DEPARTMENT OF POLYMER AND SURFACE ENGINEERING

Shashank T. Mhaske

Professor of Polymer Technology

Ph. D (Tech) Chemical Technology

VISION:

Empowering skills and knowledge about latest Research in the field of Polymer & Surface Coating Technologies.

MISSION:

Our goal is to prepare skillful scientists and engineers to fill the need for polymer scientists and engineers in industry, government, and education.

Polymer and Surface engineering is a multidisciplinary field focused on this special class of molecules. As materials, polymers are indispensable in a prosperous society, fundamental in modern industry, and functional for chemistry, textiles, medicine, biology, pharmacology, electronics, aeronautics, space, and many other advanced and emerging technologies. This is coupled with research opportunities with an increasingly young and vibrant faculty that will set the tone for the foreseeable future. Our academic focus spans all aspects of the evolving polymer field, from synthesis to engineering. Cross-discipline research is integral to our program and most often involves departments such as physics, chemistry, biology, and chemical engineering. PSE students and faculty participate extensively in collaborative research programs with other universities and at national laboratories.

We have a combination of core-coursework, usage of experimental equipment, access to industrial projects and short internships that continue to make our graduates highly sought after.

The department of Polymer and Surface Engineering, has undergone changes in its nomenclature and was established in 1946. Earlier it was known as Paints, Pigments and Varnishes (PPV) Section and was steered in the beginning by none other than Professor N.R. Kamath, a famous chemical engineer, graduate of first batch of B.Sc. (Tech.), in 1936, who later migrated t IIT-Bombay as Head of Chemical Engineering and Deputy Director. The B.Sc. (Tech.) courses in plastics and paints technologies were started in 1940s and have been popular throughout. Several small and medium industries covering plastics, paint, printing ink, adhesive and sealers have been founded by the graduates of the Department and maintained excellent connectivity with industry. The Department runs two B. Tech. programs: Polymer Engineering and Technology, and Surface Coating Technology. Community, and will always be a part of the Department's family. The Department runs two B. Tech./M.Tech/Ph.D. programs: Polymer Engineering and Technology, and Surface Coating Technology.

What is Polymer Science and Engineering?

Polymer science and engineering is a broad, interdisciplinary field that brings together various aspects of chemistry, physics, and engineering for the understanding, development, and application of the materials science of polymers. Many of the existing engineering programs provide a good foundation for work in polymer science and engineering.

A polymer is a chemical compound with large molecules made of many smaller molecules (monomers) of the same kind typically tens of thousands to millions.. Some polymers exist naturally and others are produced synthetically. Starch, cellulose, proteins, and DNA are examples of natural polymers, while polyolefins, PVC, polycarbonate, rubber, Teflon, and PEEK etc. are examples of the synthetic variety. Both classes possess a number of highly useful properties that are as much a consequence of the large size of these molecules as of their chemical nature. Although most synthetic polymers are organic, that is, they contain carbon as an essential element along their chains, other important polymers, such as silicones, are based on noncarbon elements.

The first modern example of polymer science synthesis of derivatives of the natural polymer cellulose, producing new, semi-synthetic materials, such as celluloid and cellulose acetate. The World War II era marked the emergence of a strong commercial polymer industry. The limited or restricted supply of natural materials such as silk and rubber necessitated the increased production of synthetic substitutes, such as nylon and synthetic rubber. In the intervening years, the development of advanced polymers such as Kevlar and Teflon have continued to fuel a strong and growing polymer industry.

Although progress in polymer science and engineering can be considered ground-breaking, opportunities are abundant for creating new polymeric materials and modifying existing polymers for new applications; depolymerization and polymer recycling; oxo and biodegradable polymers; nano-composites, and the like. Scientific understanding is now replacing empiricism, and polymeric materials can be designed on the molecular scale to meet the ever more demanding needs of advanced technology. The possible control of synthetic processes by biological systems is promising as a means of perfecting structures. New catalysts offer the opportunity to make new materials with useful properties, and the design of new specialty polymers with high-value-added applications is an area of rapidly increasing emphasis. Theory, based in part on the availability of high-speed computing, offers new understanding and aids in the development of improved techniques for preparing polymers as well as predicting their properties. Analytical methods, including an array of new microscopic techniques particularly suited to polymers, have been developed recently and promise to work hand-in-hand with theoretical advances to provide a rational approach to developing new polymers and polymer products. The field of polymer science and engineering therefore shows no sign of diminished vigor, assuring new applications in medicine, biotechnology, electronics, and communications that will multiply the investment in research many times over in the next few decades.

The education provided to the students is the blend of practice and theory related to polymer science and engineering. The students learn to develop systems which are economically feasible and environmentally acceptable on the mass scale

What is Surface Coating Technology?

Surface coating processes involve depositing a layer of molten, semi-molten or chemical material onto a substrate. One of the main functions of surface coating is to modify and reinforce the surface functions instead of reforming the composition of the bulk material. Some examples of surface coating processes include Physical vapor Deposition (PVD), Chemical vapor Deposition (CVD), plasma and thermal spraying, sol-gel, cladding and electroplating. Surface modification processes can be classified as hardening by flame, induction, laser or electron beam, high energy treatments, e.g. ion implantation; and diffusion treatments, e.g. carburizing and nitriding. The surface coating change aesthetic properties such as color, gloss, texture and functional properties like resistance to wear, chemical attack,

permeability, weathering resistance without changing the bulk properties. These materials include coatings, adhesives, sealants, varnishes, enamels, lacquers. Initially coating was solvent based however, the volatile organic compounds are compelling to develop ecofriendly coatings like water based, high solids coatings, powder coatings and radiation curable coatings. In general, organic coatings are based on a vehicle, usually a resin, which, after being spread out in a relatively thin film, changes to a solid. This change, called drying, may be due entirely to evaporation (solvent or water), or it may be caused by a chemical reaction, such as oxidation or polymerization. The materials providing the hiding are the opaque materials called pigments, dispersed in the vehicle, contribute color, opacity, and increased durability and resistance.

The physical, chemical and mechanical properties of a material surface determine its applicability in many technical devices. Numerous applications could not be realized without the use of surface modifications, coatings and thin film technology. Therefore, the need for efficient and effective methods of surface modification is becoming increasingly evident to allow the production of far superior products in terms of wear resistance, corrosion protection, enhanced biocompatibility, thermal insulation, improved optical and altered electronic properties. Coating technologies of particular interest include physical and chemical vapor deposition, thermal spraying, electrochemical deposition, sol-gel-syntheses, and plating. Surface modification includes directed energy techniques such as ion, electron and laser beams as well as etching procedures and thermo-chemical diffusion. Beyond that, mono-layers (e.g. SAM, Langmuir-Blodgett) have attained high significance in preparing thin films to modify biomedical surfaces. Recent novel techniques to prepare patterned surfaces (e.g. nano-imprint lithography, micro-contact printing) have proven their potential for the fabrication of integrated circuits and bioactive implants. Thus, this course offers an exciting field of study. New trends related to surface engineering and coating technology for the synthesis of functional materials surfaces including novel fabrication methods, materials and applications, new characterization techniques as well as numerical simulation and modeling are some of the areas of research.

The Department is supported by University grand commission, Department of science and technology and other coating industries.

Major Research Areas

Nanotechnology, Plastic waste recycling, Microencapsulation, Bio nanocomposites, thermoplastic vulcanizates and elastomers, Hot melt adhesives, Waterborne coating, insulating varnishes, Conductive coatings, Anticorrosive coatings, flame retardant coatings, Self-healing coatings, Recycling of e-waste, Antimicrobial Polymer and Paints, Heat reflective coatings, Resin Synthesis,

Major Instruments available in the Department

TGA, DSC, DMTA, Rheometer, XRD, UTM, Xenon Arc Weatherometer, FTIR, UV Spectrophotometer, Smoke Density Analyzer, Particle Size Analyzer, LOI Analyzer, Blown film Machine, Extruder, Compression Molding Machine, Wet abrasion scrub, Spin coating, Impact tester, Scrub tester, Scratch resistance, Scratch tester, Two roll mills, Spray dryer.

Courses Offered

Degree	Course	Total Seats
B. Tech	Polymer Engineering and Technology	16
	Surface Coating Technology	16
M. Tech	Polymer Engineering and Technology	18
	Surface Coating Technology	18

Major grants to the department: TEQIP, DST, FIST, DBT, AICTE.

SHASHANK T. MHASKE

Ph. D (Tech) Chemical Technology

Professor of Polymer Technology

Profile and accomplishments so far

Publications (peer reviewed) so far: 157

h-Index: 19
Citations : 1668

Research interests :

Polymer Engg & Technology: Rheological characterization of the polymers, Nanoparticle Synthesis(Titatnium, Baraties, Molybdiate, Iron, Zinc, Aluminium silicates, cellulose) and Application in polymers, Reinforcing action of Nano-fillers for commodity Plastics, Polyester and epoxy based Pigment pastes for FRP Applications, impact Modification of Engineering, Polymers, Development of Thermo plastics Vulcanizates & Elastomers for Automotive.

Surface Coating Technology: Development of resins (Acrlylics, Epoxy, Urethanes, Polyesters) from renewable sources, Synthesis of polyamide based hot melt adhesives, Functional modification of resin for coating application(Fire Retardent, Antimicrobial, Anticorrosive, Heat reflective and anti-static) Development of water based or VOC free Coatings for industrial applications.

Research students:

Ph.D. (Tech.) –

Completed - 12, Ongoing - 12

Ph.D. (Sc) -
Ongoing - 2

M.Tech. -

Completed - 53, Ongoing - 15

Research publications:

International - 157

Patents :

International - 02, Indian - 03

Sponsored projects:

Government - 01, Private - 7

Professional Activities (Membership of important Committees):

- Vice Chairman, IPI, Mumbai
- Head Warden, ICT Mumbai (2018)
- Faculty Placement In charge, Department of Polymer Science & Engineering, ICT
- Secretary, UDCT Alumni Association (2010-14)
- Secretary, The Colour Society (2014-15)
- Governing Member, The Society for Polymer Science, India
- Associate Member, ISSPA
- Member, Solvent Extractors Association of India
- Visiting Faculty at SIES School of Packaging, Garware Institute, Amaravati
- University, Indian Plastics Institute
- Jury Board Member, AIPMA Exhibition
- Organizing Committee, Rangotsav, Technical Fest, DPSE, ICT
- Member, JOY of GIVING, Social Drive at ICT Mumbai
- Member, Organizing Committee, BioProcessing India, 2014
- Jury Member, VASTRA, Tech Fest, VJTI
- Organizer, 2 Days Workshop on “Polymer Identification & Characterization by IPI-ICT”
- Advisory Member, Bio-Pack International Conference, 2013
- 19 Invited Expert Lectures delivered at Crompton Greaves, BlueStar, Garware etc.

Special Awards/Honors:

- National Award for Technology Innovation in “Green Polymeric Materials & Products” By Dept. of Chemicals and petrochemicals, Ministry of Chemicals and fertilizers. Govt. of India.
- Young Associate of Maharashtra Academy of Sciences. Govt. of Maharashtra
- Best Teacher Award, ICT (2015)

PRAKASH A. MAHANWAR

Ph. D (Tech)

Professor of Polymer Technology

Highlights of research work done and it impart

Publications (peer reviewed) so far: 73

h-Index: 19
Citations : 1356

Research interests:

- Plastic waste recycling
- Microencapsulation
- Control release formulation
- Bio-degradable formulation
- Nanomaterials
- Polymer blends
- Polymer composites

Research students:

Ph.D. (Tech.) –
Completed - 17, Ongoing - 7
Ph.D. (Sc) -
Ongoing - 2
M.Tech. -
Completed - 65, Ongoing - 22

Patents :

International - 01, Indian - 06

Sponsored projects:

Government- 4, Private- 11

Professional Activities (Membership of important Committees):

- Hon. President, Color Society, Mumbai.
- Member Board of Governors, UDCT Alumni Association, Mumbai.
- Member, Technical Advisory Committee Ministry of Science & Technology, Government of India, New Delhi
- Course Co-Ordinator DPAT, Garware Institute University of Mumbai
- Permanent Invitee: Indian Small-Scale Paint Association (ISSPA)
- Indian Resin Manufacturers Association (IRMA)
- All India Printing Ink Manufacturers Association (AIPMA)
- All India Plastics Manufacturers Association
- Hon. President: Indian Paint and Coating Association (Western Region)
- Life Member: Indian Plastics Institute
- Member Secretary: All Plastics Recycler's Association (APRA)
- Life Member: Society of Polymers
- Life member: Society of Plastics Engineers

RAMANAND N. JAGTAP

Ph. D (Tech)

Professor of Polymer Technology

Highlights of research work

Publications (peer reviewed) so far: 45
h-Index: 12
Citations : 628

Research interests :

- Use of renewable material for plastics and paints
- Living Radical Polymerization for Tailor-made Polymers i.e. ATRP, RAFT, NMP Nano materials and nanocomposite
- Recycling of e-waste
- Antimicrobial Polymer and Paints
- Heat reflective coatings
- Corrosion
- Eco friendly coating, Flame Retardant Coating
- U.V Radiation Polymerization, Microencapsulation.

Research students:

Ph.D. (Tech.) -
Completed - 11, Ongoing - 14
Ph.D. (Sc) -
Ongoing - 2
M.Tech. -
Completed 63, Ongoing - 14

Patents :

International - 02
Indian - 01

Sponsored projects:

Government - 4, Private- 11

Professional Activities (Membership of important Committees):

- Member of UAA
- Member governing council of ICPE
- Member of IPI
- Member of DSIR
- Vice President of Color Society
- Member, Society for Plastic Engineering

ANAGHA A. SABNIS

Ph. D (Tech)

Associate Professor in Applied Chemistry in CAS

Highlights of Research work:

Publications (peer reviewed) so far: 46
Patents - 02
h-Index: 13
Citations : 725

Research interests:

- Novel approached synthesis of Nano particles,
- Resin Synthesis from renewable resources
- Water Borne Coatings
- Conductive Coatings
- Anticorrosive Coatings
- Electric Insulation Coatings
- Flame Retardant Coatings
- Antimicrobial Coatings
- Polyurea Coatings Technology
- Green Route for Polymer Synthesis
- Waste Recycle in Polymer Industry
- Insulation Coatings

Research students:

Ph.D. (Tech.) -

Completed - 3, Ongoing - 4

M. Tech. -

Completed - 10, Ongoing - 10

Patents :
Indian - 01

Professional Activities (Membership of important Committees):

- Member, American Chemical Society
- Member, Committee for Raw materials for Paints, Varnishes and related Products Sectional Committee, CHD 21, Bureau of Indian Standards.
- Member, Color Society
- Member, Alumni Association, UDCT
- Member, Organization of Women in Science from Developing World (OWSD)
- Regularly invited as reviewer from international peer reviewed journals such as Progress in Organic Coatings, Journal of Coating Technology & Research, Pigment & Resin Technology, Polymer Composites, Journal of Applied Polymer Science, Express Polymer Letters, RSC Advances to name a few.
- Completed Faculty Development Programme on “CFD in Engineering Domain Using Computing Software” organized by VJTI, Mumbai from 8 th -12 th July, 2013
- Participated in Training Programme on “Patenting System in India” Organized by Rajiv Gandhi National Institute of Intellectual Property Management, Nagpur from 1 st - 5 th February, 2016.

Conferences

Invited speaker in spsi macro@ IISER Pune 19-22 Dec 2018

ADARSH RAO

Ph. D (Tech)

Assistant Professor of Polymer Technology

Highlights of research work:

Publications (peer reviewed) so far: 3
Patents: 02
Citations : 7

Research interests:

- Controlled/Living Radical Polymerization
- Polymer Nanocomposites, Nanocoatings,
- Polymer blends and alloys.
- Nanoparticle Synthesis
- Biobased PU, biodegradation, Antimicrobial coatings
- Recycling of Polymers

Research students:

M. Tech.

Ongoing - 13

Research publications:
International- 2, National- 1

Books - 1

Professional Activities (Membership of important Committees):

- Member of Color Society
- Member of UDCT Alumni Association

Conferences:

Invited speaker at Fifth International Conference on Polymer Processing and Characterization, ICPPC,10-12 Oct 2109

Second Prize in oral presentation,2nd National Conference on Materials for Advanced Technology and Applications, Aug 22-23,2019 at MIT Aurangabad

Participated and won first prize in oral presentation at REACT 27-28 Feb, 2019, LIT Nagpur.

Presented a paper at National center for Nanosciences and Technology, University of Mumbai ,Nanoexpress 15-16 March 2019, NCNNU Mumbai.

Secured Second rank in the course on Nanotechnology Advances and Challenges in Engineering Materials and Manufacturing, MHRD, Global Initiative for Academic Network organized at VJTI,8th-13th July 2019,Mumbai.

Publications

No	Title and Authors	Journal	Vol	Pages	Year
1	Development of Transparent Antimicrobial Scratch-Resistant Sol–Gel Coating for PMMA Surface, Aarti P. More, Swapnil R. Kokate, Shashank T. Mhaske	Arabian Journal for Science and Engineering	43(7)	3521-3528	2018
2	AgBr and AgCl nanoparticle doped TEMPO-oxidized microfiber cellulose as a starting material for antimicrobial filter, Sumit S. Lal, Shashank T. Mhaske	Carbohydrate Polymers	191(1)	266-279	2018
3	Development of tri-functional biobased reactive diluent from ricinoleic acid for UV curable coating application, Ganesh Phalak, Deepak Patil, Shashank Mhaske	Industrial Crops and Products	119(1)	9-21	2018
4	Design and synthesis of bio-based epoxidized alkyd resin for anti-corrosive coating application, Deepak M. Patil, Ganesh A. Phalak, Shashank T. Mhaske	Iranian Polymer Journal	27 (10)	709-719	2018
5	Influence of (methacryloxymethyl)methyldimethoxysilane on DCP cured EPDM/PP thermoplastic vulcanizates, Manoj Mali, Aditi Marathe, Shashank Mhaske	Journal of Vinyl and Additive Technology	24(4)	304-313	2018
6	Novel catechol-derived phosphorus-based precursors for coating applications, Megh Patel, Siddhesh Mestry, Ganesh Phalak, Shashank Mhaske	Polymer Bulletin	-	1-21	2019
7	Novel approach for the preparation of a compatibilized blend of nylon 11 and polypropylene with polyhydroxybutyrate: Mechanical, thermal, and barrier properties, A. A. Gadgeel, Shashank Tejrao Mhaske	Journal of Applied Polymer and Science	48152	1-21	2019
8	Kafirin-derived films for sustainable development by amidation and esterification, Umesh R. Mahajan, Shashank T. Mhaske	Polymer Bulletin	-	1-17	2019
9	o-Phenylenediamine-derived phosphorus-based cyclic flame retardant for epoxy and polyurethane systems, Sakshi Arora, Siddhesh Mestry, Durva Naik, Shashank T. Mhaske	Polymer Bulletin	-	1-21	2019
10	Synthesis of microporous interconnected polymeric foam of poly (glycidyl methacrylate-co-divinyl benzene-co-butyl acrylate) by using aqueous foam as a template, Arjit Gadgeel, S.T. Mhaske	Colloids and Surfaces A: Physicochemical and Engineering Aspects	563	193-205	2019
11	Novel phosphorus-containing epoxy resin from renewable resource for flame-retardant coating applications, Deepak M. Patil, Ganesh A. Phalak, Shashank T. Mhaske	Journal of Coatings Technology and Research	16(2)	531-542	2019
12	Synthesis of Polyorthanisidine by Interfacial Polymerization, Shashank Mhaske, Aarti More	Journal of Polymer & Composites	5(1)	1-6	2019

13	Cardanol derived P and Si based precursors to develop flame retardant PU coating, Siddhesh Mestry, Rucha Kakatkar, S.T. Mhaske	Progress in Organic Coatings	129	59-68	2019
14	Application of Poly (o-anisidine) Nanocomposite and PET Recycled Polyester Amide in Anticorrosive Coatings, Kunal V. Yeole, Aarti P. More, Shashank Mhaske	Journal of Polymer & Composites	2(2)	-	2019
15	Studies in Effect of Methyl Methacrylate to Butylacrylate Ratio on the Properties of TiO2/poly(methyl methacrylate-co-butylacrylate) Core–Shell Composite Nanoparticles Prepared by Microemulsion Polymerization, Bhushan J. Pawar, Pravin G. Kadam, Shashank Mhaske	Journal of Polymer & Composites	1(3)	-	2019
16	Studies in Effect of Alumina Nanoparticles on the Properties of Unplasticized Polyvinylchloride (PVC), Pravin Kadam, Ravindra Kute, Shashank Mhaske	Journal of Polymer & Composites	1(2)	-	2019
17	Effect of 2-aminobenzothiazole on antimicrobial activity of waterborne polyurethane dispersions (WPUDs), Siddhesh U. Mestry, Deepak M. Patil, Shashank T. Mhaske	Polymer Bulletin	76(4)	1899-1914	2019
18	Development of Primer as a Value-Added Product from Waste PET, Aarti P More, Shashank Mhaske	Journal of Thin Films, Coating Science Technology and Application	2(3)	-	2019
19	Newer Trends and Modifications in Anticorrosive Coatings, Aarti P. More, Shashank Mhaske	Journal of Thin Films, Coating Science Technology and Application	1(3)	-	2019
20	Synthesis of epoxy resins using phosphorus-based precursors for flame-retardant coating, Siddhesh Mestry, S. T. Mhaske	Journal of Coatings Technology and Research	16(3)	807-818	2019
21	Polyacrylate/silica hybrid materials: A step towards multifunctional properties, Ingita Tiwari, P. A. Mahanwar	Journal of Dispersion Science and Technology	40(7)	925-957	2019
22	Lignin: Renewable Raw Material for Adhesive,	Open Journal of Polymer Chemistry	9(2)	27-38	2019
23	Structure, mechanical and thermal properties of polypropylene based hybrid composites with banana fiber and fly ash, M B Kulkarni, S Radhakrishnan, N Samarth, P A Mahanwar	Materials Research Express	6(7)	1-34	2019
24	Advances in self-crosslinking of acrylic emulsion: what we know and what we would like to know, Sumit Parvate, Prakash Mahanwar	Journal of Dispersion Science and Technology	40(4)	519-536	2019
25	Study of Cross-Linking between Boric Acid and Different Types of Polyvinyl Alcohol Adhesive, Ravindra V. Gadhave, Prakash A. Mahanwar, Pradeep T. Gadekar	Open Journal of Polymer Chemistry	9(1)	16-26	2019

26	Cross-linking of Polyvinyl Alcohol/Starch Blends by Epoxy Silane for Improvement in Thermal and Mechanical Properties, Ravindra V. Gadhave, Prakash A. Mahanwar, Pradeep T. Gadekar	BioResources	14(2)	3833-3843	2019
27	Evaluation of Polyethylene Terephthalate Microfibers as Reinforcement for High Density Polyethylene and Effect of Silane treated fibers on Properties of the Composite, M. Praharaj Bhatnagar, P. Mahanwar	Journal of Materials and Environmental Sciences	10(12)	1250-1257	2019
28	Effect of glutaraldehyde on thermal and mechanical properties of starch and polyvinyl alcohol blends, Ravindra V. Gadhave,Prakash A. Mahanwar, Pradeep T. Gadekar	Designed Monomers and Polymers	22(1)	164-170	2019
29	Effect of vinyl silane modification on thermal and mechanical properties of starch-polyvinyl alcohol blend, Ravindra V. Gadhave,Prakash A. Mahanwar, Pradeep T. Gadekar	Designed Monomers and Polymers	22(1)	159-143	2019
30	Bio efficacy and Controlled Release Performance of Microencapsulated Hexaconazole against Powdery Mildew Disease on Field Pea, Vinayak Kamble, Manohar Sawant, Prakash Mahanwar	Journal of Materials and Environmental Sciences	10(6)	563-569	2019
31	Effect of gamma irradiation dose on phthalate free PVC dyed thin film dosimeter, P. Oberoi, C. Maurya, P. Mahanwar	Journal of Materials and Environmental Sciences	10(6)	533-542	2019
32	Mechanical, Thermal and Morphological Properties of Recycled and Virgin PC/ wollastonite Composite and its Compatibilization by SBC, Rohit S. Tarade, Prakash A. Mahanwar	Journal of Materials and Environmental Sciences	10(4)	357-366	2019
33	Insights into the preparation of water-based acrylic interior decorative paint: tuning binder's properties by self-crosslinking of allyl acetoacetate – hexamethylenediamine,Sumit Parvate, Prakash Mahanwar	Progress in Organic Coatings	126	142-149	2019
34	Recent developments in the volatile corrosion inhibitor (VCI) coatings for metal: a review, Sukanya Gangopadhyay, Prakash A. Mahanwar	Journal of Coatings Technology and Research	15(4)	789–807	2018
35	To study the effect of boric acid modification on starch–polyvinyl alcohol blend wood adhesive, Ravindra V. Gadhave, Pratik Sanjiv Kasbe, Prakash A. Mahanwar, Pradeep T. Gadekar	Journal of the Indian Academy of Wood Science	15(2)	190–198	2018
36	Review on Opacifying Polymeric Pigment: Reconceive Hiding, Siddhi Shah, Prakash A. Mahanwar	Journal of Coatings Science and Technology	-	59-69	2018
37	Synthesis and characterization of high bio-based content unsaturated polyester resin for wood coating from itaconic acid: Effect of various reactive diluents as an alternative to styrene, Linchon B. Mehta, Kunal, K. Wadgaonkar, Ramanand N. Jagtap	Journal of Dispersion Science and Technology	40(5)	756-765	2019

38	Enhancement of mechanical and barrier properties of LLDPE composite film via PET fiber incorporation for agricultural application, Pon Kumar R., Kunal Wadgaonkar, Linchon Mehta, Ramanand Jagtap	Polymer advanced technologies	30(5)	1-8	2019
39	Solvent-free microwave-assisted synthesis and characterization of polybenzoxazine as a thermochromic material for smart coatings, Linchon Mehta, Kunal wadgaonkar, Milind Suryawanshi, Ramanand Jagtap	Colloid and Polymer Science	297(5)	795-798	2019
40	Effect of carbonized watermelon rind powder on the mechanical and thermal properties of unsaturated polyester composites: A special insight to chemical resistance and value addition, Kunal K. Wadgaonkar, Linchon B. Mehta, Pratiket B. Bamane, Ramamoorthy Pon Kumar, Ramanand N. Jagtap	Advances in polymer technology	37(8)	3421-3431	2018
41	Synthesis of electroactive tetraaniline-based acrylic polyol by atom transfer radical polymerization for anticorrosive coating application, Gunawant P. Lokhande, Ramanand N. Jagtap	Journal of Coatings Technology and Research	15(6)	1239-1309	2018
42	Microstructural, thermal and rheological correlations to mechanical response of polyamide-6(glass filled)/ polyetherimide blend: effect of ethylene-octene copolymer on toughening of blend, Linchon B. Mehta, Kunal K. Wadgaonkar, Pratiket B. Bamane, Pon Kumar Ramamoorthy, Ramanand N. Jagtap	Journal of Materials Science	53(16)	11378-11392	2018
43	Anticorrosive and insulating properties of cardanol based anhydride curing agent for epoxy coatings, Wazarkar, K., Kathalewar, M., Sabnis, A.	Reactive and Functional Polymers	122	148-157	2018
44	Glycolytic depolymerization of PET waste using MP-diol and utilization of recycled product for UV-curable wood coating, Jamdar, V., Kathalewar, M., Sabnis, A.	Journal of Coatings Technology Research	15(2)	259-270	2018
45	Effect of pendant functional groups on curing kinetics and final properties of cardanol-based benzoxazines, Wazarkar, K., Sabnis, A.	Journal of Coatings Technology Research	15(3)	555-569	2018
46	Cardanol based anhydride curing agent for epoxy coatings, Wazarkar, K., Sabnis, A.	Progress in Organic Coatings	118	9-21	2018
47	Depolymerization Study of PET Waste Using Aminoethylethanolamine and Recycled Product Application as Polyesteramide Synthesis, Jamdar, V., Kathalewar, M., Sabnis, A.	Journal of Polymers and the Environment	26(6)	2601-2618	2018
48	Synergistic effect of P–S and crosslink density on performance properties of epoxy coatings cured with cardanol based multifunctional carboxyl curing agents, Wazarkar, K., Sabnis, A.	Reactive and Functional Polymers	128	74-83	2018
49	Phenalkamine curing agents for epoxy resin: characterization and structure property relationship, Wazarkar, K., Sabnis, A.S.	Pigment and Resin Technology	47	281-289	2018
50	Synthesis and characterization of ricinoleic acid derived monomer and its application in aqueous emulsion and paints thereof, Mhadeshwar, N., Wazarkar, K., Sabnis, A.S.	Pigment and Resin Technology	48	65-72	2019
51	UV-curable flame-retardant coatings based on phosphorous and silicon containing oligomers, Naik, D., Wazarkar, K., Sabnis, A.	Journal of Coatings Technology and Research	16	733-743	2019
52	A facile method for honey mediated bio-synthesis of nickel nanoparticles and its characterization, Prerana B Kane, Priyanka Jagtap, Ravindra D Kale and Adarsh R Rao	Reactive and Functional Polymers	122	148-157	2018

SUPPORT STAFF

A.K. Dicholkar
Lab assistant

S. Hasaye
Lab assistant

M.A. Ansari
Lab assistant

D.V. Karande
Lab assistant

C.S. Kumbhar
Lab assistant

B.S. Satardekar
Lab assistant

P. D. Patkare
Lab assistant

D.R. Kadam
Instrument Mechanic

STUDENTS' SEMINARS/PROJECTS/HOME PAPERS

RESEARCH PROJECTS Ph.D. (TECH)

Sr.	Name of Student	Previous Institute	Title	Guide
1	Lal Sumit	UDCT, NMU, Jalgaon	Modification of Biopolymer and its Potential Application for Sustainable Developments	Prof. S.T. Mhaske
2	Patil Ajit	UICT NMU, Jalgaon	Modification of Biopolymers by Atom Transfer Radical Polymerization Technique.	Prof. S.T. Mhaske
3	Phalak Ganesh	UICT NMU, Jalgaon	Modification of renewable materials as a green alternative for petrochemical based materials used in coating applications	Prof. S.T. Mhaske
4	Tated Sumit	Institute of Chemical Technology	Modification & Application of Biopolymers	Prof. S.T. Mhaske
5	Swapnil Kokate	Institute of Chemical Technology	Development of sustainable technologies in polymer and chemical engineering	Prof. S.T. Mhaske

6	Arjit Gadgeel	Institute of Chemical Technology	Stimuli responsive polymers in intelligent devices	Prof. S.T. Mhaske
7	Siddhesh Mestry	Institute of Chemical Technology	Development in Mineral trioxide aggregate (MTA)	Prof. S.T. Mhaske
8	Umesh Mahajan	Institute of Chemical Technology	PU -PCM for cold storage application	Prof. S.T. Mhaske
9	Wagh Santosh	North Maharashtra University, Jalgaon	Development Novel Multifunctional Additives	Prof. R.N. Jagtap
10	Nakula S.Bhutad	Institute of Chemical Technology	Synthesis of Micro-encapsulation and its applications	Prof. R.N. Jagtap
11	Amarjeet Patil	UDCT Jalgaon	Study the synthesis, characterization and applications for copolymers by living radical polymerization technique	Prof. R.N. Jagtap
12	Pratiket Bamane	Institute of Chemical Technology	Placing functionality to coating	Prof. R.N. Jagtap
13	Amadas Garje	Institute of Chemical Technology	Bio-based coating for textile application	Prof. R.N. Jagtap
14	Mustafa Kapadia	Institute of Chemical Technology	Novel resin of radiation curable coatings	Prof. R.N. Jagtap
15	Dyandeep Karad	Institute of Chemical Technology	FRP Polymer Composite	Prof. P. A. Mahanwar
16	Vinayak Kamble	Institute of Chemical Technology	Development of Microencapsulation of Control Release Formulation of Insecticides for Agrochemical Applications	Prof. P. A. Mahanwar
17	Rohit Tarade	Institute of Chemical Technology	Studies in Polymer Blends and Composites for Luggage Applications	Prof. P. A. Mahanwar
18	Amol Naikwadi	Institute of Chemical Technology	Development of Polymeric Phase Change Material for Maintenance Free Thermal Energy Storage	Prof. P. A. Mahanwar
19	Sukanya Gangopadhyay	Institute of Chemical Technology	Automotive Coating	Prof. P. A. Mahanwar
20	Fuke Chandan	Institute of Chemical Technology	Study of Electron beam and chemical crosslinked heat shrinkable sheets for Electronic application.	Prof. P. A. Mahanwar
21	Bhatnagar Manoj Praharaj	Institute of Chemical Technology	Polymer Nanofiber Synthesis and their Composites for Multitude Applications	Prof. P. A. Mahanwar

RESEARCH PROJECTS Ph.D. (SCIENCE)

Sr.	Name of Student	Previous Institute	Title	Guide
1	Bansode Savita	Institute of Chemical Technology	Biodegradable & Biocompatible polymer nanofiber for scaffold.	Prof. P. A. Mahanwar
2	Priyanka Oberoi	Mumbai University	Development of polymeric film dosing eater for sterilization of ionizing radiation	Prof. P. A. Mahanwar
3	Singh Hitesh K	Mumbai University	Shape selective isolation and surface chemical modification of nanocellulose	Prof. S.T. Mhaske

M. TECH. SEMINARS POLYMER

Sr.	Students Name	Roll Number	Seminar Topic	Guide
1	Ajinkya Ogale	18POL201	Characterization and synthesis of basalt fibre reinforced plastics for industrial laminates	Prof. P. A. Mahanwar
2	Aparna Guchait	18POL202	Bio-based non-isocyanate PU	Dr. A.S. Sabnis
3	Aswathy M.	18POL203	Light responsive polymer	Prof. S.T. Mhaske
4	Kartik Shukla	18POL205	Phase change material for low temperature clothing application	Prof. R.N. Jagtap
5	Madhurima Chakraborty	18POL206	Piezoelectric polymers and its use in tactile sensors	Prof. R.N. Jagtap
6	Manisha Singh	18POL207	Bacterial degradation of Syrenic polymer	Prof. P. A. Mahanwar
7	Md. Rizwan	18POL208	Synthesis of bio based elastomer	Prof. R.N. Jagtap
8	Mrunalini Padole	18POL209	Biodiesel from waste cooking oil	Dr. A.S. Sabnis
9	Pawan Gawali	18POL210	Recycling of PET and Nylon by microwave radiation	Dr. A.S. Sabnis
10	Rahul Patil	18POL211	PU-PCM for cold storage application	Prof. S.T. Mhaske
11	Ravina Bhivgade	18POL212	RAFT Polymerization	Dr. A.R. Rao
12	Shraddha Yeolekar	18POL213	Modification of biodegradable polymers	Dr. A.R. Rao
13	Sidharth A K	18POL214	High Impact polymer	Prof. R.N. Jagtap
14	Suriya V K	18POL215	Encapsulation of nanoparticles and its applications	Dr. A.R. Rao
15	Vineeth S K	18POL216	Modification of cellulose nanocrystal for pH responsive application	Prof. S.T. Mhaske
16	Md. Tayyib S. M.	18POL217	Solid Propellent	Prof. P. A. Mahanwar
17	Chinmayee Sahoo	18POL218	Synthesis and characterization of silicate polyurethane foam for construction application	Prof. P. A. Mahanwar

M. TECH. SEMINARS SURFACE COATING

Sr.	Students Name	Roll Number	Seminar Topic	Guide
1	Akash Borkar	18SUR201	Atom Transfer Radical Polymerisation	Dr. A.R. Rao
2	Anwesha Das	18SUR202	Hollow Particles for Antireflective Coatings	Prof. R.N. Jagtap
3	Ashutosh Patil	18SUR203	Electrically conductive adhesive	Prof. R.N. Jagtap
4	Basudev Biswal	18SUR204	Conductive polymer as anticorrosive additive in paint	Prof. R.N. Jagtap
5	Eldhose Chackochan	18SUR207	Solvent based polyurethane adhesives	Prof. R.N. Jagtap
6	Lorina Dash	18SUR208	synthesis and characterization of water-based energy storage decorative coating by using Phase Change Materials.	Prof. P.A. Mahanwar
7	Nishad Rajendra Vaidya	18SUR209	porous fibers using electrospinning	Dr. A.R. Rao
8	Pavan Yogesh Borse	18SUR210	Synthesis of self-healing coating using encapsulation technology	Prof. S.T. Mhaske

9	Pooja Chavhan	18SUR211	Recycle of polyurethane	Dr. A.S. Sabnis
10	Pratik Banorkar	18SUR212	Corrosion protection of Metal substrates using nanoparticles dispersed Layer-By-Layer technique	Prof. S.T. Mhaske
11	Praveen Kumar	18SUR213	Recent Advances in Anti-Biofouling Coatings	Prof. R.N. Jagtap
12	Pritam Dhawale	18SUR214	Synthesis and characterization of thermoset microencapsulated inorganic phase change material and their application in industrial coating	Prof. P.A. Mahanwar
13	Sachin Mapari	18SUR215	Recent developments in pressure sensitive adhesive	Prof. S.T. Mhaske
14	Snehal Subhash Bunde	18SUR216	Recent Advancements in Catalysts for Polyesterification	Dr. A.S. Sabnis
15	Somesh Sanjay Bhagure	18SUR217	Life Cycle Analysis of Pvc	Dr. A.R. Rao
16	VidhuKrishnan Niker	18SUR218	Fire retardant based on epoxy/ Polyurethane	Prof. S.T. Mhaske
17	Jayshree Vaniram Rathod	18SUR219	Microencapsulation for Controlled Pesticide Release	Dr. A.S. Sabnis

M. TECH. PROJECT POLYMERS

Sr.	Students Name	Roll Number	Project Topic	Guide
1	Ajinkya Ogale	18POL201	Characterization and synthesis of basalt fibre reinforced plastics for industrial laminates	Prof. P. A. Mahanwar
2	Aparna Guchait	18POL202	Bio-based non-isocyanate PU	Dr. A.S. Sabnis
3	Aswathy M.	18POL203	Synthesis and charecterization of Light responsive polymer	Prof. S.T. Mhaske
4	Kartik Shukla	18POL205	UV curable coating for glass substrate	Prof. R.N. Jagtap
5	Madhurima Chakraborty	18POL206	Carbon dioxide sequestration by beta – cyclodextrin	Prof. R.N. Jagtap
6	Manisha Singh	18POL207	Bacterial degradation of Syrenic polymer	Prof. P. A. Mahanwar
7	Md. Rizwan	18POL208	Synthesis of Polyurethane structural adhesives	Prof. R.N. Jagtap
8	Mrunalini Padole	18POL209	Biodiesel from waste cooking oil	Dr. A.S. Sabnis
9	Pawan Gawali	18POL210	Recycling of PET and Nylon by microwave radiation	Dr. A.S. Sabnis
10	Rahul Patil	18POL211	Development in PU – PCM for Cold Storage	Prof. S.T. Mhaske
11	Raveena Gautam Bhivgade	18POL212	Synthesis of PU elastomer by Arget ATRP	Dr. A.R. Rao
12	Shraddha Milind Yeolekar	18POL213	Study and application of surface-initiated polymers via atom transfer radical polymerization	Dr. A.R. Rao
13	Sidharth A K	18POL214	Tungsten oxide nanoparticle incorporated polymer composite for high performance application	Prof. R.N. Jagtap
14	Suriya V K	18POL215	Synthesis of acrylic copolymer for compatibilization of RPET blends	Dr. A.R. Rao
15	Vineeth S K	18POL216	Isolation and chemical modification of nanocellulose	Prof. S.T. Mhaske
16	Md. Tayyab	18POL217	Solid Propellent	Prof. P. A. Mahanwar
17	Chinmayee Sahoo	18POL218	Synthesis and characterization of silicate polyurethane foam for construction application	Prof. P. A. Mahanwar

M. TECH. PROJECT SURFACE COATING

Sr.	Students Name	Roll Number	Project Topic	Guide
1	Akash Borkar	18SUR201	Study and application of dispersant by ATRP and its application in coating	Dr. A.R. Rao
2	Anwesha Das	18SUR202	Glass coating using polyurethane dispersion	Prof. R.N. Jagtap
3	Ashutosh Patil	18SUR203	Self-crosslinking in VAM based adhesive	Prof. R.N. Jagtap
4	Basudev Biswal	18SUR204	Self-stratified coating as a sustainable coating	Prof. R.N. Jagtap
5	Eldhose Chackochan	18SUR207	Erosion protection coating for wind turbine blades	Prof. R.N. Jagtap
6	Lorina Dash	18SUR208	Synthesis and characterization of energy storage decorative coating by using organic phase change material	Prof. P.A. Mahanwar
7	Nishad Rajendra Vaidya	18SUR209	Synthesis and characterization of PMMA and CA nanofibers by electrospinning as an additive for paint application and membrane application for Waste water treatment	Dr. A.R. Rao
8	Pavan Yogesh Borse	18SUR210	Development of acrylic based resin for self-cleaning super hydrophilic application	Prof. S.T. Mhaske
9	Pooja Chavhan	18SUR211	Synthesis of halogen free reactive flame-retardant polyols	Dr. A.S. Sabnis
10	Pratik Banorkar	18SUR212	Synthesis of nanocontainers for corrosion protection of metal substrate by layer by layer technique	Prof. S.T. Mhaske
11	Praveen Kumar	18SUR213	Self-healing coatings based on disulphide metathesis	Prof. R.N. Jagtap
12	Pritam Dhawale	18SUR214	Synthesis and characterization of microencapsulated PCM to develop thermoregulating paint	Prof. P.A. Mahanwar
13	Sachin Mapari	18SUR215	Development of biobased epoxy pressure sensitive adhesive	Prof. S.T. Mhaske
14	Snehal Subhash Bunde	18SUR216	Synthesis of biobased UV curable coating	Dr. A.S. Sabnis
15	Somesh Sanjay Bhagure	18SUR217	Synthesis and characterization of PMMA based nanofibers-based coatings for clothes and packaging application via electrospinning technique	Dr. A.R. Rao

16	VidhuKrishnan Niker	18SUR218	Synthesis of biobased flame-retardant curative for epoxy/polyurethane	Prof. S.T. Mhaske
17	Jayshree Vaniram Rathod	18SUR219	Non – isocyanate Polyurethane	Dr. A.S. Sabnis

Placement and Higher Studies B. Tech Polymer

Sr.	Name	Roll Number	Placed At	Package In lacs	Remarks
1	KARWA VINAY SANJAY	15POL1001	Piddilite	6	
2	JAMB MAHESH NANDU	15POL1002			Higher Studies
3	PATEL JAY KALPESH	15POL1003	ZS Associates	6.7	
4	AMANAGI CHARUSHILA UDAY	15POL1005	Bajaj Auto	8.72	
5	MOTA PREET CHETAN	15POL1006	Varroc	4	
6	SALVI AKSHAY SUNIL	15POL1007	JSW Paints	5	
7	ZOPE SHUBHAM HEMENT	15POL1009	Nilkmal	4	
8	NAIK DURVA ARUN	15POL1010			Higher studies
9	KAKAD SANKET SANJAY	15POL1011	Sighania Group	5.5	
10	ADITI GOYAL	15POL1012	Piddilite	6	
11	SURYAWANSHI YOGESH GOKUL	15POL1014	JSW Paints	5	
12	DIGHE NIHAR UNMESH	15POL1016	Clarivate	5	Higher studies
13	IYER DIVYA JAYARAM	15POL1017	University of California		Higher studies
14	SURVE TEJAS AVINASH	15POL1018	Piddilite	6	
15	DABREO MCNIEL THOMAS	15POL1019			Higher studies

Placement and Higher Studies B.Tech Surface Coatings

Sr.	Name	Roll number	Placed At	Package In lacs	Remarks
1	Wani Vishal Sanjay	15SUR1002	Bajaj Auto	8.72	
2	Naiknavare Yash Jayant	15SUR1003	XLRI		MBA IN HR
3	Bondar Rahul Sunil	15SUR1004	Bajaj Auto	8.72	
4	Adhia Vishva Manish	15SUR1005	EPFL Swith		Master
5	Kalavalapalli Tejas	15SUR1007	Delft University of Technology		MS in material Science
6	Pathan Arsalaan Nisar	15SUR1009	EHD		
7	Gharat Yogesh Naresh	15SUR1010	Varroc	4	
8	Shewale Kunal Sanjay	15SUR1011	Decathloan		
9	Hazari Sakshi Devisingh	15SUR1012	Goldstab Organics	5	
10	Chavan Yash Ramesh	15SUR1013	JSW Paints	5	
11	Patil Kaveri Satyawan	15SUR1014	Goldstab Organics	5	
12	Bhide Ankur Abhijeet	15SUR1015	Kansai Nerolac	5	
13	Das Shubhangi Parthasarathi	15SUR1016	Purdue University		MS
14	Pal Kajal Rammurthy	15SUR1017			

15	Damani Vidhika Shashikant	15SUR1018	University of Delaware		Ph. D
16	Gandhi Yash Tushar	15SUR1020	XLRI		MBA IN HR
17	Monga Sidharth Jaideep	15SUR1021	Berger Paints	6.6	
18	Kunal Kisan Jadhav	14SUR1012	Kansai Nerolac	5	MBA IN HR

Placement and Higher Studies M. Tech Polymer

Roll Number	Name	Job / PhD.	Placement	CTC
17POL201	Ahmad Hamza	Job	DHARAMSI MORARJI CHEMICAL CO.LTD	5
17POL202	Animesh Kumar	Job	Bhansali Engineering Polymers Ltd.	5.5
17POL204	Devesh Kothari	Job	PolyOne	5.5
17POL205	Dwij Kamlesh Dave	Job	GARGI HUTTENES-ALBERTUS PVT. LTD.	5
17POL206	G S Jyoti Darsan Mohanty	Job	APPL	5
17POL207	Gauri Prakashrao Deshmukh	Job	burger	6.5
17POL209	Kamalakanta Maikap	Job	Murugappa textile	5.5
17POL210	Nagarajaniyer C	Job	Goldstab organics Pvt. Ltd	5.5
17POL211	Omkar Subhash Borde	Job	Berger Paints	6.5
17POL213	Priyanka Ashok Mojad	Job	IVP	5.15
17POL214	Rahul Singh	Job		
17POL215	Sabyasachi Sudhakar Behera	Job	Berger Paints	6
17POL216	Shruti Shashank Parkhe	Job	Decathloan India	5.85
17POL217	Sonam Pratik Khuntia	Job	Expanded polyol	5.5
17POL218	Vidula Vijay Ramdugwar	Job	Piddilite	6.75
16POL206	Junaid Parkar	Job	IVP	5.15

Placement and Higher Studies M. Tech Surface Coating

Roll No	Name	Job/Phd	Placement	CTC
17SUR201	Abhijit Das	Job	Pidilite	6.75
17SUR202	Aishwarya Girish Deshmukh	Job	Dow	11.3
17SUR203	Ajay Ashok Patil	Job	Nerolac	5.5
17SUR204	Akshay Balkrishna Deshmukh	Job	IVP	5.15
17SUR205	Bhagyashree Vasantrao Waghmare	Job		
17SUR206	Deepali Rajendra Patil	Job	John Deere	7.31
17SUR208	Jeganathan R	other	Self-Business	
17SUR209	Milind Rajendra Suryawanshi	Job	IVP	5.15
17SUR210	Pooja Pramod Deore	Job		
17SUR211	Rushabh Rajaram Ghadge	Job		
17SUR212	Shailesh Sanjay More	Job	Decathloan	5.85
17SUR213	Shubham Pradeep Potdar	Job	Pidilite	6.75
17SUR214	Anurag Brijendra Gupta	Job	Dow	11.3

GOVERNMENT /PRIVATE GRANT RECIEVED:

1	Sponsor	BRNS
	Title	Development of plasticizer for the melt processing of gaur gum for biodegradable films
	Duration	3 yrs.
	Total amount	Rs.31,70,400
	Principal Investigator	Professor R. N. Jagtap
	Research Fellow	Kunal Wadgaonkar
2	Sponsor	UGC – DRS – II (SAP - II)
	Title	Controlled radical Polymerization
	Duration	5 yrs.
	Total amount	Rs.31,50,000
	Principal Investigator	Professor R. N. Jagtap
	Research Fellow	Magdalene David
3	Sponsor	TEQIP
	Title	Formulating UV curing resin for 3D printing and other general applications
	Duration	18 months
	Principle Investigator	Professor R. N. Jagtap
	Research Fellow	Prashil Desai
4	Sponsor	Dorf Ketal Chemicals Pvt. Ltd
	Title	High performance coating material
	Duration	3 yrs.
	Total amount	Rs 23,89,500
	Principal Investigator	Dr. Anagha Sabnis
	Research Fellow	Abhinaya N
5	Sponsor	John Deere
	Title	Eco – Friendly and dirt pick up resistance coating for off highway products
	Duration	3 yrs.
	Principle Investigator	Prof. P. A. Mahanwar
	Research Fellow	Sukanya Gangopadhyay
6	Sponsor	AICTE/NDF
	Title	Study of micro-capsulated Phase change materials for thermal buffering applications
	Duration	3 yrs
	Principle Investigator	Prof. P. A. Mahanwar
	Research Fellow	Tejashree Amberkar
7	Sponsor	SDKDCH, Nagpur
	Title	Development of Mineral Trioxide Aggregates
	Duration	3 yrs.
	Total amount	Rs 19,50,000
	Principle Investigator	Prof. S.T. Mhaske
	Research Fellow	Siddhesh Mestry
8	Sponsor	TEQIP
	Title	Development of nanocellulose from biomasses and its modification for the application in new generation RO membrane
	Duration	18 months
	Total amount	Rs. 5,85,000
	Principle Investigator	Prof. S.T. Mhaske
	Research Fellow	Dhananjay Patil
9	Sponsor	Covestro India Pvt. Ltd
	Title	PU – PCM for cold storage application
	Duration	2 yrs.
	Total amount	Rs. 23,20,000
	Principle Investigator	Prof. S.T. Mhaske
	Research Fellow	Umesh Mahajan
10	Sponsor	Lubrizol India Pvt. Ltd.
	Title	Development of Thermoplastic Polyurethane (TPU) Lubrizol Ltd.
	Duration	3 yrs.
	Total amount	Rs. 30,00,000
	Principal Investigator	Professor S. T. Mhaske
11	Sponsor	Unilever Industries Limited.
	Title	Chain enhancement of post-consumer Recyclates and their applications. Unilever
	Duration	1 year
	Total amount	Rs. 15,67,800
	Principal Investigator	Professor S. T. Mhaske

SEMINARS/LECTURES/CONFERENCES/SYMPOSIA/WORKSHOPS/SUMMER OR WINTER TRAINING SCHOOLS ATTENDED/ORAL OR POSTER PRESENTATIONS

- Mr. Rohit Tarade, student (Ph.D.) under supervision of Prof. P.A. Mahanwar delivered the oral presentation on “Rejuvenation of recycled polycarbonate with ethylene methylacrylate for enhancement of impact properties” in International conference held in Kathmandu, Nepal.
- Mr. Ganesh Phalak, student (Ph.D.) under supervision of Prof. S. T. Mhaske delivered the poster presentation on “Synthesis of thermally curable guaiacol based poly (benzoxaine-urethane) coating for corrosion protection on mild steel” in International conference of green chemistry held in Berlin, Germany.
- Mr. Amol Naikwadi, student (Ph.D) under supervision of Prof.P.A. Mahanwar delivered the oral presentation on “Synthesis and characterization of PMMA-co-BA/Capric acid solid –liquid PCM for thermal energy storage” in International conference held in Kathmandu, Nepal.
- Mr. Suriya V K and M/s. Shraddha Yeolekar student (M. tech, Polymer and Surface Engineering) under supervision of Dr. A R Rao participated and won first prize in oral presentation on topic “Synthesis and application of functional Styrene Acrylate block copolymers” at REACT 2019, LIT Nagpur.
- Mr. Somesh Bhagure, Mr. Nishad Vaidya and M/s. Ravina Bhivgade student (M. tech, Polymer and Surface Engineering) under supervision of Dr. A R Rao participated in poster presentation on topic “A review: Special Effect Pigments” at REACT 2019, LIT Nagpur.

EVENTS ORGANIZED

Sr.	Title of Workshop/Seminar/Conference	Speaker
1	Saurdip Chemical industries Pvt Ltd.	Visiting Fellowship Lecture
2	Characterization of polymers and polymeric products - 2019	Plenary Lectures, Paper / Poster Presentations
3	Industrial expert lecture	Mr.Frank Kleinsteinberg (Senior Manager: Evonik Resource Efficiency)

PHOTO GALLERY

SAURDIP CHEMICAL INDUSTRIES PVT LTD VISITING FELLOWSHIP LECTURE. 2019

Industrial expert lecture by Mr. Frank Kleinsteinberg
(SENIOR MANAGER: EVONIK RESOURCE EFFICIENCY) 2019

PROFESSOR S. T. MHASKE RESEARCH GROUP

(From left): Siddhesh Mestry, Shubham Chaudhary, Rushabh Gahdge, Gopi Pramanik, Aswathy M., Shweta Amrutkar, Haresh Bhanushali, Saurav Sarkar, Ajay Patil, Pawan Borse, Abhishek Padhi, Pratik Barnorkar, Ganesh Phalak, Hitesh Kumar Singh, Umesh Mahajan

PROFESSOR P. A. MAHANWAR RESEARCH GROUP

(From left) : *Manisha Singh, Bhagyashree Waghmare, Leema Joseph, Chandan Fuke, Ajinkya Ogale, Rajendra, Lorina Das, Divya Khetal, Chinmayee Sahoo, Rohit Tarade, Bhuwanesh Sharma, Savita Bansode, Priyanka Oberoi, Manoj Bhatnagar, Amol Naikwadi, Sukanya Gangopadhyay, Pritam Dhavale, Tejashree Amberkar*

DOCTOR A. R. RAO RESEARCH GROUP

(From left): *Ravina Bhivgade, Akash Borker, Ganesh Kshirsagar, Shrikant Raut, Jimit Salunke, Somesh Bhagure, Harshwardhan Salunkhe, Nikhil Patel, Aniket Mali, Nishad Vaidya, Shraddha Yeolekar*