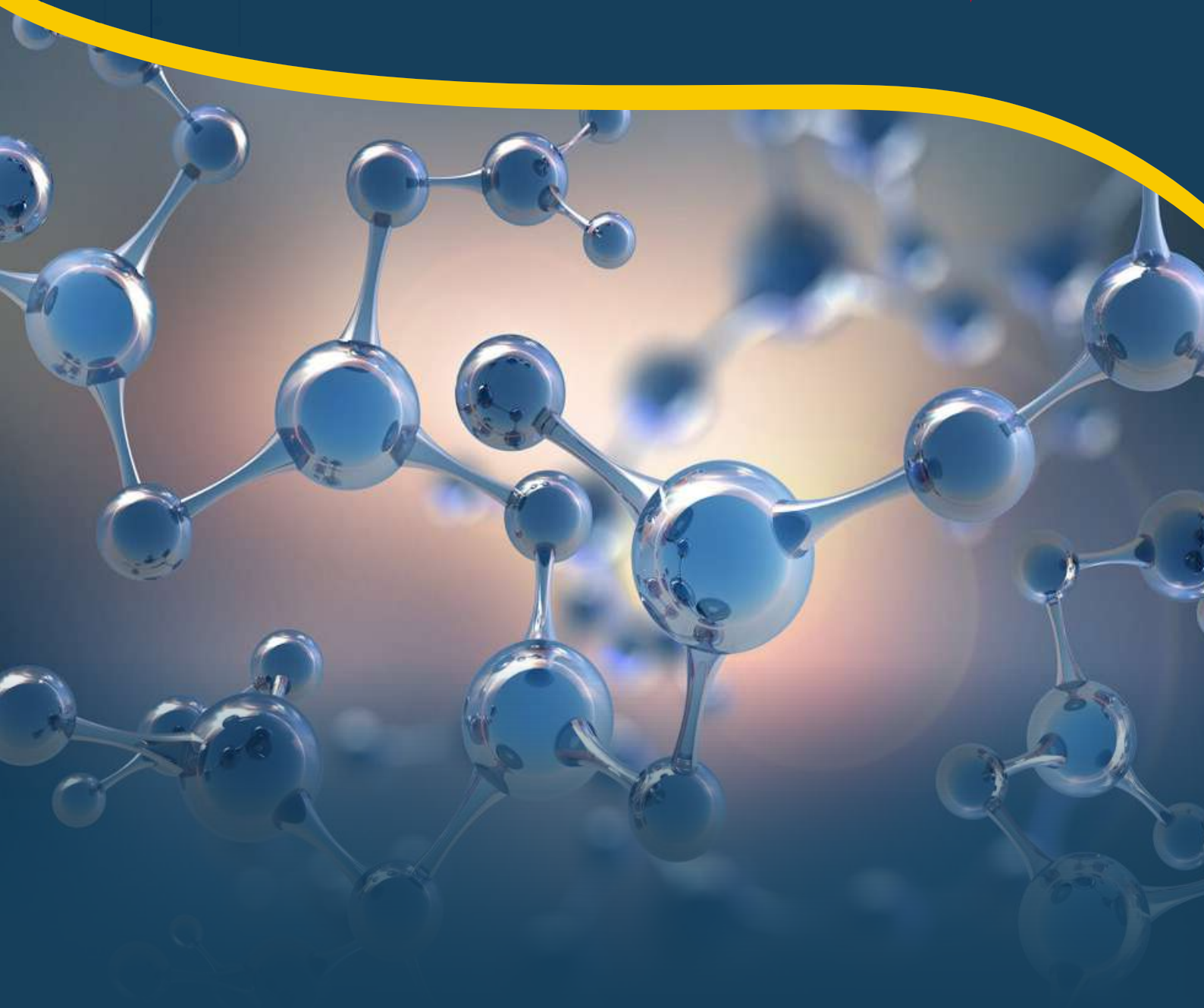
Issue | March 2024

PAWAPULSE



FIFTH EDITION

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For feedback on PAWA pulse, please get in touch with

Yashavantha Katte

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From the Desk of Chief Editor

My dear Reader of PawaPulse,

It has been one year since we published our last special edition with DPTcon 2023 which was held in 2023. It's my pleasure to bring out our annual edition of PAWAPULSE March 2024 where you would find the achievements and various activities conducted by PAWA and the contribution of PAWA for improvement of Polymer Technology Department. I sincerely thank all the members who got involved in the preparation and contributed to bring out this edition successfully. Inside PAWAPULSE March 2024, you would find the details of activities conducted in Polymer Technology Department, Scholarships awarded to meritorious students, Upgradation of existing polymer lab, inauguration of new polymer lab, visit of honorary chairman of Indian Rubber Institute to the DPT campus and MOM between IRI and DPT -KPT, DPTCon 2023, articles on tire industry analysis, Polymer Composites and Biometric Polymers and Stars of PAWA.

I wish all the members a happy reading.

Sincerely Yours,

Anil Pais

From the Editorial

Dear well-wishers of the "PawaPulse"

The period after last edition of PawaPulse which happened to be the one after the mega event has been already a year of rather dull compared to previous year full of buzz. But while comparing both the periods-pre & after-DPTcon, it is obvious that the year before the event was one full of expectations as well as endless challenges. It was a period when periodic quarterly editions of PawaPulse had also come out featuring the progress and the journey towards the event with other relevant inputs. Full team of office bearers and all Pawaites were involved in making the event a grand success story.

However, as we all are aware, the months following the event were quite dark and gloomy with lot of uncertainties like clearing the accounts, arranging AGM, electing new office bearers, resetting the PAWA, PAWT guidelines, renewing the registration accompanied by setting up the lab, side by side. In between all this, we have a land-mark of sorts by arranging a seminar by Dr Mukhopadhyay of HASETRI and signing a memorandum of Understanding between KPT-DPT & IRI.

At this juncture, though we are still in a position of uncertainty, it feels good to observe that there is some light end the end of the tunnel. With the renewal of registration through and revising few of the grey points of the Bye-laws, it will a period of consolidation now for all of us. The new team with the help of the predecessors wish to give the movement the PAWA, the much-needed charge. We are fortunate to have the strong back up in spirits as well as all material by our highly respected and beloved Principal Harisha Shetty in our endeavours.

In this annual edition (2023-24), we have tried to bring out all the travails and the achievements of the period with some focus on the prevalent situation too.

Looking forward to some encouraging vibes from one and all who take time to go through this e-PawaPulse.

Let's Polymerise more.

Gopalakrishna Bhat

From the desk of PAWA President

My Dear Pawa'ites

The year gone by has seen a lot of challenges in the economy and uncertain geopolitical situation in the world. We in PAWA are also not out of these situations. We faced multiple challenges but with the support of the governing council, advisory body and all the members of Polymer association we could celebrate grand DPT conference in 2023 February. With this event, we had also inaugurated a brand-new plastic laboratory with equipment donated by industrial training institute and refurbished by the support of polymer alumni welfare Association members. This is a great achievement in this year for the benefit of students. Now Polymer students can have practical knowledge of extrusion, blow moulding, injection moulding, various testing of plastic and composite materials. we had reasonably good gathering for the DPT Con -2023 and good financial support from people related to rubber and plastic industry. We thank everyone for the support they have provided. Of course, we cannot forget the support provided by the principal of KPT, officials of Department of technical education, officials of industrial training Institute and also the members of the industry, after this event we had a lecture from distinguished speaker Dr R Mukhopadhyay. He is the CEO of HASETRI and technical director of JK Tyre and Industries Ltd. He also occupies the position of chairman of all India rubber industries association and also Indian Rubber Institute. He enlightened the students and the fraternity of Rubber and Polymer with his lecture on sustainability and recycling for Polymer Well attended the program and during this time DPT signed MOU with Indian Rubber Institute for the benefit of student community. This will also give them opportunity to get trained under the guidance of Rubber skill development Centre.

we look forward active participation of members in conducting more and more activities at KPT for polymer students. PAWA again supported to the extension of lab area to have better space utilisation.

As outgoing President, I am happy & thank all the committee members for the whole hearted support provided in last 3 years to effectively support DPT. I wish & will always support the incoming President & team to have more improvement to the DPT, KPT Mangalore.

With this I wish all a Healthy year ahead & safe sailing

Best Regards,

Sriganesh U P

Stars of PAWA

Mr. Yashavantha Katte

It is an honour for us all PAWAites to herald such a down-to-earth but profoundly knowledgeable personality, Mr. Yashavantha Katte as one of our STARS OF PAWA.

Mr. Katte was born in Vittal (Vitla) of Bantwal district to Agriculturist Sri. Sesu Moolya Katte and Kalyani S. Katte.He completed his Primary and High School at Vittal itself. After passing out his matriculation, he joined then the newly started Diploma in Polymer Technology (Rubber) course at KPT Mangalore as one of the first students and finished with flying colours. After completing his diploma in polymer technology course from KPT, He started his work life at Cantreads Mangalore as a Shift Supervisor and worked there for three years. Later, he moved to Ponda, Goa and joined M/s Kavji Polymers as Production in charge where he worked there for two years. He joined MRF Limited Goa as Production supervisor attached to technical department worked for three years. In later years, he worked as production in charge with Sri Ram Sales, Kolhapur, Bond Elastomers and later as Director at Milind Tyre and Rubber Company Pvt Ltd, Kolhapur for sixteen long years. Thereafter, he had worked as GM (operations) at Mahant Industries for 10 years and later reached pinnacle of his career as the Consultant at Manjunath Tyre soles, Treads Pvt Ltd. Mangalore for six years. He had eventually retired after a super successful tenure of Total forty long years with major portion of this period being in Tyre , Tread and Retreading Material.

Mr. Katte has been blessed with two children son Bharath and daughter Shweta both of them are well settled.

Utilising his retired life very effectively by contributing first hand as well with lot of back hand inputs to PAWA, he has made these last 6-7 years of his life as much more meaningful for all of us,PAWAites.

Let us wish this silent crusader Mr. Katte, the Super Gentleman, much more satisfying and fulfilling social and family contentment in the coming years too.

Mr Yatheendra Gowda

Mr. Yatheendra Gowda, Son of Agriculturist Thyampanna Gowda & Gangamma of Sullia is someone who had seen and experienced the tastes of life almost at all angles. Mr. Gowda completed his primary education in Sullia. After completing his junior college in Sullia, He joined DPT (Rubber) at KPT and completed his diploma course in 1988. Later on, Hecompleted DIRI from Indian Rubber Institute, Kharagpur in 1995.

Mr. Gowda has a vast professional experience in various fields of rubber technology and has worked with M/S Elastomer Lining Works, Ambernath, Thane, Rubber Products, Thane, Vaid Elastomers Pvt Ltd, Thane, Prabhat Elastomers Pvt Ltd, Sarigam, Andra Polymers Pvt Ltd Hyderabad. He steadily climbed up the corporate ladder with his thirty six years of rich experience in polymer field. Currently he is working as Plant Head with M/s Avigiri Urethane and Rubber Industries Pvt Ltd – Tumkur.

In his illustrious career, he has exhibited commendable expertise in Molding of Rubber components, critical shape and process, Compounding for products used in Drinking water system, obtaining Approvals like WRAS, NSF 61, KTW, ACS etc. Further, he has successfully developed and productionised fire-retardant profiles and components (EN 45545-2).

A well-respected gentleman to the core, Mr. Yatheendra Gowda is not only a successful PAWAite, he is equally an inimitable and adorable personality too.

Let us wish him many more years of successful work life of name and fame.

Mr. Rajesh Rao

It is time to introduce and extol the phenomenal achievements of one more PAWAite, the ever smiling gentleman, Sri. Rajesh Rao, Padubidri. Born in Padubidri, Udupi Dist. to a businessman Father Ramesh Rao & Mother Sridevi Rao, Rajesh did his Primary & secondary Schooling at Padubidri, PUC at Vijaya college Mulki and later he had completed his Diploma in Polymer Technology (Rubber) at Karnataka Polytechnic Mangalore by Dec 1992. He also secured his MBA degree from Alliance University, Bangalore.

Rajesh Rao started his career in Apr 1993 with Shangrila Latex Pvt Ltd, Olpad, Surat. After working there for about a year, he moved onto APOLLO TYRES Limda, Baroda, worked as Trainee Supervisor to Officer QTech for 8 years, then moved to JK TYRE - Vashi, Navi Mumbai as Sr. Officer Technical Services. Then BKT TYRES, HO Mumbai as Area Sales & Service Manager, West Region. Further, he joined DARMEX SA as Manager Sales & Tech Support, India & Sri Lanka, followed by MILLIKEN Chemical & Textile India as Manager Sales & Tech Support, India & Sri Lanka. Moving on, he had scaled to the position of General Manager - Sales, South Region, in India's largest private sector corporation, M/s. RELIANCE INDUSTRIES LTD – Elastomer Division. And since Aug 2020, he has been working with M/s. BERATEX GERMANY, as Country Head India. It is our pleasure to announce and congratulate him here on his latest Promotion as Head Sales & Technical Support, Asia & Middle East in March 2024.

Being associated with various Elastomer/Tyre related industries for the last 31 Years, Rajesh Rao has nurtured Expertise in areas of multi-faceted strength and Servicing, Technical Services Operations, Techno-commercial Operations,

Distribution Management, Product Promotions, Inventory Management & Logistics. His hobbies include Photography, Drama & Singing. He has a complete Family with Wife Chandrika Rao and two Sons Hrishikesh Rao & Anish Rao who are studying now.

It is our good fortune that despite his busy and demanding work life, Rajesh Rao has been actively participating and contributing in best possible way in all our PAWA endeavours right from its inception in 2015.

Let us all join hands in appreciating his successful journey in his career and wish him many more accolades in his future efforts too.

Activities Carried out for improvement of DPT–KPT Campus by PAWA

Needless to say, that PAWA has been actively participating on the improvement of Diploma In Polymer Technology on several areas for the last few years. This could be possible only due to active participation of some of the core members of PAWA and KPT Campus faculty namely the honourable Principal, Head of the Polymer Technology department, and lecturers of Polymer Technology Department. The Improvement has been done on several areas like infrastructure such as upgrading polymer labs with refurbishing machineries, guiding students for higher education after completion of diploma, facilitating them to career enhancements, introducing them to polymer industry fraternity, helping to get the job opportunities, awarding scholarships to financially poor academically excellent students, conducting seminars, training programs in various topics related to polymer technology by highly experienced PAWA members.

Some of the activities conducted in DPT – KPT campus by PAWA.

- **Conducted Polymer Conference called DPTcon 2023 on 25th February,2023. The Main purpose of the conference was to induct the polymer students to the new technologies in the polymer industry, Discussion about various topics related to polymer technology, raising funds to upgrade the polymer lab by industry sponsorship. The DPTcon 2023 was a grand success with online live telecast of the event by the local channel. The experts in polymer industry gave talks on biodegradable polymers by Dr. Ajay Karmakar, Recycling of Vulcanized Rubber Scrap by devulcanization process by Dr. S.M.Shetty, Polymer Materials in modern electric vehicles by Er. Vijaya Kumar Shetty, Role of Polymers in Construction chemicals and new trends and innovation in Construction chemicals by Er. Sandeep Shetty, About Polyurethane and its applications by Tulasi Chandra Thejaswi, Basics of Rubber Technology and Rubber Mixing Technology by**

Dr M.N.Aji. The students had a very good interaction during these talks. The refurbished lab inaugurated by PAWA and KPT faculty and The Principal during DPTcon 2023.

- Memorandum Of Understanding (MOU) between Indian Rubber Institute (IRI) and Department of Polymer Technology – KPT, Mangaluru. Dr R. Mukhopadhyaya, the honourable chairman of IRI visited DPT-KPT campus along with PAWA members Mr. S. Vasudeva Rao and Mr. Sriganesh on 12th and 13th of October,2023.

  The MOU signed by Honourable Principal of Karnataka Polytechnic Mr. Harisha Shetty and the honourable Chairman of IRI Dr. R. Mukhopadhyaya on 12th of October,2023 with the aim of benefiting students through collaborative initiatives. The collaboration between the Indian Rubber Institute and the Polymer Technology Department of Karnataka Government Polytechnic stems from the shared commitment to advancing knowledge and skills in the field of rubber and polymer Technology. The strategic partnership aims to foster academic and industry collaboration, providing students with practical exposure to real-world applications, skill development.

IRI devices an institution with the knowledge and expertise in providing the dissemination of knowledge of all aspects of Rubber Science and Technology by holding meetings, seminars, workshops, short term courses, conferences, discussions, lectures and the publication of papers, periodicals, books, etc and DPT of KPT , with its glorious excellence and contributions to SKILL DEVELOPMENT commit themselves to join hands with IRI for enhancing skill development in rubber science & technology sector by jointly setting up a Rubber Technology Training and Skill Development activities in rubber, chemical and petro chemical sector for the benefit of the students, research scholars and technologists across the country.

The DPT-KPT will serve as a national referral hub in collaboration with IRI-DBCOE for organizing workshops, demonstrations, symposia and structured training programs on Rubber Science and Technology for academia, industry and on different job roles / qualification pack developed by 'Rubber, Chemical & Petrochemical Skill Development Council (RCPSDC)' under National Skill Development Corporation (NSDC).

The MoU between the Indian Rubber Institute and the Polymer Technology Department at Karnataka Government Polytechnic represents a significant step toward enriching the educational experience of students. The collaborative efforts outlined in the MOU aim to bridge the gap between academia and industry, providing students with the skills and knowledge necessary for success in the field of rubber and polymer technology.

Contributions and expenses of PAWA to the Department of Polymer Tecnology

Expenditure for the Financial Year 2023-24					
SL No	DATE	PURPOUSE	Firm Name	BANK STATEMENT DATE	AMOUNT
1	16/5/2023	Conference Souvenir Printing	AAKRATHI	16/5/2023	74340
2	18/5/2023	Scholarship	Nabeel	18/5/2023	5000
3	26/5/2023	Conference Live Telecast	Suddi Media	26/5/2023	16000
4	17/6/2023	Compression Machine servicing	Bharatraj Technician	17/6/2023	30000
5	08-10-2023	Materials for Injection Moulding-1 Machine spare parts	SELF CASH	08-10-2023	72000
6	17/10/2023	Live Telecast MoU Signing	ARJUN	17/10/2023	10000
7	17/10/2023	Chief Guest-Room Advance Booking	SRIGANESH	17/10/2023	5100
8	17/10/2023	IRI MoU Signing Hall Decoration	JONAS CONCESSAO	17/10/2023	45000
9	28/12/2023	Pending Amount Clearing Extruder Machine	Sushama(Benaka Industries)	28/12/2023	116600
10	29/12/2023	Injection Moulding-1 Machine servicng	Bharatraj Technician	29/12/2023	25000
11	29/12/2023	Materials for Injection Moulding-1 Machine spare parts	Bharatraj Technician	29/12/2023	28059
12	29/12/2023	Injection Moulding Machine-2 Spare Parts	Bharatraj Technician	29/12/2023	75000
13	02-09-2024	PAWA District Registar Office charges	SELF CASH	02-09-2024	30000
14	21/2/2024	Lab Tiles	Lab Tiles	21/2/2024	20997
15	23/2/2024	PPT LAB WALL SHIFTING & Tank Stand	Sahana Works	23/2/2024	27531
16	27/2/2024	Civil Work	Jayaram	27/2/2024	24200
17	28/2/2024	FIXED DEPOSIT	FIXED DEPOSIT	28/2/2024	400000
18	28/2/2024	FIXED DEPOSIT	FIXED DEPOSIT	28/2/2024	200000
19	28/2/2024	FIXED DEPOSIT Sweep In	FIXED DEPOSIT Sweep In	28/2/2024	100000

KARNATAKA (Govt.) POLYTECHNIC MANGALORE

DEPARTMENT OF POLYMER TECHNOLOGY

Toppers of Academic Year 2022-23

JNANESHWAR
Final Year
103PS20015
5th Sem- 89.5%
6th Sem- 86.6%

MOHAMMED NABEEL
Second Year
103PS21026
3rd Sem- 77.56%
4th Sem- 86%

DEEPAK
First Year
103PS22014
1st Sem- 85.11%
2nd Sem- 80.4%

Heartly Congratulations

KARNATAKA (Govt.) POLYTECHNIC MANGALORE

DEPARTMENT OF POLYMER TECHNOLOGY

PLACEMENT 2022-23

AKASH

Solara Pharmaceutical Baikampady

PRITHVIRAJ D SUVARNA

Solar Pharmaceutical Baikampady

JAYAVARDHAN I B

Konkan Special Polyproducts Pvt Ltd

TILAK C S

Trelleborg Pvt Ltd Bangalore

SRIJAN PRASAD

L M Wind Power Ltd Bangalore

SHARAN

Trelleborg Pvt Ltd Bangalore

PRAJNESH

Konkan Special Polyproducts Pvt Ltd

V K SRAJAN KUMAR

Trelleborg Pvt Ltd Bangalore

PLACEMENT 2022-23

PRAJWAL
Konkan Special Polyproducts Pvt Ltd

SAMPANNA
Valdel Advanced Technologies

VISHAL SINGH
Toyoda Gosie Co. Ltd

AKSHAY
Trelleborg Pvt Ltd Bangalore

NITHESH NAIK
Toyoda Gosie Co. Ltd

V S PRITHVI KARTHIK
Trelleborg Pvt Ltd Bangalore

THEJAS
Toyoda Gosie Co. Ltd

AVITH NAIK
Gujarath Petrosyntheses Ltd Bangalore

ABHISHEK
Trelleborg Pvt Ltd Bangalore

VARUN J
Trelleborg Pvt Ltd Bangalore

KARTHIK
Trelleborg Pvt Ltd Bangalore

KARTHIK
Trelleborg Pvt Ltd Bangalore

PLACEMENT 2022-23

DHANUSH
L M Wind
Power Ltd
Bangalore

SHARANK YASHWITHA
L M Wind
Power Ltd
Bangalore

SWATHI
L M Wind
Power Ltd
Bangalore

KAUSHIK
Trelleborg
Pvt Ltd
Bangalore

MONISH
Trelleborg
Pvt Ltd
Bangalore

ADITH NARAYAN
Higher
Education

KARTHIK
Solar
Pharmaceutical
Baikampady

KRITHESH
L M Wind
Power Ltd
Bangalore

GOUTAM
L M Wind
Power Ltd
Bangalore

ABHISHEK M
Valdel
Advanced
Technologies

HARSHITH
Trelleborg
Pvt Ltd
Bangalore

VISHAL KUMAR
Trelleborg
Pvt Ltd
Bangalore

PLACEMENT 2022-23

ABHISHEK
Trelleborg
Pvt Ltd
Bangalore

JEEVAN
L M Wind
Power Ltd
Bangalore

JNANESHWAR
Trelleborg
Pvt Ltd
Bangalore

BALAKRISHNA
Trelleborg
Pvt Ltd
Bangalore

GEETHESH
Gujarath
Petrosyntheses
Ltd Bangalore

PRAKYATH
Trelleborg
Pvt Ltd
Bangalore

KAUSHIK
Solara
Pharmaceutical
Baikampady

SUMITH J
Trelleborg
Pvt Ltd
Bangalore

Academic Achievements

The remarkable achievements of Mr. Karthik, Mr. Pratham, and Mr. Shashank, who secured the top three ranks in the state from the Polymer Technology branch, stand as a testament to their dedication, perseverance, and academic excellence.

Mr. Karthik's outstanding performance earned him the prestigious first rank in the state, showcasing his exceptional grasp of the subject matter and commitment to academic excellence. His dedication and hard work have set a high standard for his peers to aspire to, and his achievement is a source of pride for his institution and the Polymer Technology community.

To honour their exceptional achievements, Mr. Karthik, Mr. Pratham, and Mr. Shashank were felicitated at a prestigious ceremony held at Vidhana Soudha, Bangalore on 2nd November 2022. The event, graced by the Higher Education Minister, Commissioner of Collegiate and Technical Education, and other dignitaries, served as a fitting tribute to their hard work, dedication, and outstanding academic accomplishments. Their felicitation not only celebrates their individual success but also highlights the excellence and academic prowess of the Polymer Technology branch and the institution as a whole.

As they continue their academic journey and pursue their future endeavours, Mr. Karthik, Mr. Pratham, and Mr. Shashank serve as shining examples of excellence, inspiring their peers and future generations of students to strive for academic greatness and make significant contributions to the field of Polymer Technology. Their achievements will undoubtedly leave a lasting legacy and continue to inspire others to reach for the stars.

Securing 1st Place in the march past event

The event highlights the historic achievement of Polymer Technology students at KPT College, who secured the first-place position in the march past event for the first time in the college's history during the sports event. This remarkable accomplishment brought immense pride to the college community and marked a significant milestone.

Beyond highlighting the students' commendable dedication and collective effort, this triumph serves as a catalyst for inspiring and galvanizing future generations of Polymer Technology students to aim for excellence not only in sports but also in all aspects of their academic and extracurricular pursuits.

Milestone achievement in Sports

Mr. Abhishek Miranda

Register No: 103PS21001

Diploma in Polymer Technology, KPT, Mangalore.

Mr. Abhishek Miranda's athletic prowess has not only made waves at the college level but has also elevated him to recognition at the state and national levels, solidifying his status as an outstanding sportsman.

During the college sports day, Mr. Abhishek Miranda's remarkable abilities were on full display as he triumphed in multiple events. His sheer speed propelled him to victory in the 100-meter sprint, while his impressive agility and technique secured him first-place finishes in both the long jump and triple jump events. These stellar performances not only earned him individual accolades but also played a pivotal role in securing the Overall Championship for his college during the academic year 2023-2024, underscoring his invaluable contribution to the team's success.

Venturing beyond the college arena, Mr. Abhishek Miranda's showcased his talent and skill at the state level. As a member of the 100-meter relay and 4x100-meter relay teams, he demonstrated outstanding teamwork and speed, contributing to his team's success in both events. Furthermore, his individual excellence shone brightly as he clinched a Gold medal in the 400x100 relay, further cementing his reputation as a formidable athlete on the state stage.

Mr. Abhishek Miranda's exceptional performances have not gone unnoticed, as he has been selected to represent his state at the national level sports meet. This prestigious honor reflects his dedication, hard work, and consistent pursuit of

excellence in the field of sports. It is a testament to his talent and potential, as well as a well-deserved recognition of his contributions to the sporting arena.

As Mr. Abhishake Miranda prepares to compete at the national level, he carries with him the pride and support of his college and state. His journey serves as an inspiration to aspiring athletes, demonstrating the rewards that come with determination, perseverance, and a passion for sports. With his sights set on further achievements, Mr. Miranda is poised to make his mark on the national stage and continue his legacy as an exemplary sportsman. On behalf of PAWA, we wish you every success in your future endeavors. May you continue to shine bright and make us proud in all your future pursuits.

Technical Seminar By PAWA Team, Online and Offline

The technical seminar, both online and offline, organized for the advancement of Polymer Technology students through the support of alumni (PAWA), stands as a testament to the collaborative spirit and dedication towards nurturing the next generation of professionals.

In the ever-evolving landscape of polymer technology, staying abreast of the latest advancements and industry trends is paramount. Recognizing this need, the alumni association (PAWA) generously extended their expertise and resources to orchestrate a series of technical seminars, both online and offline, tailored specifically for the benefit of current Polymer Technology students.

The online component of the seminar provided a virtual platform, transcending geographical barriers and enabling students to access invaluable insights from industry experts and seasoned alumni professionals from across the globe. Through engaging webinars, interactive sessions, and panel discussions, students had the opportunity to delve deep into various facets of polymer technology, ranging from material science to manufacturing processes, and gain practical insights into real-world applications.

Complementing the online sessions, the offline segment of the seminar offered an immersive learning experience within the college premises. Facilitated by esteemed alumni speakers and industry leaders, these in-person sessions provided students with hands-on workshops, live demonstrations, and networking opportunities, fostering a conducive environment for knowledge exchange and skill enhancement.

The collaborative effort between the alumni association (PAWA) and the college faculty ensured that the seminar curriculum was meticulously curated to address the evolving needs of the industry and align with the academic syllabus, thereby bridging the gap between theoretical knowledge and practical application.

The impact of the technical seminar extended beyond the confines of the classroom, empowering students to envision and pursue diverse career pathways within the realm of polymer technology. Moreover, the invaluable mentorship and guidance imparted by alumni mentors served as a source of inspiration, igniting a passion for excellence and instilling a sense of confidence among aspiring professionals.

As the curtains draw on yet another successful edition of the technical seminar, the legacy of collaboration, innovation, and knowledge dissemination continues to flourish, laying the foundation for the holistic development and success of future generations of Polymer Technology students. Through such initiatives, the alumni association (PAWA) reaffirms its commitment to nurturing talent, fostering excellence, and driving positive change within the realm extending to Department of Polymer Technology- @ Karnataka (Govt.) Polytechnic, Mangalore.

Santhosh Kumar P

Head of the Department.

Department of Polymer Technology.

Karnataka (Govt.) Polytechnic, Mangaluru.

Technical Talk -By, Dr.Shiva M Shetty

Topic -Latest Trends in Rubber Industries.

Dr.Shiva M Shetty Interaction with Polymer Students.

Technical Talk (Online Mode) –By-Mr Raghavendra Udupa

Topic - Introduction to Supply Chain Management-

Technical Talk –By-Mr Manoj Lobo

Topic - Introduction to Composite Material.

5. Technical Talk –By-Mr Vasu Deva Rao

Topic Introduction to Rubber compounding and Mixing.-vulputate velit esse

6. Technical Talk –By-Mr Patheek Karkera

Topic – Tyre Technology.

7. Technical Talk –By-Mr Vijay Shetty

Topic – Advancement's in Rubber to Metal Bond

8. Technical Talk –By-Mr Naveen Bangera

Topic – Rubber Molded Products.

9. Technical Talk (Online Mode) –By-Mr Dinesh Aithal

Topic – Rubber Compound formulation and Testing.

10. Technical Talk (Online Mode) –By-Mr Yatheendra Gowda

Topic – Rubber Extrusion Process and Curing

11. Technical Talk–By-Mr Sanjay Jain

Topic – Latex Gloves Manufacturing.

12. Technical Talk –By-Mr Raghuvandra Prabhu

Topic – Plastic Compounding Technology.

12. Technical Talk –By-Mr Rakshith Shetty

Topic –Industry Norms and Guidelines.

13. Technical Talk –By-Mr Akash Bandari

Topic –Introduction to Polymers.

14. Technical Talk –By-Mr Sanjay Rao

Topic –Computer Aided Drawing, Design Aspects in Polymers

14. Technical Talk –By-Mr Sriganesh U P

Topic –Different Kinds of Polymer Additives

Infrastructure Development and Lab Up-gradationinthe Polymer Department

(With the Support of Polymer Alumni Welfare Association - PAWA)

The Polymer Department at Karnataka (Govt.) Polytechnic, Mangalore. has undergone significant infrastructure development and lab up-gradation initiatives, thanks to the generous support and collaboration of the Polymer Alumni Welfare Association (PAWA). These efforts aim to enhance the learning experience and practical capabilities of students and faculty members in the field of polymer technology.

The Polymer Department has a long-standing tradition of excellence in education. However, over time, there was a need to modernize the infrastructure and upgrade laboratory facilities to keep pace with advancements in the field. Recognizing this need, PAWA, comprising alumni who are leaders and experts in the polymer industry, stepped forward to support their alma mater.

Infrastructure Development:

- Under the guidance and financial assistance of PAWA, several infrastructure development projects have been undertaken in the Polymer Department. These include: of classrooms and lecture halls to create modern learning environments conducive to academic excellence.
- Construction of additional laboratory space to accommodate thegrowing needs of practical training and research activities. 1. Polymer Composite & AdhesiveLab.
- Installation and reconditioning of equipment and machinery to facilitate hands-on learning and experimentation. Up-gradation of library facilities with the latest textbooks, reference materials, and online resources to support student and faculty.

Impact and Benefits

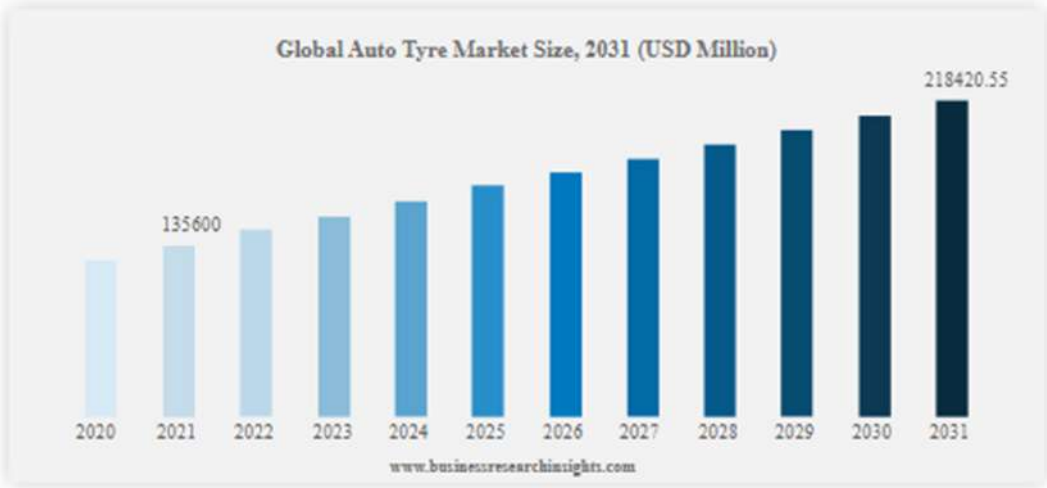
The infrastructure development and lab up-gradation initiatives have had a transformative impact on the Polymer Department and its stakeholders:

- Improved Learning Experience: Students now have access to modern facilities and equipment, enabling them to gain practical skills and knowledge that are directly applicable in the industry.
- Enhanced Research Capabilities: Faculty members can conduct cutting-edge research and innovation projects, leading to advancementsin polymer science and technology.
- Industry-Relevant Training: The upgraded labs and equipment align with the requirements of the polymer industry, preparing students for successful careers.
- Alumni Engagement: PAWA's involvement in these initiatives has strengthened the bond between the alumni community and the institution, fostering a culture of giving back and mutual support.

The collaboration between the Polymer Department and PAWA exemplifies the power of alumni engagement in advancing education and research. The infrastructure development and lab up-gradation projects have positioned the department as a leader in polymer education, empowering students and faculty members to excel in their endeavours. Moving forward, we remain committed to sustaining this partnership and continuing to invest in the future of polymer technology.

Tyre Industry Analysis

The global tyre industry is expected to proliferate due to the strong focus on fuel efficiency and increasing demand for low-rolling-resistance tyres. Additionally, the introduction of stringent environmental regulations and growing consumer preference for eco-friendly tyres will spur the growth of the tyre industry across the globe. The demand for auto tyres with advanced technologies such as self-inflating, chip-embedded, multi-chamber, and all-in-one tyres is constantly raising. These technologies increase vehicle convenience. It also helps extending tyre durability by real-time tyre pressure monitoring. These advanced tyres are expected to contain recycled materials, which is expected to facilitate sustenance.



The growing electric vehicles market is expected to drive the tyre market during the forecast period. Customers have been more conscious of environmental problems such as air quality, noise & air pollution, and the loss of non-renewable natural resources. The adoption of strict regulations to reduce excessive emissions has compelled manufacturers to manufacture and build environmentally sustainable alternatives in vehicles. Thus, due to improved range, battery life, reliability, and affordability, electric vehicles have become a much more appealing option for customers. China held the largest market of electric vehicles, which is expected to reach a market value of 3.79 Mn by 2026.

However, according to supply chain analysis experts, the increasing pressure to manage shortened order-to-delivery cycles, reduce cost, and rising need ensure a highly efficient logistics network to distribute tyres are some of the major challenges that the tyre industry faces. Consequently, to retain their foothold in this market space, major players from the tyre industry have started adopting supply chain analysis studies to reduce costs and ensure a highly efficient logistics network to cater to their customers.

Strategies for cost reduction in tire supply chain management

Demand Forecasting and Inventory Optimization

To improve inventory management, consider investing in data analytics and software tools that can analyze historical data and market trends. By doing so, you can make more accurate predictions about the demand for different types of tyres. This will help you avoid overstocking or understocking and reduce the need for safety stock. By relying on precise demand forecasts, you can minimize storage costs and the risk of tyres becoming obsolete. It is also important to work closely with suppliers to reduce lead times. Shorter lead times allow you to order tyres closer to the time they are needed, reducing the need for large inventory stockpiles.

Supplier Collaboration and Negotiation

Establish long-term partnerships with key suppliers. By committing to a more extended relationship, you can negotiate favorable terms, such as volume discounts, lower prices, and priority access to new tyre models or innovations. Collaborate with suppliers to identify cost-saving opportunities in the supply chain. This may involve jointly optimizing logistics, streamlining order processes, or finding ways to reduce defects and returns. Implement key performance indicators (KPIs) to evaluate your suppliers' performance. Use these metrics to encourage continuous improvement and ensure you are getting the best value for your procurement spend.

Just-in-Time (JIT) Inventory System

JIT reduces the requirement for large amounts of storage space. Smaller, more efficiently designed warehouses may save a lot of money on storage and free up funds for other projects. Keeping only the inventory needed for current demand significantly lowers holding costs, which include storage, insurance, and depreciation. There may be significant cost reductions as a result. By emphasizing a seamless and effective supply chain, JIT lowers the possibility of delays or bottlenecks. Additionally, it promotes a more flexible reaction to modifications in the market or changes in consumer demand.

The need for optimizing the tire supply chain

The establishment of efficient global supply chains has become critical for tyre manufacturers to stay competitive. This need has been increased further with new tyre technologies being developed at a rapid pace. The race to secure the necessary raw materials and technology implies that companies must maintain a robust supply chain. Starting from raw material procurement to the eventual sale of the tyre, minimizing inventory through product life cycle controls and facilitating

prompt product supply is as important as product differentiation strategies. To achieve this, however, the supply chain needs to function at its most optimal level and tire manufacturers must be able to respond quickly and effectively to changing supply chain needs and technological revolutions. There are several benefits of an optimized supply chain.

Short-term benefits

In the short-term, it helps optimize inventory to boost bottom lines and ensure on-time-in-full (OTIF) delivery to customers, especially to the original equipment manufacturers (OEMs). It helps improve the planning process for capacity utilization by balancing the numerous conflicting constraints and maximizing resource utilization and customer satisfaction, while minimizing machine setup times, inventory levels and overall costs. Supply chain optimization also allows the automatic creation and revision of detailed planning and scheduling for production facilities, which improves the management of various processes. In addition, it helps accomplish operational excellence and higher production quality while reducing costs in the short-term.

Long-term benefits

The long-term benefits of supply chain optimization include an improved overall view of the supply chain which allows for the evaluation of different scenarios, thereby leading to better long-term investment decisions. It also empowers procurement teams to negotiate more effectively with raw material suppliers and service providers, as well as provide the ability to automate purchasing and production decisions based on real-time price and market data. In the long term, production plans can also be optimized based on accurately forecasted demand, and orders can be assigned based on various factors such as customer location,

mode of transport, etc. Finally, it helps identify the best product allocation and visualize the impact of major investments on-demand fulfilment and margins while driving strategic decisions.

Compiled by

Raghavendra Udupa

Mr. Raghavendra Udupa completed his diploma in Polymer Technology (Rubber Technology) in 1983. He has total thirty-six years of experience in tyre and IT industry. During his tenure, he worked with Vikrant tyres, apollo tyres, Bristlecone India, Satyam Computers, HCL technologies and Wipro technologies in Production, QA, SCM, Project Management etc. After completing his diploma, he continued his studies and completed BE in industrial engineering and MBA in SCM.

Mr. Udupa is now a happily retired person continuing to use his experience in SCM consulting.

Polymer Composite a Wonder Material

Polymer composite materials stand as a marvel of modern engineering, blending the versatility and flexibility of polymers with the strength and durability of reinforcing materials like fibers or particles. This fusion results in a composite material that possesses a unique combination of properties, making it a wonder material in various industries.

One of the most striking features of polymer composites is their exceptional strength-to-weight ratio. By incorporating high-strength fibers such as carbon fiber or glass fiber into a polymer matrix, composite materials can achieve remarkable levels of strength and stiffness while remaining lightweight. This makes them ideal for applications where weight reduction is critical, such as aerospace, automotive, and sporting goods industries.

Furthermore, polymer composites offer outstanding resistance to corrosion, chemicals, and fatigue, making them highly durable and long-lasting. Unlike traditional materials like metals or ceramics, composites are not susceptible to rust or degradation, making them suitable for harsh environments and outdoor applications.

Another remarkable aspect of polymer composites is their versatility in manufacturing. These materials can be easily molded into complex shapes and forms using various techniques such as compression molding, resin transfer molding, or filament winding. This flexibility in manufacturing allows for the production of intricate and customized components with precise specifications, opening up a world of possibilities for designers and engineers.

Moreover, polymer composites offer excellent design freedom, allowing for the integration of multiple functionalities into a single component. For example, composites can be engineered to be electrically conductive, thermally insulating, or even self-healing, depending on the specific requirements of the application. This adaptability makes composites suitable for a wide range of industries, including aerospace, automotive, construction, marine, and renewable energy.
In addition to their mechanical and physical properties, polymer composites also offer environmental benefits. Compared to traditional materials like metals or concrete, composites often have a lower environmental footprint due to their lighter weight, reduced energy consumption during manufacturing, and potential for recyclability. This makes them an attractive choice for sustainable and eco-friendly applications.

Overall, polymer composites represent a wonder material that continues to revolutionize industries and push the boundaries of what is possible in engineering and design. With their exceptional properties, versatility, and sustainability, composites are poised to play a significant role in shaping the future of materials science and technology.

Polymer composites widespread applications

Polymer composites find widespread applications across various industries due to their unique combination of properties, including strength, durability, lightweight, and corrosion resistance. Some of the key applications of polymer composites include:

Aerospace: Polymer composites are extensively used in aerospace applications, including aircraft fuselages, wings, and interior components. Their high strength-to-weight ratio helps reduce fuel consumption and increase payload capacity.

Automotive: Polymer composites are utilized in automotive applications such as body panels, chassis components, and interior parts. Their lightweight nature contributes to fuel efficiency and reduces vehicle emissions.

Construction: Polymer composites are employed in construction for structural elements, bridges, building facades, and reinforcement materials. They offer high strength, durability, and resistance to corrosion, making them ideal for use in harsh environments.

Marine: Polymer composites are widely used in the marine industry for boat hulls, decks, and other structural components. They provide excellent resistance to water, salt, and corrosion, enhancing the longevity of marine vessels.

Sports and Recreation: Polymer composites are used in the production of sports equipment such as tennis rackets, golf clubs, bicycles, and helmets. Their ightweight and high-strength properties improve performance and durability.

Renewable Energy: Polymer composites are utilized in renewable energy applications such as wind turbine blades, solar panels, and hydroelectric components. Their lightweight and corrosion-resistant properties make them uitable for harsh outdoor environments.

Electrical and Electronics: Polymer composites are employed in electrical and electronic applications such as printed circuit boards (PCBs), insulators, and electrical enclosures. They offer excellent electrical insulation properties and can be tailored to meet specific dielectric requirements.

Medical: Polymer composites are used in medical applications such as prosthetics, orthopedic implants, and dental materials. Their biocompatibility, lightweight, and customizable properties make them suitable for a range of medical devices.

Consumer Goods: Polymer composites are utilized in consumer goods such as furniture, luggage, sporting goods, and home appliances. Their versatility, aesthetics, and durability enhance the performance and lifespan of these products.

Defence and Security: Polymer composites are employed in defences and security applications such as ballistic armour, vehicle armour, and protective gear. Their lightweight and high-strength properties provide superior protection against ballistic threats and impacts.

Overall, the application of polymer composites continues to expand across various industries, driven by their exceptional properties and versatility in engineering and design. As research and development efforts continue, the potential applications of polymer composites are expected to grow, further contributing to advancements in technology and innovation.

by,

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Article 1

Biomimetic Polymers: Learning From Nature's Masterpieces

Imagine a material as strong as steel yet lighter than a feather, or a surface that repels water like a lotus leaf. These seemingly fantastical properties exist in nature, and scientists are increasingly turning to them for inspiration. Biomimetic polymers, inspired by the ingenious structures found in living organisms, represent a new frontier in material science.

Nature's Blueprint: A Treasure Trove of Inspiration

Nature has had billions of years to perfect its designs. Spider silk, for example, boasts incredible tensile strength, exceeding even steel on a weight-to-weight basis. Sea shells, despite their delicate appearance, offer remarkable resilience due to their layered structure. These natural wonders serve as blueprints for scientists who are developing novel polymeric materials with superior properties.

Deciphering Nature's Code

The process of biomimetic design starts with understanding the structure and function of the target material in nature. Researchers use sophisticated techniques like X-ray diffraction and electron microscopy to analyse the arrangement of molecules and the hierarchy of structures present. For instance, spider silk's strength arises from a complex arrangement of protein chains that self-assemble into a strong and flexible fibre.

Mimicking Nature's Strategies

Once the underlying principles are understood, scientists translate them into the realm of synthetic polymers. This may involve mimicking the specific molecular structure or replicating the hierarchical organization observed in nature. For example, researchers have developed synthetic polymers with spider silk-inspire structures, achieving impressive strength and toughness.

Beyond Simple Mimicry: Innovation Through Inspiration

Biomimetic polymers aren't just about copying nature exactly. Often, researchers take inspiration from natural structures and then use their understanding of polymer chemistry to create entirely new materials with superior properties. An example is the development of self-healing polymers inspired by the regenerative abilities of some organisms. These polymers can repair damage when exposed to specific stimuli, extending their lifespan and reducing waste.

A Brighter Future: Sustainable and Functional Materials

Biomimetic polymers hold immense potential for a wide range of applications. They can lead to the development of stronger and lighter materials for aerospace and construction, more durable and water-resistant fabrics for clothing, and even advanced medical devices with improved biocompatibility. Additionally, biomimetic approaches often utilize renewable resources, contributing to more sustainable material production.

The Future of Biomimetic Polymers

As research in biomimetic polymers continues to advance, we can expect a new generation of materials that are not only functional but also inspired by the elegance and ingenuity of nature. From stronger and lighter structures to self-healing properties, biomimetic polymers promise to revolutionize various industries and contribute to a more sustainable future.

Pranesh Nellyadi

Article 2

Polymer Power: Innovations Tackling the Climate Crisis

Polymers are everywhere – in our clothes, packaging, cars, and countless everyday objects. Their versatility is unmatched, but this comes with an environmental cost. Traditional polymer production heavily contributes to greenhouse gas emissions and plastic pollution. As the climate emergency escalates, it's time for a revolution in the realm of polymers.

Switching to Greener Sources

Bio-based polymers are a game-changer. Instead of relying on fossil fuels, these materials are made from renewable sources like plants. A 2020 study found that substituting traditional plastics with bio-based alternatives could reduce greenhouse gas emissions by up to 240 million metric tons of CO2 equivalent per year. [Source: McKinsey & Company, "Scaling bio-based plastics"]

The Biodegradation Advantage

Biodegradable polymers offer a solution to the mounting landfill and ocean plastic problem. Unlike conventional polymers that persist for centuries, biodegradable variants break down naturally over time. Researchers are even developing compostable polymers, adding to the arsenal of tools for minimizing plastic waste.

Smarter Structures for Energy Savings

Polymers are crucial in improving energy efficiency. Lightweight, high-performance polymers used in cars and airplanes contribute to better fuel economy. Moreover, advanced insulation materials developed from polymers help buildings retain heat or coolness, reducing energy needs for climate control. According to the U.S. Department of Energy, better home insulation alone could save about 2.5 quads worth of energy each year. [Source: U.S. Department of Energy]

Capturing and Converting Carbon

Polymers are even assisting in the fight against carbon dioxide emissions. Special polymer membranes can selectively capture CO2 from industrial exhaust streams. Scientists are further exploring polymer catalysts that can convert this captured CO2 into useful products like fuels or chemicals, creating a virtuous cycle.

The Future is Circular

Innovation isn't limited to creating new materials. Technologies for chemically recycling existing polymers are rapidly advancing. This allows us to break down waste plastics into their original building blocks, reducing the need for new fossil-fuel-derived resources.

Challenges and Collaboration

The shift towards sustainable polymers isn't without its hurdles. Costs, infrastructure, and scaling up production remain obstacles. Government policies that incentivize sustainable choices, alongside consumer awareness demanding eco-friendly products, will be crucial to pave the way.

The climate crisis calls for bold solutions. Polymer innovation, with its focus on greener sources, biodegradability, energy efficiency, and circularity, presents a powerful tool for combating the environmental challenges we face.

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