

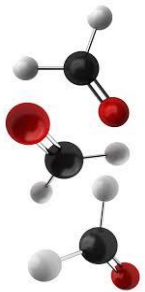
KAMARAJ

COLLEGE OF ENGINEERING & TECHNOLOGY

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
Accredited by NAAC with 'A' Grade



MACROVISION



EDITION 5
VOLUME 5
JAN-JUNE 2019

DEPARTMENT OF POLYMER TECHNOLOGY

Vision

“ To make the Department of Polymer Technology the unique of its kind in the field of Research and Development activities with the prominent field of Polymer Science and Engineering in this part of world”.

Mission

“To impart highly innovative and technical knowledge in the field of Polymer Science and Engineering to the urban and unreachable rural student folks through Total Quality Education”.

QUOTES:

“I am thankful for all of those who said NO to me. It’s because of them I’m doing it myself.”

– **Albert Einstein**

“Don’t judge each day by the harvest you reap but by the seeds that you plant.”

– **Robert Louis Stevenson**

POLYMERS IMPROVE PERFORMANCE, FLEXIBILITY, AND SAFETY OF LI-ION BATTERIES

In conjunction with other materials, polymers are used to maintain and enhance battery performance. Separators often are made from permeable polymer films and fibers. The separators must be chemically, electrochemically, thermally, and mechanically stable, and must possess the necessary pore size to allow ion permeability. Recent advances allow liquid electrolytes to be replaced by solid-state electrolytes, such as gel polymer electrolytes, which are composed of a polymer matrix and liquid electrolyte. This enhances flexibility and safety.

T.PRAVEENA, III PT

Plastic Recycling:

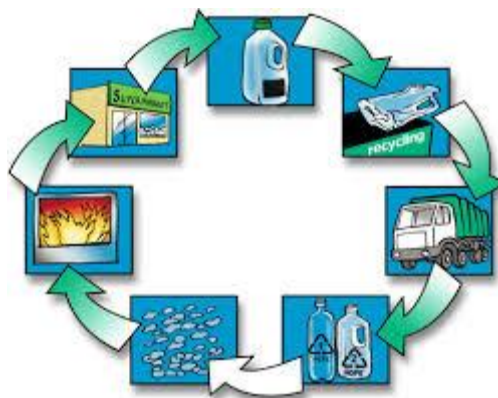
Plastic recycling is the process of recovering different types of plastic material in order to reprocess them into varied other products, unlike their original form. An item made out of plastic is recycled into a different product, which usually cannot be recycled again.

Stages in Plastic Recycling

Before any plastic waste is recycled, it needs to go through five different stages so that it can be further used for making various types of products.

- **Sorting:** It is necessary that every plastic item is separated according to its make and type so that it can be processed accordingly in the shredding machine.
- **Washing:** Once the sorting has been done, the plastic waste needs to be washed properly to remove impurities such as labels and adhesives. This enhances the quality of the finished product.
- **Shredding:** After washing, the plastic waste is loaded into different conveyer belts that run the waste through the different shredders. These shredders tear up the plastic into small pellets, preparing them for recycling into other products.
- **Identification and Classification of Plastic:** After shredding, a proper testing of the plastic pellets is conducted in order to ascertain their quality and class.
- **Extruding:** This involves melting the shredded plastic so that it can be extruded into pellets, which are then used for making different types of plastic products.

A.Marikani,III PT



ACHEIVEMNTS BY STUDENTS:

- ❖ **Mr. A. BALA MURALI** of III year has got Scholarship of Rs. 12,500/- towards academic excellence on rubber field by All India Rubber Industries Association (AIRIA-ET) at 21st Annual day occasion at Kamaraj College of Engineering & Technology, Virudhunagar dated 08.02.2019
- ❖ **Mr. A. AHAMED RAVOOF** of IV year has got Scholarship of Rs. 12,500/- towards academic excellence on rubber field by All India Rubber Industries Association (AIRIA-ET) at 21st Annual day occasion at Kamaraj College of Engineering & Technology, Virudhunagar dated 08.02.2019.
- ❖ **DEEPAK VISHNU.S.K,VIGNESH.P,HARIRAJAPRABHU.B** of IV year had their Project Internship for 2 months at Dept. of Chemical Engg., Taiwan University, Taipei during Feb and March 2019
- ❖ **S. YATHOV** of III year has won **I prize** in technical quiz organised by ELASTOPLAZ 19 at Society of Plastics and rubber technologists, MIT campus, Chennai dated 01.03.2019 & 02.03.2019.
- ❖ **A.MARIKANI** of III year has won **I prize** in technical quiz organised by ELASTOPLAZ 19 at Society of Plastics and rubber technologists, MIT campus, Chennai dated 01.03.2019 & 02.03.2019
- ❖ **S. YATHOV** of III year has won **II prize** in Dumb Charadej organised by ELASTOPLAZ 19 at Society of Plastics and rubber technologists, MIT campus, Chennai dated 01.03.2019 & 02.03.2019.
- ❖ **A.MARIKANI** of III year has won **II prize** in Dumb Charadej organised by ELASTOPLAZ 19 at Society of Plastics and rubber technologists, MIT campus, Chennai dated 01.03.2019 & 02.03.2019.
- ❖ **J.IMMANUEL WESLY PAUL** of III year has won **II prize** in PAPER PRESENTATION organised by ELASTOPLAZ 19 at Society of Plastics and rubber technologists, MIT campus, Chennai dated 01.03.2019 & 02.03.2019.
- ❖ **V.GANESH,A.BALA MURALI** of III year **AND SRIKANTH** of II year has won **I prize** in POSTER PRESENTATION organised by ORA 19: Bioengineering Innovation Contest at Dept. of Bio Technology, Kamaraj College of Engg. and Tech, Virudhunagar dated 08.03.2019.
- ❖ **V.GANESH,A.BALA MURALI** of III year **AND SRIKANTH** of II year has won **I prize** in PROJECT DESIGN organised by ORA 19: Bioengineering Innovation Contest at Dept. of Bio Technology, Kamaraj College of Engg. and Tech, Virudhunagar dated 08.03.2019.
- ❖ **T.PRAVEENA** of III year Published Article in Magazine under the topic Radioactive Polymer-tumor killer in IPI Journal Vol:5, Issue:5, Dec/Jan 2018, PP: 17
- ❖ **A.BALA MURALI** of III year Published Article in Magazine under the topic Graphene: The Next wonder Material in IPI Journal Vol:5, Issue:5, Dec/Jan 2018, PP: 22

❖ **B.SRIKANTH** of II year has won

- I place in 100m Boys
- I place in 200m Boys
- I place in 400m
- II place in 4X400m relay
- III place in 4X100m relay In 21st Annual Sports Day, at Kamaraj College of Engg & Technology on 02.02.2019

❖ **MR.SAKTHIGANESH** of II year has won **I prize** in CAD event at MACRON 19 organised by Dept. of Polymer Engineering, Crescent Institute of science and technology, Chennai dated 26.03.2019

EVENTS ORGANISED IN OUR DEPARTMENT:

One day exhibition was organized for National Science Day on 28.02.2019



Guest lecture by Mr.Nandha Gopal on waste Management dated 11/03/2019.



Industrial visit by III year and II year students to Arasu Rubber Corporation, Nagarkoil, Konam latex Industries, Nagarcoil, Sreema Industries, Nagarcoil dated 12.03.2019 & 13.03.2019.



One day workshop Polymer testing methods for Polytechnic students from CIPET Madurai dated 13.06.2019 .



PLASTIC HOUSE

GATE POINT :

1. Flexible PVC tubes are used for watering. If some organic solvents are passed through this tube, it becomes stiff. This is due to the fact that the organic solvents
 - (A) plasticize PVC and raise Tg.
 - (B) remove plasticizer and raise Tg.
 - (C) remove plasticizer and lower Tg.
 - (D) react with PVC and increase Tg

ANS : remove plasticizer and raise Tg.

2. The Tg of homopolymers of A and B are +100 °C and -70 °C respectively. The Tg of a random copolymer of A and B having 40 wt% A and 60 wt% B is _____ deg C.

ANS : -25.00 to -24.50

3. The number average molecular weight of a polymer prepared from HO(CH₂)₁₄COOH is 24,000 g/mol. The conversion of the monomer required to reach the above molecular weight is _____ %. (C = 12, H = 1, O = 16 g/mol).

ANS : 98.80 -99.10

4. Glass fibers in nylon provide reinforcement. The modulus of elasticity for each component of the composite is; E_{glass} = 10.5 x 10⁶ psi; E_{nylon} = 0.4 x 10⁶ psi. If the nylon contains 30 vol % E-glass, the fraction of the applied force is carried by the glass fiber is _____. (Assume that both glass fiber and nylon have equal strain).

ANS : 0.90-0.93

5. The heat of polymerization of styrene is 20 Kcal/mol. Heat of 5 x 10⁵ Kcal will be released on polymerization of _____ Kg of styrene (C = 12 and H = 1 g/mol).

ANS : 2600

STUDENTS INDUSTRY PROJECTS:

- + **Deepak Vishnu.S.K** of IV PT carried out their project work in National Taiwan University, the topic is **“Friedel Crafts Grafting of Polyvinyl Chloride onto Polysulfone and Second Grafting With 2-Methylimidazole”**.
- + **Harirajprabhu.B** of IV PT carried out their project work in National Taiwan University, the topic is **“Synthesis and Characterization of Copolymerization of Acid and Amine Functionalized Polystyrene”**.
- + **Vignesh.R** of IV PT carried out their project work in National Taiwan University, the topic is **“Synthesis Characterization and Catalytic Activity of PVDF-G-MAH/V2O5 Nano Particles”**.
- + **Velusamy Selvan.P and Venkatesh Kumar.T** of IV PT carried out their project work **Tvs Sundaram Auto Components, Hosur**, and the topic is **“Developing and Implementing Quality Information System”**.
- + **Rohith Noel.L and Micheal Raj.A** of IV PT carried out their project work in **Avon Seals Pvt. Ltd, Chennai**, the topic is **“Reducing Viscosity For Improved Processability”**.
- + **Anwar Batsha.M and Sureshkrishnan.G** of IV PT carried out their project work in **Avon Seals Pvt. Ltd, Chennai**, the topic is **“Reducing Viscosity For Improved Processability”**
- + **Vishnu Chandar.N and Mukilan.M** of IV PT carried out their project work in **Formulated Polymers, Chennai**, the topic is **“Improvement Of Cold Impact Property In Polyamide12”**
- + **Vigneshwari.G and Priyadharshini.K** of IV PT carried out their project work in **Emrald Tyres, Gummidipoondi, Chennai**, the topic is **“Development of Tyre tread compound with high quality properties at modrate cost”**
- + **Magesh Karthik.B** of IV PT carried out their project work in **Tvs Sri Chakara Tyres, Madurai**, the topic is **“Tread Profile Modification:Performance Based Tyres”**
- + **Ajay.P, Santhanu.A and Vignesh.C** of IV PT carried out their project work in **Taylor Rubber Industries, Chennai**, the topic is **“The NBR Rubber To The Cost Reduction Of Chloroprene”**
- + **Poornachandru .M and John Wilson.M** of IV PT carried out their project work in **Fenner India Ltd, Madurai**, the topic is **“Study On Length Variation Of Wrapped V-Belts In Rota Curing Process”**
- + **Revathi.R.V and Anusri.S** of IV PT carried out their project work in **Jk Fenner India Ltd, Chennai**, the topic is **“Enhancement Of Aesthetic Appearance Of Oil Seal”**

- ✚ **Dinesh.E and Dinesh Kumar.M** of IV PT carried out their project work in **Kingfa Science & Technology (India) Limited, Pandicherry** , the topic is **“Analysing The Compounding Process To Find The Causes And Remedies Of Extrusion Lumps”**
- ✚ **Venkatesh.C.P and Manikandan.R** of IV PT carried out their project work in **Motherson Elastomer Pvt Ltd, Chennai** , the topic is **“Cost Reduction By Incorporating Reclaimed Epdm Without Deteriorating Its Properties”**
- ✚ **Ahamed Ravoof.A and Vijayarahavan.S** of IV PT carried out their project work in **Alliance Tyres, Thirunelveli** , the topic is **“Cure Cycle Optimization Through Dome Boosting Technique”**
- ✚ **Tharani.G, Nandhini.P and Anlgalaparameswari.M** of IV PT carried out their project work in **Fenner India Ltd, Madurai** , the topic is **“Enhancement Of Adhesion Strength Of Epdm Rubber To Yarn In “Radiator Coolant Hoses””**
- ✚ **Ajithkumar.K ,Vignesh.C and Vignesh.J** of IV PT carried out their project work in **Prominace Corporate, Coimbatore** , the topic is **“Reduce Rejection Rate Of Upvc Window Profile In Extrusion Process”**
- ✚ **Jebastin.P Surendar.R.S and Ranjithkumar. S** of IV PT carried out their project work in **Roop Polymers, Chennai** , the topic is **“Study And Optimizing The Parameter Of Various Molding Process And Reduces The Flash”**
- ✚ **Nevili Boopathi.V** of IV PT carried out their project work in **Sastha Polymers, Madurai** , the topic is **“Study Analysis And Optimization On PVC Manufacturing Parameter”**

ACHIEVEMENTS BY FACULTIES:

- ❖ **Dr.R.Baskaran** Submitted Project on Title “**Synthesis and characterization, of water soluble fluorescent Poly(aniline) copolymers and its nanocomposites**” for Rs.3,70,000 at Tamilnadu State Council for Science and Technology, DOTE Campus, Chennai – 600025, dated 16.02.2019
- ❖ **Mr.Ponprabhakaran** has submitted his thesis report at Anna University , Chennai on 26.02.2019.
- ❖ **Dr.R.Baskaran** had arranged **On campus drive:** Kingfa Science and Technology, Chennai for final year students on 04.03.2019
- ❖ **Dr. M.G.Sribala and Dr.S.Vinayagamoorthy Dr. R.Baskaran** was undergone industrial visit along with students of II & III year Polymer Technology. The industries are Arasu Rubber Corporation, Nagarcoil, Konam latex Industries, Nagarcoil, Sreema Industries, Nagarcoil dated 12.03.2019 & 13.03.2019.
- ❖ **Dr.R.Baskaran and Mr.S.Sivakumaravel** has chaired the symposium on plastic waste management at a VSVN Polytechnic College, Virudhunagar dated 17.01.2019.
- ❖ **Dr.S.Kailash** has delivered a lecture on “Synthesis and Characterization of PCL-PTHF block copolymers for drug delivery applications” in the event “NALLANDA 18” Working with Nano Materials, Organized by Dept. of Bio Technology, KCET, virudhunagar dated 04.01.2019

EDITOR

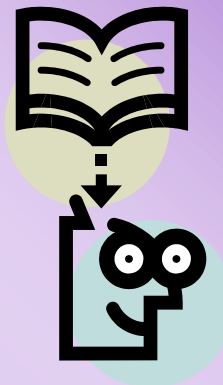
R. V.Revathi IV PT, S.Anushri IV PT
G.Gayathri,III PT,A.Marikani,III PT
B.Deepa II PT, A.Guna Priya II PT

Co Editor

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Chief Editor

Dr.S.Gandhi , Head of the Department



USE **PLASTIC CARRY** BAGS TO
SAVE PAPER AND TREES, **LETS SAY**
YES TO PLASTICS, BUT NO TO ITS
MISUSE.