Weeks	Elite
210131601009	M.Kalaiselvi	Polymer Reaction Engineering & 4 credits	12 Weeks	Elite + Silver
210131601006	C. Daniel	Polymers: Concepts, Properties, Uses and Sustainability	12 Weeks	-
210131601007	Gokul. T	Rheology and Processing of Paints, Plastics and Elastomer based Composites & 3 credits	8 Weeks	Elite + Silver

NPTEL CERTIFICATIONS



NPTEL CERTIFICATIONS



FIELD VISITS / INDUSTRIAL VISITS ORGANIZED BY THE DEPARTMENT

S.No	Participant Details			Name of Faculty involved	Industry Visited	Date of Visit
	Programme	Sem	No.of Students			
1.	Industrial Visit	IV & VIII	32	Dr.J.Shahitha Parveen Mrs.R.Daulath Banu	STAHL India Pvt. Ltd. Kancheepuram	02-05-2024
2.	Industrial Visit	VI	26	Dr. Basanta Kumar Behera	Madras Hard Tools Pvt Ltd.	21-02-2024
3.	Industrial Visit	IV	22	Mrs. R. Daulath Banu	Polyhose Industries, Chennai	11-10-2023
4.	Industrial Visit	III & V	42	Dr. J. Shahitha Parveen Mrs. R. Daulath Banu	Nilkamal Limited, Pondicherry	01-08-2023

FIELD VISITS / INDUSTRIAL VISITS ORGANIZED BY THE DEPARTMENT IN THE ACADEMIC YEAR



Polyhose Industries, Chennai



STAHL India Pvt. Ltd. Kancheepuram

FIELD VISITS / INDUSTRIAL VISITS ORGANIZED BY THE DEPARTMENT



Madras Hard Tools Pvt Ltd.

STUDENTS PROJECTS

Ajeer. S, Mohammad Mazood. M, Riyaz Khan. A and Kursheed Sulaiha. J. N, students of final year (2020-2024 Batch) published a paper on improving the flame retardancy of flexible polyurethane foam under the guidance of Dr. S. Shamshath Begum.



Available online 24 May 2024

In Press, Corrected Proof

Characterization studies of *Sepia officinalis* Bone Powder's synergistic effect with aluminum hydroxide in the improvement of flame retardancy in flexible polyurethane foam

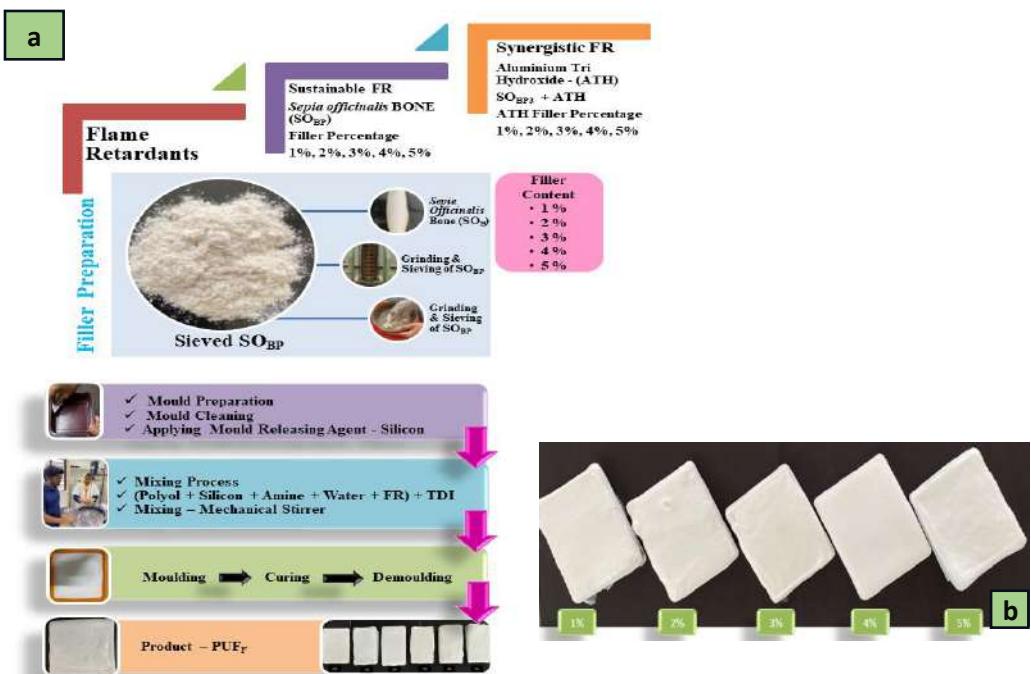
S. Ajeer^a, M. Mohammed Mazood^a, A. Riyaz Khan^a, J.N. Kursheed Sulaiha^a, S. Shamshath Begum^a, Asit Baran Samui^b

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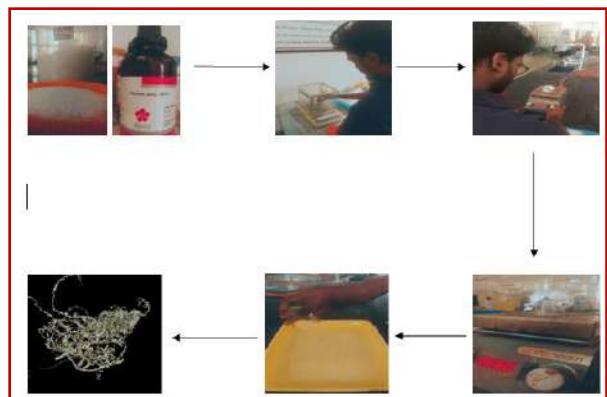
<https://doi.org/10.1016/j.mechpr.2024.05.329>

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STUDENTS PROJECTS

Simplifying Fiber Extraction Process



In the realm of fibre extraction, traditional methods such as Melt Spinning, Wet Spinning, Dry Spinning, Gel Spinning, and Electro Spinning have long been the standard. These techniques, while effective, demand complex machinery, significant maintenance, and substantial labor, making the process costly and cumbersome. However, we, Aneesh P.K, Gokul T, Mohammed Ashfack K.I, and Amjath Khan J have developed an innovative approach that simplifies fibre extraction, making it accessible and cost-effective.

Our project introduces a novel technique for fibre extraction that drastically reduces complexity. By utilizing a suitable solvent and water, we can cast fibres on a lab scale without the need for intricate machinery or elaborate procedures. This method not only cuts down on equipment costs and maintenance but also minimizes labor requirements, making fibre extraction more efficient and practical.

We believe this breakthrough has the potential to revolutionize the field, offering a straightforward, scalable solution for fibre production that could benefit a wide range of applications.

STUDENTS PROJECTS



Lotus Fiber Composite for Wound Care



Lotus fiber, often known as lotus silk or lotus fabric, is a rare and luxurious material extracted from the stems of the lotus plant (*Nelumbo nucifera*). The traditional extraction process is intricate and labor-intensive, involving careful harvesting, delicate filament extraction, and meticulous hand-spinning. Despite its high value, this process demands significant skill and time, reflecting the fiber's esteemed status for its exceptional softness, breathability, and hypoallergenic properties.

We, Kalai Selvi and Keerthana have developed an innovative approach to simplify the use of lotus fiber for practical applications, particularly in wound care. Our method streamlines the traditional process, making it more accessible while preserving the fiber's high-quality attributes. The process begins with harvesting mature lotus stems from their natural habitats, such as lakes and ponds, during early morning hours for optimal moisture content. The resulting lotus fiber composite is ideal for use in wound care, combining the natural benefits of lotus fiber with the durability of the resin. This composite material is particularly suited for sensitive skin due to its hypoallergenic and antimicrobial properties, while its breathable nature ensures comfort and promotes healing.



STUDENTS PROJECTS

Blending of Polystyrene (PS) and Polyethylene Glycol (PEG) with Natural Fillers for Enhanced Food Packaging



The research conducted by Mohamed Fazil, Ragul Ganesh, and Kiran highlights the potential for creating more sustainable and effective food packaging solutions, advancing the field of environmentally conscious material science. The pursuit of sustainable and effective food packaging materials has driven substantial research into the integration of conventional polymers with natural fillers. This research investigates the potential of blending Polystyrene (PS) and Polyethylene Glycol (PEG) with various natural fillers to enhance the properties of food packaging materials. Our focus is on the synergistic effects achieved by incorporating fillers such as ground wood chunks, ground coconut husk, and filtered coffee powder into PS and PEG matrices. The findings suggest that blending PS and PEG with natural fillers presents a promising approach to developing eco-friendly food packaging materials. This method not only enhances the performance of the packaging but also aligns with environmental goals by incorporating renewable resources and reducing reliance on purely synthetic materials.

STUDENTS PROJECTS

Comparative Analysis of Natural and Glass Fiber Reinforcement in Resins

Sustainable and high-performance materials has spurred interest in utilizing natural fibers such as coconut and glass as reinforcements in polymer composites. This study delves into the innovative technique of fiber dipping in various resin matrices, including thermoplastic, thermoset, and latex. By exploring the interactions between these natural fibers and different resin systems, we aim to uncover novel insights into the resulting material properties. Through meticulous experimentation and analysis, this research endeavors to elucidate the potential applications and advantages of coconut and glass fiber-reinforced composites across diverse industries. Analysing the moisture test , tensile test , water absorption test. Aim to develop the sustainable material with mechanical and adhesive properties between the natural fiber and resin.

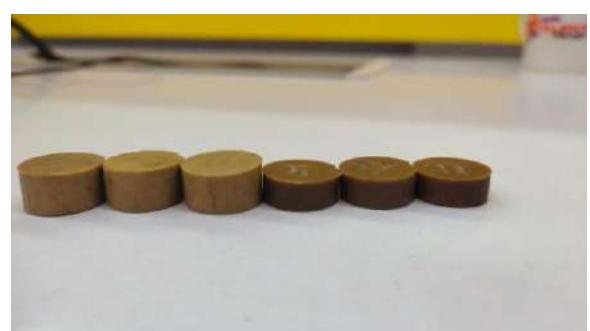


STUDENTS PROJECTS

Exploring the Concept of Pre-Cross-linked Powder Rubber on Tire Performance



I'm M. Mohammad Mazood from the department of Polymer Engineering, 2024 Batch. I have completed internship come project in Apollo Tyres Global Research and Development Asia, Chennai. My project was focused on rubber compounding whereas study of pre cross-linked styrene butadiene polymer and its effect of divinylbenzene crosslinking agent in SBR for improve the abrasion and rolling resistance of the tire.



STUDENTS PROJECTS

Curing Characteristics of Thermoset Resin



We (Anandu sunil, Naveen Arokia Joshua, Tharik Azees and Nirmal Rajan) the students of Polymer Engineering department, did a project to explore the effects of incorporating curatives into thermoset resins at different percentage levels. Thermoset resins play a pivotal role in numerous industries owing to their exceptional mechanical properties and chemical resistance. The addition of curatives offers a promising avenue for further enhancing these properties. We found that the addition of curatives in thermoset resins has a significant impact on curing behaviour, mechanical properties, thermal stability, and chemical resistance. Optimal performance enhancements were observed at specific curative percentages, beyond which diminishing returns or adverse effects were also observed.



STUDENTS PROJECTS

Study on physical and chemical characteristics of SBR/ NBR blend



We (Razeen, Praveen, and Gugapriyan) developed a blend of SBR and NBR as our PBL work. The aim of this work is to improve the oil and chemical resistance of SBR by blending with NBR. We tried different ratios of SBR and NBR to compare the water adsorption, oil resistance and wear resistance of the prepared blend. This study helps us to understand the compatibility of polymers, rheological properties and testing characteristics.



EDITORS

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Associate Professor & HoD (i/c)



Mrs. J. Dafini
Visiting faculty

Student Co-ordinators



**Mr. Naveen Arockia
Josuva A**



Mr. Gladwin J



Ms. Lekashree Y

Third Years (2022-2026 Batch)



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