



**DEPARTMENT OF
FIBRES AND
TEXTILE
PROCESSING
TECHNOLOGY**

ABOUT THE DEPARTMENT



PROFESSOR (DR.) RAVINDRA V. ADIVAREKAR

B.Sc., B.Sc. (Tech.), M. Sc. (Tech.), Ph. D. (Tech)

Professor in Fibre Chemistry

Head, Dept. of Fibres and Textile Processing Technology

It was about 81 years ago that the Textile Industry was progressing in-full swing in city like Mumbai, and Ahmedabad. Many other industries were not even born, in that pre-independence era. It was the time, Sir Vitthal Chandavarkar was V.C. of University of Mumbai and also the Chairman of Mill Owners' Association. He and his industrialists friends donated 200 lakhs for creation of an educational and research institute catering to the need of Textile industry and that's how this UDCT, then called as University Department of Chemical Technology, under the wings of Mumbai University, was established with two disciplines: Textile Chemistry and Chemical Engineering offering a 2 year Degree course post B.Sc. chemistry, called as B.Sc.Tech. A number of new disciplines of chemical technology, pharmacy, and biotechnology were opened up over the years as per the need of the nation and all these various technological disciplines have played a paramount role in building the respective industry in the country. Most of the Professional Bodies

of the Technocrats of these disciplines, even today operate from the portals of excellence of UDCT.

Thus the Department of Fibres and Textile Processing Technology (FTPT), formerly known as Textile Chemistry section has the unique distinction of being one of the two disciplines (other being Chemical Engineering), with which this institution- ICT (formerly UDCT) started in the year 1933. The Department conducts B.Tech. course with an intake capacity of 34, which is highest among all the B.Tech. courses of ICT. The course involves study of chemistry and manufacture of Fibres, their chemical processing such as bleaching, dyeing, printing and finishing. It further encompasses the study of chemistry as well as application of various kinds of chemicals, dyes, thickeners, and finishing auxiliaries which are used in chemical processing of textile fabrics and garments. Textile chemistry also involves knowledge of green chemistry, biotechnology and nanotechnology with special reference to chemical processing of textiles.

The post graduate courses of M. Tech., M.Sc. in Textile Chemistry and Ph.D. (Tech.), Ph.D. (Textile Chemistry) attract a large number of students and so far more than 2309 graduates and 554 post graduates have passed out from this Department. The faculty of the Department has good interaction with the industry. A number of industries have been benefited by the technical advice given by the faculty. There have been a number of industrial and governmental research projects in which problems of mutual interest are investigated and the students as well as the Department have been benefitting by this interaction. The department is recognized as Centre of Advanced studies in "Physicochemical aspects of Textile, Fibres, Polymers and Dyes" presently in Phase VII, since 1962. The department also received a grant of Rs. 1.55 crores recently under DST-FIST programme which is highest so far for the department. The department has played an important role in evaluating TUFs under Ministry of Textiles, GOI. The faculty is engaged in high quality fundamental as well as applied

research and they have got over 1000 publications in Indian and International journals as well as reputed fellowships to the credit from recognized institutions in India and abroad.

It gives us immense pleasure to put on record that in the month of August 2013, all the Textile department faculty were invited to Ethiopia by Textile Ministry of Ethiopia to do the GAP analysis of Ethiopian Textile Industry and Universities and submit a proposal to make them internationally competitive. The project is being successfully implemented. So far 13 M Tech, 1 M Sc and 1 Ph D fellow from ETIDI has been admitted in ICT. The dept faculty along with industry expert has conducted 6 Refresher courses, 1 Technical

Awareness seminar and 4 International Conference in Ethiopia.

After the globalization of the markets with border less trade, textile manufacturing activities are shifted to country like India which is fast developing economy. Today Textile being one of the fundamental needs of human being, it is a mother industry, next to only agriculture sector, involving over 60 million people. The business is fast growing and will soon touch around US\$ 100 Billion. However, in the border less trade many multinational brands are competing and the critical area of chemical processing of textile fabrics and garments requires tremendous amount of consolidation in

terms of well trained manpower which can keep pace with latest technological operations and demand of stringent quality parameters in shortest delivery time giving competitive edge to the manufacturers. There is a huge shortage of Textile Processing graduates in the core textile industry as well as in multinational and reputed Indian manufacturers of dyes, chemical and auxiliaries. Thus the scope for graduates and postgraduates of this department is enormous and such a demand with every passing day will only be rising given that consumption of apparels and technical textiles in India and abroad is increasing at galloping rate.



FACULTY



Professor (Dr.) Ravindra V. Adivarekar

B.Sc., B.Sc. (Tech.), M. Sc. (Tech.), Ph. D. (Tech)

Professor in Fibre Chemistry

Head, Dept. of Fibres and Textile Processing Technology

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- Life Member of Textile Association (India)
- Life Member of Indian Fibre Society
- Life member of Natural Fibre Society
- Editor of Journal of Textile Association
- Visiting faculty for Sophia Polytechnic, Mumbai.
- Member of selection committee, College of Home Science, Nirmala Niketan, Mumbai.
- Member of Technical/ Research advisory committee of Wool Research Association
- Member of Board of studies and faculties of The Maharaja Sayajirao University of Baroda in Textile chemistry
- Member of General Advisory Committee for Research and Liason of BTRA for the period 2011-2014
- Member of 'Core Group' to function as a Sub-committee of the Council for COE in Sportech at WRA
- Member as Expert in

Department Research Committee at Textile Manufacturers Department, Veermata Jijabai Technological Institute

- Member of RRC, Department of Physics, ICT
- Member of Editorial Board, IJFTR

HIGHLIGHTS OF RESEARCH WORK AND ITS IMPACT (MAXIMUM TWO SINGLE-SPACED PAGES WITH FIGURES/DIAGRAMS ETC.):

a. Enzyme Manufacturing and Application

Microbial proteases are an important group of enzymes that can have application in various industries. The feasibility of the use of proteases in textile application depends on these factors. There has been an increased interest all over the world to utilize the waste for the production of value added products. This results in reduced environmental pollution and improved economics of processing. In this project sincere attempt was made to screen microorganisms from abattoir waste, poultry waste, fishery waste, etc which are rich sources of protease

producing microorganisms. The further purification of enzyme and its application in various steps involved in textile wet processing such as enzymatic treatment of wool, degumming of silk and in detergent industry etc will be studied.

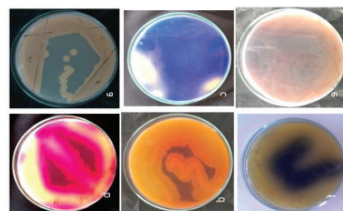


Fig.1 Enzyme manufacturing

b.Natural Dyes for Textiles and Cosmetics

The current research work focused on the modification of natural dyes with azo chromophoric system and other possible substituents (auxochromes) to modify its substantivity and tinctorial capacity to overcome inherent limitations of natural dyes. The synthesized dyes will be applied on polyester, cotton, polyester/cotton blend to yield level dyeing, good build-up, complete colour gamut.



Fig.2 Dyeing and Printing of Textile

The currently used colorants are almost exclusively made from nonrenewable resources such as fossil oils. The production of the synthetic colorants is economically efficient and technically advanced with colors covering a wide range. However synthetic colorants are facing challenges such as dependence on non renewable and environmentally friendly resources for production of natural colorants before synthetic dyes were invented, but in very low efficiency. The current research work focus on the Isolation, Extraction & characterization of new Biocolorants from natural sources like plants, animals and microorganisms, to study their unique properties like Anti-UV, Anti-Microbial, Anti-oxidant Activity etc and their application as colorant in different industries will be studied.

c. Medical textile

Studies in Blood Clotting Materials

The work is going on to develop a solution for clotting of blood in economical way comparable to the other materials available in commercial market without leading to any side effects such as skin irritations, damage the healthy skin etc.



Fig.3 Blood clotting material and Scaffolds

Studies in biopolymers

The work is being carried out in order to contribute to the development of novel biomaterial and their blends for the application as temporary scaffolds in health care or wound healing mechanisms. The addition of herbal products as a drug for curative purpose can also be new and imminent contribution to field of drug delivery through scaffolds. This can be achieved through imparting functional groups in the bio-materials used in scaffold engineering. It can open new prospects in this multidisciplinary field.

d. Non-conventional natural fibres for composites

Glass, carbon and aramid fibres are conventional fibres which are generally used in composite. Composite reinforced with these fibres are having high mechanical and thermal properties. But these fibres are not completely environment friendly and have very high cost. Industry is searching for alternatives to overcome the short comings of these fibres. One such alternative which has never been sought before is fibres extracted from Saccharum Munja Grass. From the experiments, it can be inferred that this fibre has good potential to r Studies in Medical Textiles

place glass fibre as reinforcement in composite. Limitations of this fibre can be overcome by its modification. Some unexplored fields of application for this fibre need to be studied.



Fig.4 Composite made from natural fibre

f. Green Processing of Textiles
Selective Treatment and Recycling of Textile Effluent

Attempt is made to carry out segregation of waste streams and waste recovery, recycle and reuse for waste reduction application. A simple approach is being followed to treat the wastewater after each process itself by means of simple purification techniques, to avoid complexities on compounding of effluent for its treatment at ETP (Effluent Treatment Plant). The waste water can also be utilized in the same process flow to create a closed loop system. There are two main agenda of this research project, to save the water in textile industry and to minimize the effluent load produced in processing treatments.

Eco friendly processing of textile materials

The present application is directed to a method of waterless processing of textile materials using solvents. Dyeing of textile material can be done by using solvents. The properties of the solvent are closely related to the design/operation of a solvent based separation technique that is

employed to perform a specified separation task. Separation involves removal of one or more of the constituent parts from a mixture. There are two main agenda of this research project, first is to save the water in textile industry which can be solved by the solvent mechanism dyeing and second is to minimize the effluent load produced in processing treatments which can be solved by the solvent separation technique.

g. Fabric conditioners

This was a consultancy project done under industry affiliation with one of the leading Industry. It was done in two parts; Various types of actives (conditioners) supplied were applied on 100% cotton and polyester fabric by exhaust method. The samples were evaluated for whiteness/yellowness index, fabric feel (softness), water repellence, crease recovery test. Application of active (SDBS, sodium dodecyl

benzene sulphonate) on 100 % cotton and polyester woven fabric was also carried out and their adsorption was measured.

h. Novel Processing Techniques

Studies in Graphite for Textiles

An approach has been made of synthesising graphene from graphite as well as its application on textile relating to its unique characteristics that can give a value addition to the field of textiles. The performance properties of textile materials is thought to be enhanced by the graphite based materials whose technology is still thought to be a wonder one in the current research of science and technology.

g. Novel flame retardancy

In present study we focus on the biodegradable and eco-friendly flame retardant. The main important factor for flame retardant property is to have element like Nitrogen and Phosphorous. In nature

proteins are the main source of nitrogenous compounds. To have more effect proteins could be incorporated with phosphorous compounds. The main goal in this study to extract biodegradable material from natural origin substances and their chemical modification for better flame retardant property.

PUBLICATIONS (PEER REVIEWED) SO FAR: 123

PATENTS: 02

CONFERENCE PROCEEDINGS/PAPERS/ POSTER: 66

SEMINARS/LECTURES/ ORATIONS DELIVERED: 24

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 07

INTEGRATED PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 02

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 42

h-Index- 10
Citations: 318



(Dr.) (Mrs.) Usha Sayed

B.Sc., B.Sc. (Tech.), M.Sc (Tech.), Ph. D. (Tech.)

Associate Professor

EDUCATIONAL QUALIFICATIONS:

- Ph.D Tech from Institute of chemical technology [UICT aka UDCT] Matunga, University of Mumbai, India. Title of thesis: Studies in dyeing .1997. Grade I
- M.Sc Tech From Institute of chemical technology [UICT aka UDCT] Matunga, University of Mumbai, India. Partly by papers and partly by research.1983. I class
- B.sc Tech In textile chemistry 1980 I class with Honours From Institute of chemical technology [UICT aka UDCT] Matunga , University of Mumbai,
- B.sc Chemistry Physics

I class honours with Distinction {1977} From Mumbai University SIES college Sion, Mumbai

- SSC Pune board with I class distinction from Auxilium convent ,Mumbai

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- Fibers society of America
- Member of Alumni Association
- Member of the Committee for Women's Welfare, Mumbai University.
- Member of board of studies Baroda university textile department.
- Member of AATCC
- Life member of Natural Fibre society, Culcutta

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT (MAXIMUM TWO SINGLE- SPACED PAGES WITH FIGURES/DIAGRAMS ETC.)

Studies in Finishing

- Antibacterial garments and fabrics are in demand in the present scenario. Thus innovative methods products and machineries continue to dominate the textile market.
- The present work was undertaken to add functional value namely antibacterial property by tangentially different approach.
- Tetracycline hydrochloride was chosen for its cost effectiveness and it possesses a wide range of antibacterial property against Gram-positive and Gram-negative

bacteria, Tetracycline hydrochloride was applied on Silk, Wool and Nylon by the exhaust process and optimization was carried out. The performance properties of the above treated silk were very encouraging and a wide range of shades were simultaneously obtained along with the good fastness properties.

- This is a novel technique introduced for imparting antimicrobial property which is non-leaching type, easy to apply, compatible with existing dyeing process, cost effective and require less effluent treatment.
- Tetracycline Hydrochloride being a non-toxic in nature can be worn next to skin. The end-use can be in various sectors in apparels, kid's garments, technical textile, medical textile etc.

Studies in synthesis of and formulations of specialty chemicals and their applications

- The process modification in manufacturing and synthesis of chitosan and its derivatives have been carried out. The purity of the products obtained by such modification of pH, ash content, % insoluble and solubility are comparable with commercial chitosan. The reproducibility was successful and negligible variable from batch to batch. Water soluble chitosan has also been successfully prepared using acetic anhydride as a reagent.

- The water-soluble derivative using succinic anhydride and the third derivative using benzyl amine have been confirmed by FTIR analysis and have very successful applications as metal scavengers. Thus, by using this process, the energy and time consumption is very low, indicating that the developed process is highly efficient in terms of yield, quality, time saving and energy. By this, optimized process it was possible to manufacture chitosan which is comparable with that of commercial and economical with lower molecular weight which implies greater application in textiles and consumer care products.
- The wipes have been developed by treating with different chemicals for different end uses by simple and cost-effective ways. The formulations and the synthesis of a variety of chemicals for the purpose of making antimicrobial, moisturizing and mosquito repellent wipes having good water absorbency and fragrance retention have been evaluated. This is done by incorporating effective ingredients and perfumes into products that suits consumer needs, especially for wipes that can be used during travel. Further wipes have been prepared using value added formulations such as plant extracts, moisturizers, and perfumes for the babies and general personal care markets.

The result indicates that, retention of moisture for viscose was highest among all the four types of selected nonwovens. Whereas for polyester the Moisture regain is very negligible i.e. 0.04% which proves that the viscose is more suitable for retaining the wet formulated solution for longer period of time.

- Preparation of wet wipes using chitosan and its derivatives and others specialty chemicals for obtaining wipes such as antibacterial, antifungal moisturizing and mosquito repellent wipes has been successfully carried out.

Studies of Nano-Silicone

- Nano silicone emulsions, as we have seen can be easily applied in the diluted form. The chemicals required are easily available and the procedure is also less time consuming. These softeners can be used for denim washing that can replace the conventional method which requires a huge amount of water. Excellent softness can be achieved using a small amount of chemical and water with comparatively less wastage of energy and resources. Thus, extensive research has to be carried out in this area keeping in mind the cost factor of nano silicone softeners.
- The future prospects of nano finishing which are Eco friendly are innumerable since it has many adventitious functional

perspectives.

Processing of Denim Fabric:

Nano ZnO particles synthesized by Sol-gel method and Precipitation method was applied on denim fabric for imparting antimicrobial property. The denim fabric used for this work showed significant increases in physical properties after treatment by the nano zinc oxide used along with the polyurethane, DMDHEU resin and Softener and also separately. These resulted in increased tensile strength and elongation. Bleaching and printing of Denim fabric by novel process was also carried out.

Pigment Dyeing and finishing of Textile substrate:

Raw pigment was synthesized in laboratory and dyeing of various fabrics like cotton, khadi, jute wool, denim was carried out by using this pigment in a new modified process and compared with commercial pigment which made it economical in terms of thickener used and also efficient. Novel effect on printing was also obtained using the above pigment.

Synthesis and application of surfactants on textiles:

Three cationic surfactants were synthesized and studied for their application on textile as antibacterial agents, coagulating agent and as a softener finish and imparting soil releasing properties.

Wet Wipes:

Wet wipes were tested for tensile strength, wicking power, rate of evaporation and absorption

by the stack test. Various formulations were used to prepare wet wipes.

Studies in superabsorbent:

Successful preparation of superabsorbent from Jute, coir, newspaper waste and food waste have been carried out.

Processing of jute:

- Successful pretreatment of jute with laccase enzyme followed by bleaching. Flame retardancy was imparted to jute fabric by synthesizing two polymers which are non-halogen in nature. Simultaneous dyeing and finishing was also carried out successfully when synthesized products were used.
- Testing of free formaldehyde on garments finished with resin finish have also been carried out in order to meet international standards for kid's garments and apparels.
- Dyeing, printing and finishing of tent fabrics was also carried out for the first time.

RESEARCH PUBLICATIONS SO FAR: 82

PATENTS: NIL

CONFERENCE

PROCEEDINGS/PAPERS: 6

SEMINARS/LECTURES/ ORATIONS DELIVERED: 2

PH.D.S AWARDED AS SINGLE GUIDE: 1

MASTERS AWARDED AS SINGLE GUIDE: 2

H-INDEX: NIL

CITATIONS: NIL



Professor (Dr.) Ravindra D. Kale

B.Sc., B.Sc. (Tech.), M.Tech., Ph. D.Tech.
Associate Professor in Textile Chemistry

PROFILE AND ACCOMPLISHMENTS SO FAR

Educational qualifications:

b. Fellowships/ Memberships of Professional Bodies:

- Life Member of Indian Fibre Society
- Life Member of Indian Natural Fibre Society
- UDCT Alumni Association

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT (MAXIMUM TWO SINGLE-SPACED PAGES WITH FIGURES/DIAGRAMS ETC.):

A. Application of nanoparticles for Effluent treatment

The effluent discharged from textile process houses consist highly concentrated dyes wastewater. Most of the colorants are complex aromatic structures, which are difficult to dispose off by natural methods. Azo dyes in particular are resistant to biodegradation. Reactive dyes are the most popular dyes used for dyeing cellulosic fibres and consequently their removal from wastewater is difficult due to their high solubility. At present different physical, chemical and biological methods are tried for dye removal or their

decolorization but most of these methods have their own limitations. In our research work, we are investigating the efficacy of nanoparticles to decolorize coloured effluent obtained from textile wastewater.

B. Use of Nano emulsions in dyeing of synthetic fibres and its blends

In this study three types of nanodisperse dyes were prepared using oil in water nanoemulsions and applied on polyester and its blend. Nanoemulsions were prepared by three methods: ultrasonication, phase inversion composition and spontaneous emulsification process. Nano scale emulsion was obtained by all the three methods as evidenced by Dynamic Light Scattering method. Dyeing characteristics of fabric dyed with crude disperse dyes using these nanoemulsions and that dyed with commercial form of same disperse dyes was compared. Dyeing of very high color depth was thus eliminating the requirement of milling of the crude disperse dye with the dispersing agent resulting in cost, time and energy savings.

C. Novel Technique to Develop Mosquito Repellent Fabric using Essential Oils

Mosquitoes are not only a nuisance as biting insects, but are also involved in transmitting disease to humans and animals. To ensure our security and safety from the future hazards, we need to develop the mosquito repellent finished textiles which is a part of protective textiles [2]. Mosquito repellent textile will protect the human beings from the bite of mosquitoes thereby protecting from mosquito – borne diseases such as malaria, dengue fever and yellow fever. This study focused on developing mosquito repellent nylon net fabric using essential oils. Fabrics were treated with oil nanoemulsion using a novel technology which is a room temperature finishing technique. The oil nano emulsion was synthesized using high speed homogeniser. The particle size was analysed using dynamic laser diffraction particle size analyser. The finished fabrics were analyzed for their mosquito repellent activity using modified WHO excito repellency test and mosquito mortality using WHO cone test. The treated fabrics showed 95% mosquito repellent efficiency and 90% mortality rate and retained their activity until 25 washes. SEM analysis of the treated and washed

samples was also done. These types of textiles can protect the human beings from the bite of mosquitoes there by promising safety from the mosquito borne diseases.

D. Surface Modification of Synthetic Fabrics for enhancing its hydrophilicity using Natural Polymers

Different kinds of fibres are available now-a-days. These fibres are mainly divided into two categories natural and synthetic. Synthetic fibres being cheap and possessing all the desirable physical as well as chemical properties lack the hydrophilicity that is present in the natural fibres. The use of micro denier fabrics and hollow fibres in sports textile makes the products very costly and the production cycle longer. We are working on surface modification of synthetic fabrics using natural polymers to enhance its hydrophilicity. The durability of this natural polymer onto synthetic fibres like polyester and polypropylene will be achieved through the use of coupling agent. The concentration of coupling agent will be kept to minimum level and that of cellulose polymer would be maximum so as to achieve the desirable effect at lower cost. The process will be very much easier and cheaper as compared to the available techniques. This hydrophilic modified synthetic fabric will find use in sports textile, diapers, sleeping bags and the products will be available at lower costs making it within the reach of the common man. This process can

be carried out in conventional machines therefore all these products can be produced in India as presently companies producing goods of this kinds are all foreign MNCs.

E. Synthesis of Biodegradable Polymeric Films

Plastics have become the inseparable part of human life since its evolution to its vast expansion in day to day life. Irrespective of its good durability, light weight and low cost, plastics have become problematic considering its disposal problem. Biodegradable polymer is an alternative to plastic materials but problem still arises regarding its cost and dependence on food crops for raw material. So, the problem has been addressed in the research work using non-food source material natural polymer for developing low cost bio-composite film for packaging application.

The strength of these films is more due the addition of reinforcement material which is very cheap and readily available.

The Bio-composite films have low moisture regain less WVTR (Water Vapour Transmission Rate), enough tensile strength (TS), low Water solubility (WS) and Swelling ratio (SR). Then optimised bio-composite films have good rot resistance and biodegradability.

These films have promising potential to serve as Packaging material in various fields such as agriculture, day to day life and storage of goods. It can serve the purpose of an emerging

and sustainable option for replacement of conventional non eco-friendly plastic based packaging materials.

F. Use of Natural Polymers in Green Composites

Various commercially available petroleum based plastics and composites pose a serious environment threat due to their extremely slow degradation characteristics. While a small fraction of these products are incinerated, most others end up in landfills at the end of their useful life and pose serious ecological concerns. Environment friendly "green" composites are increasingly being explored as alternative to the conventional plastics to improve the environmental sustainability. As a result natural biopolymers are fast becoming viable alternative to petroleum based polymers. Hence there has been a growing trend in utilizing the vegetable oils extensively as a raw material in making bio-composite by reinforcing them with nonconventional fibres in various applications due to their inherent biodegradability, low cost, societal favourably advantage and availability. Thus utilization of these green composites will help reduce the consumption of petroleum based composites. Green composites cannot cope with rapid rise in global demand for industrial purposes. However, realizing the long term problem of petroleum based composites, the potential for green composites is required to be exploited as they are likely to play a key role in emerging "green"

economy. Producing green composites on a large scale will help in fulfilling the industrial sectors like automotive, constructions, furniture's etc. on a large scale. Pursuing this quest the current research work is aimed at manufacturing green composites. Both the matrix and reinforcement materials that are being used are of natural origin. The current work carried in this direction will give a better understanding of their behaviour during its test performance which itself will decide its end applications.

G. Biodegradable foams

In this work, the conventional polystyrene foam products have been attempted to be replaced with promising biodegradable polymer based on carbohydrate compounds. The tensile strengths are almost comparable with the polystyrene foam. Also these sheets are completely biodegradable in soil. From the BOD tests, it was evident that it can be degraded by microbial action. Moreover by addition of hydrophobic formulation its water sensitivity is found to be reduced giving it requisite durability.

Hence such foams find promising applications in packaging; the water sensitive ones could be used in medical fields for application in bandages with drug delivery actions. The packaging fields could be electronic packaging; food packaging etc. These foams can also be made stiff and used in geological applications as superabsorbent by introducing this property.

H. Nanotechnology using LBL Technique

Polyelectrolytes have been utilized in the formation of new types of functional materials through film formation of nanometric scale on the fibre surface. These thin films are constructed using layer-by-layer (LbL) technique. Polyelectrolytes, either cationic or anionic are adsorbed on the surface of the fibre and the surface charge is reversed, allowing the gradual and controlled build-up of electrostatic films of polycation-polyanion layers. The polyelectrolyte multilayer (PEM) film thus built by this method can be subjected to further modification to impart new functional properties to the fabrics onto which it is applied such as antimicrobial, super hydrophobic surface, mosquito repellent, optical anti-reflective coatings etc. In our research lab, we have been successful to incorporate ZnO nanoparticles on Nylon fabric by this method. The resultant fabric found to have antimicrobial properties. We are currently attempting to impart mosquito repellent properties to the fabrics by this technique using naturally occurring oils.

I. New Synthetic Fibre Processing technique through solvent crazing

Synthetic fibres can be modified at room temperature using solvent crazing technique. Solvent crazing permits us to add any additive into the yarn of synthetic fibres using so called active absorption media (AAM). The advantage of this

method is, it combines the best of finishing method and the melt additive method which is normally used to incorporate any compound in the fiber without having any demerits of the above two methods. Process modifications are being carried out to dye and incorporate additives into the synthetic fibres at room temperature on continuous production line without having to modify the process sequence or addition of any new machinery. This will avoid the processing of these fibres being done at higher temperature which require higher temperature and energy.

J. Selfreinforced composites

Composites are composed of two chemically foreign components, so there should be an interface between the fibre and the matrix. The interface often brings serious problems such as poor adhesion and water uptake by the composites. Nowadays we can see that these composite material are used everywhere in our daily purpose hence create a lot of environment pollution and other related problems. Single-polymer composites are particularly important in biomaterials applications, since any additives composed of different chemicals could affect biocompatibility and biodegradation. In this study, self-reinforced cellulose films were prepared by incomplete dissolution of commercial microcrystalline cellulose in LiCl/DMAc solvent and subsequent coagulation of regenerated cellulose in the presence of undissolved

microcrystalline cellulose. This self-reinforcement composite were further investigated by using Fourier transform infrared spectroscopy (FTIR), thermo gravimetric analysis (TGA), Tensile strength, X-ray diffraction (XRD), visual assessment and scanning

electron microscope (SEM).

PUBLICATIONS (PEER REVIEWED) SO FAR: 28

PATENTS: 02

CONFERENCE PROCEEDINGS/PAPERS: 27

SEMINARS/LECTURES/

ORATIONS DELIVERED: 22

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: Nil

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 17

H-INDEX: 05
CITATIONS: 67



(Dr.) Sandeep P More

B. Sc., M.Sc., Ph.D

DST-INSPIRE Faculty Fellow

PROFILE AND ACCOMPLISHMENTS SO FAR

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- DST INSPIRE Faculty Fellowship

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT (MAXIMUM TWO SINGLE-SPACED PAGES WITH FIGURES/DIAGRAMS ETC.):

A. Molecular Machines

The molecular machines in nature are result of evolution of billions of years which made it irresistible for scientists to imitate at different levels and applications. The selectivity, precision and accuracy of the biological process and the ensemble so formed at cellular and sub cellular level

was the motivation behind the creation of molecular machines.

We are dealing with synthesis of self assembled Molecular Machines and it's fabrication on textile surface.

B. Singlet Fission

The limited maximum efficiency of solar cells may be dramatically enhanced by multi-exciton generation (MEG). This process creates multiple charge carrier pairs from single photons, where as conventional solar cells produce one exciton per photon. In molecular systems we are dealing with, produces two triplet pairs by a process known as singlet fission and these molecules shows around 180% of internal conversion efficiency.

C. Organic Electronics

The Organic Electronic

devices such as OPVs, OLEDs, etc. have proved their performance in market as well as in the scientific world.

Taking in to consideration the scope of these devices and future needs, we are engaged in the synthesis of various types of molecules as potential material for Organic Electronic devices.

PUBLICATIONS (PEER REVIEWED) SO FAR: 10

PATENTS: 00

CONFERENCE PROCEEDINGS/PAPERS: 07

SEMINARS/LECTURES/ ORATIONS DELIVERED: 03

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: Nil

MASTERS AWARDED AS SINGLE/ CO-GUIDE: Nil

h-Index: 07
Citations: 184

**SUBJECTS TAUGHT
DURING 2017-18:**

- Chemistry and Applications of Textile Auxiliaries

RESEARCH INTERESTS:

- Molecular Machines
- Singlet Fission
- Organic Electronics
- Smart Textile
- Novel Auxiliaries

**RESEARCH STUDENTS
CURRENTLY WORKING :**

P.D.F.- Nil RA- 01
Ph.D.(Tech) -Nil
Ph.D.(Sci.) -01
M.Tech. -04
M.Sc – 02
Others-(If Any)

RESEARCH PUBLICATIONS:

International- 11
Peer-reviewed- Nil
National-00
Conference proceeding- 09
Books-Nill

PATENTS:

International - Nil
Indian - Nil

SPONSORED PROJECTS:

Government-03
Private-Nil

**PROFESSIONAL
ACTIVITIES (MEMBERSHIP
OF IMPORTANT
COMMITTEES):**

**SPECIAL AWARDS/
HONOURS: Nil**

NON-TEACHING STAFF:



V. G. Phalke
Dye house Assistant



J. I. Rana
Lab Assistant



S. S. Chavan
Lab Assistant



S. B. Gaikwad
Lab Assistant



P. M. Khot
Lab Attendant



A. P. Ghadge
Lab Attendant



N. J. Rajam
Mechanic

AWARDS OF VARIOUS FELLOWSHIPS

Sr. No.	Name of Fellowship	Number of fellowships
1.	UGC-SAP	32
2.	AICTE (M Tech)	19
3.	TEQIP for M Tech and PhD	10
4.	Others (DBT/Tutorship/Industry sponsored)	12

INSTITUTIONAL AWARDS TO FACULTY AND SUPPORT STAFF: None

SPONSORED PROJECT

GOVERNMENT AGENCIES:

Sponsor	Title	Duration	Principal Investigator	Total amount	Research Fellows
FIST, DST, New Delhi		5 Years (2013-18)	Prof. R. V. Adivarekar	Rs.150 lakhs	
TEQIP-II			Prof. R. V. Adivarekar	Rs. 80,55,730 /-	
Ethiopian Textile Industry Development Institute (ETIDI) of The Federal Democratic Republic of Ethiopia		3 Years (2014-17)	Prof. R. V. Adivarekar	USD 19,98,665 /-	
Centre of Excellence- Process Intensification- TEQIP-II (World Bank Sponsored)	Dyeing of Polyester and its blend using nano emulsions	2013-2017	Principal Investigator	Rs. 16, 40,000/-	Mr. Vikrant Gorade – Ph.D. (Textile Chemistry) & MsPrerana Kane (Ph.D.Tech.)
Innovation Networking -TEQIP-II (World Bank Sponsored)	Development of Mosquito-repellent textiles	2013-2017	Principal Investigator	Rs. 13, 14,000/-	Mrs. Latika Bhatt -Ph.D. (Textile Chemistry)

Sponsor	Title	Duration	Principal Investigator	Total amount	Research Fellows
Ministry of Textiles, Govt. of India	Development of New Generation High Performance Auto Responsive Green Textile through Renewable Energy Resources	2016-2017	Co Investigator	Rs. 35,23,500/-	N A
DST INSPIRE	Covalently coupled Pentacene Dimers: Novel Materials for Organic Photovoltaics	2015 – 2020	Dr. Sandeep More	Rs. 3500000	Mr. Sushil Lambud
TEQIP INN	Biodegradable Flame Retardants	2016 – 2017	Dr. Sandeep More	Rs. 620000	Kaustubh Patankar
DST SERB (Extra Mural Grants)	Phenanthroline-ly coupled Tetracene Dimers: Novel Materials for Organic Electronics	2017 – 2020	Dr. Sandeep More (Co-PI)	Rs. 3758480	Mr. Zaheer Siddiqui
DST SERB (Early Career Research Award)	Singlet fission via Extended Aromaticity of Azacenes: (SFEAA) Novel Material for Potential Solar cell Applications	2018 – 2021	Dr. Sandeep More	Rs. 2475000	Mr. Anil Bhadke

b) Industries: NIL

NATIONAL AND INTERNATIONAL COLLABORATIONS

Prof. RVA

- DyStar India Pvt. Ltd
- Veermata Jijabai Technological Institute (VJTI)
- Bombay Textile Research Association (BTRA)
- Wool Research Association (WRA)
- Central Institute for Research on Cotton Technology (CIRCOT)
- Ethiopian Textile Industry Development Institute (TIDI)
- School of Fashion and Textiles of RMIT, Australia (RMIT)
- Addis Ababa Science & Technology University (AASTU), Addis Ababa, Ethiopia
- WELSPUN INDIA LTD, India.
- University of Manchester, UK.
- Novozyme SASMIRA, Mumbai

Dr Usha Sayed

- All the faculties are involved in Ethiopian Textiles Industries, sponsored by Ethiopian government

PUBLICATIONS (INTERNATIONAL JOURNALS, BOOKS, BOOK CHAPTERS, PATENTS)

No.	Title and authors	Journal	Vol. No.	Pages	Year
Prof. (Dr.) R.V. Adivarekar					
1.	Preparation and Characterization of Microcrystalline Cellulose (MCC) from Renewable Source Girendra Pal Singh, Pallavi Vishwas Madiwale, Ravindra V Adivarekar	Current Applied Polymer Science	1	pp. 1-7	July 2017
2.	Application of polyamidoamine dendrimer in reactive dyeing of cotton Saptarshi Maiti, Geetal Mahajan, Shyam Phadake & Ravindra V. Adivarekar	The Journal of The Textile Institute		1-9	Sep-2017
3.	Ecofriendly dyeing with Croton Oblonifolius Trupti Sutar, Ashwini Patil, Ravindra Adivarekar	Indian Journal of scientific Research	14 (2)	148-151	Sept-2017
4.	Chemical Modification of Ancient Natural Dye For Textile Bulk Dyeing Ashitosh Pawar, Geetal Mahajan, Ravindra Adivarekar	Indian Journal of scientific Research	14 (2)	pp. 137-141	Sept- 2017

5.	Preparation and Characterization of Microcrystalline Cellulose (MCC) from Renewable Source Enzyme-Assisted Isolation of Micro Fibrillated Cellulose (MFC) From Saccharum Munja Fibre And Its Characterization Girendra Pal Singh, Pallavi Vishwas Madiwale, Ravindra V Adivarekar	Indian Journal of scientific Research	14 (2)	pp. 132-136	Sept-2017
6.	Preparation and Characterization of Chitosan/PVA Polymeric Film for Its Potential Application as Wound Dressing Material Santosh Biranje, Pallavi Madiwale, Ravindra Adivarekar	Indian Journal of scientific Research	14 (2)	250-256	Sept-2017
7.	Investigation of Properties of Cellulosic Fibres Extracted from Saccharum Munja Grass and its Application Potential Girendra Pal Singh, Pallavi Vishwas Madiwale R.V Adivarekar	International Journal of Fiber and Textile Research	7(1),	pp. 30-37	Oct-2017
8.	Dyeing of Polyester and Nylon with Semi-synthetic Azo Dye by Chemical Modification of Natural Source Areca Nut Ashitosh B. Pawar, Sandeep P. More, R. V. Adivarekar	Natural Products and Bioprospecting	2018, 8	pp. 23-29	Nov-2017
9.	Porous electrospun casein/PVA nanofibrous mat for its potential application in wound healing dressing material Santosh biranje, Pallavi Madiwale, R. V. Adivarekar	Journal of Porous Materials	Accepted	Accepted	March - 2018
10.	Immobilisation of marine pectinase on Nylon 6,6 Manasi Damale, Pallavi Badhe, Geetal Mahajan, R. V. Adivarekar	Journal of Textile Engineering and Fashion Technology	4(2)	148-154	April 2018

11.	Moisture Management Properties of Textiles and Its Evaluation Mayur Basuk, Mrinal Chaudhary, Saptarshi Maiti & RV adivarekar	Current Trends in Fasion Technology & Textile Engineering	3(3)	1-6	Feb 2018
12.	Biotechnology in Textile Wet Processing Saptarshi Maiti, Kedar Kulkarni, R. V. Adivarekar	Annals of Biomedical Engineering and Biotechnology	2(1)	pg-7-13	March - 2018
13.	Chapter 3: GRAPHENE A WONDER MATERIAL: Synthesis of Graphene(Part-I) Saptarshi Maiti, Pintu Pandit, Geetal Mahajan, R. V. Adivarekar, M.D Teli	Journal of The Textile association	78(2)-	112-117	July-Aug 2017
14.	Chapter 4: GRAPHENE A WONDER MATERIAL: Synthesis of Graphene(Part-II) Saptarshi Maiti, Pintu Pandit, Geetal Mahajan, R. V. Adivarekar, M.D Teli	Journal of The Textile association	78(3)-	112-117	Sept- Oct 2017
15.	Chapter 5: GRAPHENE A WONDER MATERIAL: Characterization of Graphene(Part-I) Saptarshi Maiti, Pintu Pandit, Geetal Mahajan, R. V. Adivarekar, M.D Teli	Journal of The Textile association	78(4)-	207-211	Nov-Dec 2017
16.	Chapter 6: GRAPHENE A WONDER MATERIAL: Characterization of Graphene(Part-II) Saptarshi Maiti, Pintu Pandit, Geetal Mahajan, R. V. Adivarekar, M.D Teli	Journal of The Textile association	78(5)-	328-331	Jan-Feb 2018

17.	Chapter 7: GRAPHENE A WONDER MATERIAL: Supercapacitor Electrodes Saptarshi Maiti, Pintu Pandit, Geetal Mahajan, R. V. Adivarekar, M.D Teli	Journal of The Textile association	78(6)-	407-411	March-April 2018
18.	Development and characterization study of silk filament reinforced chitosan biocomposite	Journal of Natural Fibers (Taylor & Francis Group)			
19.	Green Synthesis Of Copper Nanoparticles Using Betel Leaves: Synthesis And Characterization Ravindra D. Kale , SangeetaBarwar , Prerana Kane	IJSART	4(11)	91	January 2018
20.	Green Synthesis of Silver Nanoparticles Using Papaya Seed and Its Characterization Ravindra Kale , SangeetaBarwar , Prerana Kane , Sandeep More	International Journal for Research in Applied Science & Engineering Technology (IJRASET)	6 (II)	168-174	February 2018
21.	Synthesis and characterization of magnetite nanoparticles using betel leaves Ravindra D. Kale, SangeetaBarwar, Prerana Kane, Sandeep More	International Journal of Green and Herbal Chemistry	7(1)	143-152	February 2018
22.	Preparation of acylated microcrystalline cellulose using olive oil and its reinforcing effect on poly(lactic acid) films for packaging application Ravindra D. Kale ^{1,*} , Vikrant G. Gorade	Journal of Polymer Research (springer)	-	-	2018
23.	Improvement of Light Fastness of Dyed Meta-Aramid Fabric using Nano TiO ₂ Ravindra D. Kale [*] , YashlokMaurya, Satyapriya Das, TejasviPotdar	Coloration Technology (Wiley)	-	-	2018

24.	“Dispersant-free disperse dyes for polyester an eco-friendly approach” C. R. Meena, SaptarshiMaiti, N. Sekar, Sandeep More, R. V. Adivarekar,	The Journal of The Textile Institute	108	1144-1149	2016
25.	“Synthesis of pyrene fused pyrazaacenes on metal surface: towards one-dimensional conjugated nanostructures” L. Jiang, A. Papageorgiou, S. Oh, J. Reichert, D. A. Duncan, Y. Zhang, F. Klappenberger, Sandeep More, Rajesh Bhosale, Aurelio Mateo-Alonso, Johannes V. Barth,	ACS NANO	10	1033-1041	2016
26.	“11,11,12,12-Tetracyano-4,5-pyrenoquinodimethanes (4,5-TCNP): Isolable Push-Pull ortho-Quinodimethanes with S2 Fluorescence”R. Garcia, Sandeep More, Manuel Melle-Franco, Aurelio Mateo-Alonso	Organic Letters	16	6096-6099	2014
27.	“Low LUMO Pyrene-fused Azaacenes” Sandeep More, Rajesh Bhosale, Aurelio Mateo Alonso	Chemistry An European Journal	20	10626-10631	2014
28.	“Twisted Pyrene-fused Azaacenes” Sandeep More, Sunil Choudhary, Alexander Higelin, Ingo Krossing, Manuel Melle-Franco, Aurelio Mateo-Alonso	Chemical Communications	50	1976-1979	2014
29.	“Versatile 2,7-substituted pyrene synthons for the synthesis of pyrene-fused azaacenes”, Sandeep More, Rajesh Bhosale, Sunil Choudhray, Aurelio Mateo-Alonso	Organic Letters	12	4170-4173	2014

30.	“A tetraalkylated pyrene building block for the synthesis of pyrene fused azaacenes with enhanced solubility”, NiksaKulicic, Sandeep More, Aurelio Mateo-Alonso	Chemical Communications	47	514-517	2011
31.	“Ionic Liquid promoted synthesis of β - Enamino Ketones at room temperature”, Rajesh Bhosale, Sandeep Mane, P. Suryawanshi, Sandeep More, M. Lokhande, R. Pawar	Synlett	06	933-935	2006
32.	“Microwave-Assisted facile synthesis of 2-substituted 2-Imidazolines”, Mohsin Pathan, Vijaikumar Paik, Pandurang Pachmase, Sandeep More, Rajendra Pawar	ARKIVOC	XV	205-210	2006
33.	“Synthesis and characterization of magnetite nanoparticles using betel leaves” Ravindra Kale, Sangeeta Barwar, Prerana Kane, Sandeep More	International Journal of Green & Herbal Chemistry	07	143-152	2018
34.	“Green Synthesis of Silver Nanoparticles Using Papaya Seed and Its Characterization” Ravindra Kale, Sangeeta Barwar, Prerana Kane, Sandeep More	International Journal for Research in Applied Science & Engineering Technology	06	168-174	2018
35.	“One-bath Dyeing of Polyester/ Cotton blend with Vinyl sulphone Reactive Disperse Dyes” Saptarshi Maiti, Sandeep More, R. V. Adivarekar	Fibers and Polymers		Accepted	2018
36.	“Dyeing of polyester and Nylon with semi-synthetic Azo Dye by chemical modification of natural source Areca Nut” Pawar, A.B., Sandeep More. & Adivarekar, R.V.	Natural Products and Bioprospecting	08	23	2018

BOOKS/ BOOK CHAPTERS

No.	Author(s)	Title of the chapter	Editor	Year
1	Ravindra D. Kale and Priyanka Jagtap	Springer Transactions in Civil and Environmental Engineering, Advances in Health and Environment Safety		2018
2.	Vijaykumar Paik, Padmakar A. Suryavanshi, Sandeep More, Sandeep B. Mane, Rajendra P. Pawar and K. L. Ameta	“Recent Progress on One-Pot, Multicomponent Reaction for Pyridine Synthesis”	CRC Press, Taylor & Fransis Group	2017
3.	Padmakar A. Suryavanshi, Vijaykumar Paik, Sandeep More, Sandeep B. Mane, Rajendra P. Pawar and K. L. Ameta	“Synthesis of Functionalized Piperidine Derivatives Based on Multi-Component Reaction”	CRC Press, Taylor & Fransis Group	2017

PATENTS :

No.	Inventors	Title	Patent No.	Country	Funding agency
1.	Kale Ravindra, Katre Gaurav, Jagtap Priyanka, Garje Ambadas	Biodegradable Foam Composition and Process thereof (product & process)	281/ MUM/2015	India	TEQIP-II
2.	Kale Ravindra, Gotmare V D, Bhatt Latika	A PROCESS FOR THE PREPARATION OF MOSQUITO REPELLENT FABRIC USING HERBAL FORMULATION AND COMPOSITION THEREOF	2201/ MUM/2015	India	TEQIP-II

OUTSIDE PARTICIPATION (LECTURES DELIVERED, SEMINARS / WORKSHOPS \ CONFERENCES, ORAL/POSTER PRESENTATION, VISITS)

Sr. No	Title	Conferences	Place	Month and Year
Prof. (Dr.) Ravindra V. Adivarekar				
1.	Biotechnology in Textile Processing	AICTE Sponsored One Week QIP Programme on "Sustainable Textiles: Production and Application" at VJTI, Mumbai	Mumbai	18-23 Dec 2017
2.	Key drivers for Biotechnological Research in Textiles	National Conference TEXCON-2018 on "Multifacet Paradigm of Textile Industry and Research", Shri Vaishnav Vidyapeeth Viswavidyalay (SVVV)	Indore, M.P.	10th March 2018
3.	Coloration of protein fibres	L'Oréal Pvt. Ltd, Mumbai.	Mumbai	23 March 2018
4.	Introduction to ICT and the Course	Certificate course in "Chemistry & Technology of Fibrous Polymers" at Grasim Industries Limited Pulp & Fibre Innovation Centre	Grasim Industries Limited, Pulp & Fibre Innovation Centre, Talaja.	13th April 2018
5.	Classification of Fibres	Certificate course in "Chemistry & Technology of Fibrous Polymers" at Grasim Industries Limited Pulp & Fibre Innovation Centre	Grasim Industries Limited, Pulp & Fibre Innovation Centre, Talaja.	25th May 2018
6.	Delivered lecture on "Polymer Morphology"	Certificate course in "Chemistry & Technology of Fibrous Polymers" at Grasim Industries Limited Pulp & Fibre Innovation Centre	Grasim Industries Limited, Pulp & Fibre Innovation Centre, Talaja.	1st June 2018
7.	Delivered lecture on "Fascinating world of technical textiles"	Certificate course in "Chemistry & Technology of Fibrous Polymers" at Grasim Industries Limited Pulp & Fibre Innovation Centre	Grasim Industries Limited, Pulp & Fibre Innovation Centre, Talaja.	9th June 2018
8.	Texpression	ICT, Mumbai	Mumbai	6th April 2018
9.	Texquest	ICT, Mumbai	Mumbai	6th April 2018

Dr. Ravindra D. Kale				
1.	An Odyssey with Technical Textiles	W. B. Achwal Oration lecture	KV Auditorium, ICT, Mumbai	20th February 2018
2.	Woolmark Wool Education Course	lecture by Mr RAJESH BAHL of SEAM CONSULTING GROUP	KV Auditorium, ICT, Mumbai	12th March 2018
3.	textile 4.0 Global and Indian Perspective	International conference	Hotel The Lalit, Andheri (E), Mumbai	22nd and 23rd March 2018
4.	Opportunities in Raymonds	lecture by MsRuhamaKachapofRaymonds Ltd	KV Auditorium, ICT, Mumbai	15th March 2018
5.	Personality Development	workshop by Mr Yogesh Barotof Raymonds Ltd.,	KV Auditorium, ICT, Mumbai	16th March 2018
Dr. Usha Sayed				
6.	Characterization of Medical Textile Products	National level workshop		06th to 07th October, 2017.
Dr. Sandeep More				
01.	Synthesis of Materials for Organic Electronics and Smart Textile Dr. Sandeep More	DST-DBT Joint-Conclave meet	Jaipur	June-2018
02.	Recent Advances In Chemistry (Rac-2018)	State Conference	Lonavala, Pune	Jan-2018
03.	“Transition metal doped Azaacenes for Organic Electronics” Vijaykumar More, Sandeep More	National Conference on Recent Trends and Advances in Chemical Science	Parbhani	2016
04.	“A route to linear AzaacenesMetal Complexes” Vijaykumar More, Sandeep More,	Recent Challenges in Advanced Material and Green Chemistry.	BAMU, Campus, Osmanabad	February, 2015
05.	“Break Incorporated Multicomponent Self-Assembly Nanorotors” Sandeep More, Jan Bats, Soumen Samanta, Michael Schmittel.	RTG Münster-Nagoya Abschlussymposium, University of Munster - University of Nagoya.	Castle of Munster, Germany	November 2014.

06.	“Synthesis of pyrene-fused azaacenes with enhanced solubility” Sandeep More, Aurelio Mateo-Alonso	Regio Symposium-2011	Sornetan, Switzerland.	September 2011.
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PAPER AND POSTER PRESENTATIONS ARE GIVEN IN FOLLOWING TABLE:

Sr. No	Authors	Presentation type: Paper/poster	Title	Conference name	Date (from-to)	Venue	Organized by
1.	Ashitosh Pawar and R.V Adivarekar	Paper	Application of chemically modified waste Allium cepa skin for one-bath dyeing of polyester/wool blend fabric	8th National Student Competition “Young talent search”	10 March 2018	Mumbai	The Society of Dyers and Colourists, Mumbai.

WORKSHOPS, CONFERENCES AND SEMINAR ATTENDED

Sr. No	Student Name	Title	Organized by	Date
1.	Ashitosh Pawar	12th International Conference on ‘Smart solutions in processing... Profitability the key!’	The Society of Dyers and Colourists	16th September 2017
2.	Ashitosh Pawar	Textile 4.0- Global and Indian Perspective	The Textile Association India (TAI) Mumbai Unit	22 and 23 March 2018
3.	Girendra Pal Singh	12th International Conference on ‘Smart solutions in processing... Profitability the key!’	The Society of Dyers and Colourists	16th September 2017
4.	Girendra Pal Singh	Textile 4.0- Global and Indian Perspective	The Textile Association India (TAI) Mumbai Unit	22 and 23 March 2018
5.	Saptarshi Maiti	12th International Conference on ‘Smart solutions in processing... Profitability the key!’	The Society of Dyers and Colourists	16th September 2017
6.	Saptarshi Maiti	Textile 4.0- Global and Indian Perspective	The Textile Association India (TAI) Mumbai Unit	22 and 23 March 2018

7.	Sushant Pawar	12th International Conference on 'Smart solutions in processing... Profitability the key!'	The Society of Dyers and Colourists	16th September 2017
8.	Sushant Pawar	Textile 4.0- Global and Indian Perspective	The Textile Association India (TAI) Mumbai Unit	22 and 23 March 2018
9.	Santosh Biranje	Textile 4.0- Global and Indian Perspective	The Textile Association India (TAI) Mumbai Unit	22 and 23 March 2018
10.	Kaustubh Patankar	12th International Conference on 'Smart solutions in processing... Profitability the key!'	The Society of Dyers and Colourists	16th September 2017
11.	Kaustubh Patankar	Textile 4.0- Global and Indian Perspective	The Textile Association India (TAI) Mumbai Unit	22 and 23 March 2018
12.	Trupti Sutar	"Extraction and Isolation of Phytoconstituents from medicinal plants/ herbs"	ICT, Mumbai	23-24 June 2018

EVENT ORGANIZED

Prof. (Dr.) Ravindra V. Adivarekar

- Texquest 2018, Annual National Level Inter collage Technical Competition
- Texpression 2018, Annual Cultural Event of the Department
- Organized Guest Lecture under Dr. N. V. Nimkar Endowment Lecture and delivered by Dr. S. Sivaram on the topic, "Sustainable Chemistry: The only way

- forward", on 19th June 2018.
- Organized Formal Launch Event of Book "Textile Doctor: Comprehensive Solutions for Processing", by C. N. Sivaramkrishnan, on 19th June 2018.

Prof. (Dr.) Ravindra D. Kale

1. Organized TEQIP-III sponsored "Woolmark Wool Education Course" lecture by Mr RAJESH BAHAL of SEAM CONSULTING GROUP on 12th March 2018 in KV Auditorium, ICT, Mumbai

2. Organized TEQIP-III sponsored "Opportunities in Raymonds" lecture by Ruhama Kachap of Raymonds Ltd., Thane on 15th March 2018 in KV Auditorium, ICT, Mumbai
3. Organized TEQIP-III sponsored "Personality Development" workshop by Mr Yogesh Barot of Raymonds Ltd., Thane on 16th March 2018 in KV Auditorium, ICT, Mumbai

INDUSTRIAL CONSULTANCY

Name of Company	Period
Dr. Ravindra Kale	
Up gradation, Expansion and Accreditation of Dadar Laboratory	
Sewerage Operations Department of MCGM	18 Months
Dyeing of Polyester and its blends using nano-emulsion in fiber, top and fabric form	One year

In-house Responsibilities

Prof. (Dr.) Ravindra V. Adivarekar

- Looking after Students Sports Activities.
- Member of Examination committee
- Member of Academic

Activities committee

Dr. (Mrs.) Usha Sayed

- Helping the departments or its problems (Trouble shooting)

Prof. (Dr.) Ravindra D. Kale

- TEQIP Dept coordinator
- Syllabus Revision

Committee

- Departmental Advisory Committee
- Cultural Committee
- Institute MIS Committee
- Member of the project of the Dept. with ETIDI, Govt. of Ethiopia

UNDERGRADUATE SEMINARS / PROJECTS / HOME PAPERS

UNDERGRADUATE STUDENTS' B.TECH SEMINARS

No.	Name of the Student(Beginning with Last name)	Topics	Guide
1.	Dipanwita Ray	Dye-Based Ink Formulations for Inkjet Textile Printing	RVA
2.	Akshay Vinayak Patkar	Quantum dots and their applications in textiles	RVA
3.	Shailee Desai	Antifouling surface modifications	RVA
4.	Shaiba Abdus	Denim processing and 3-D effects	RVA
5.	Jimit Ashok Gandhi	Regenerated protein fibres: A preliminary review	RVA
6	Pooja Ajay Panchal	Substitutes for Sodium Alginate in Reactive Printing of Cotton	RVA
7	Ankit Mansighka	Innovations in Garment Processing	US
8	Prasad Mestry	Textile composites in aerospace applications	US
9	Nilesh Nanaware	Novel Speciality finishes and coatings	US
10	Harsha Bagde	Absorption and release properties of nonwovens	US
11	Srishti Prasad	Novel textiles materials	US
12	Chandrashekhar Iyer	Sports textile	US
13	RathinShelani	Recent Advancements in textile processing	US
14	Aditya Bagchi	Medical Textiles	US
15	Agrawal Niyati	Synthesis and Application of Modified BODIPY	SPM
16	Khairnar Anuja	Novel Azobenzene Derivatives for Dyeing	SPM
17	Ajinkya Meshram	To synthesize and dyeing of BODIPY Dyes on Cotton and Polyester fabrics	SPM

UNDERGRADUATE STUDENTS' B. TECH PROJECTS

B.TECH PROJECT

No.	Name of the Student(Beginning with Last name)	Topics	Guide
1.	Satej Joshi	Natural fibre based oil spill cleanup	RVA
2.	Varun Tripathi	Natural fibre based oil spill cleanup	RVA

3.	Nilesh Nannaware	Low cost base material for water purifier	RVA
4.	Himanshu Dhapodkar	Low cost base material for water purifier	RVA
5.	Agrawal Niyati	Synthesis and Application of Modified BODIPY	SPM
6.	Khairnar Anuja	Novel Azobenzene Derivatives for Dyeing	SPM
7.	Ajinkya Meshram	To synthesize and dyeing of BODIPY Dyes on Cotton and Polyester fabrics	SPM
8.	Pooja Panchal	Absorption Behavior of Non	US
9.	Aditya Bagchi	Absorption Behavior of Non	US
10.	Komal Pachgade	Surfactant and their application in processing	US
11.	Yash Suryawanshi	Surfactant and their application in processing	US
	Jimit Gandhi	Dyeing and printing of nonwoven	US
	Bholenath Upadhyay	Dyeing and printing of nonwoven	US
	Srishti Prasad	Advances in Textile Processing	US
	Dipanwita Ray	Advances in Textile Processing	US
	Niel Chatterjee	LDPE/ Silver Nano particles packaging film	US

POSTGRADUATE STUDENTS' M.SC. - TEXTILE CHEMISTRY - SEMINARS

No.	Research Scholar (Beginning with Last name)	Previous Institution	Seminar	Supervisor
1.	Wodaje Markos	Ethiopia	Application of nanotechnology for multifunctional finishing of textile	MDT
2.	Ebba Oliyad	Ethiopia	Chemical modification of cotton and polyester for property enhancement	MDT
3.	Ranjan Rahul		Melt Spinning	MDT
4.	Upadhyay Darshil	Ramniranjan Jhunjhunwala College	Solvent crazing	RDK
5.	Babita Chaudhary		Mechanical Finishing of textiles	US

POSTGRADUATE STUDENTS' M.SC. - TEXTILE CHEMISTRY - PROJECTS

No.	Research Scholar (Beginning with Last name)	Previous Institution	Project	Supervisor
1.	Sameer Ansari	VESASC - College of Arts, Science and commerce, Chembur Mumbai.	Application of agro waste in composite	Prof. (Dr.) R.V. Adivarekar
2.	Upadhyay Darshil	Ramniranjan Jhunjhunwala College	Flame Retardant finish to polyester fabric using solvent crazing technique	RDK
3.	Babita Chaudhary		Application of Banana Pseudo-stem Sap in textile processing	US

POSTGRADUATE STUDENTS' M. TECH. SEMINAR

No.	Research scholar	Previous Institution	Seminar	Supervisor
1.	Agmas Azmeraw	Bahir Dar University	Green textile finishing	Prof. (Dr.) R.V. Adivarekar
2.	Miss. Biruktawit Worku	Bahir Dar University	Green process and textile	Prof. (Dr.) R.V. Adivarekar
3.	Temesgen Zereabruk	Bahir Dar University	Development of reactive dyes and its application	Prof. (Dr.) R.V. Adivarekar
4.	Akansha Panda	College of engg.and tech, Bhubaneswar	Aramid fibres and its dyeing characteristics	Prof. (Dr.) R.V. Adivarekar
5.	Mahesh Mali	DKTE, Ichalkaranji	Natural composite	Prof. (Dr.) R.V. Adivarekar
6.	Jay Shah		Innovation in technical textiles	Dr. Usha Sayed
7.	Vicky Kumar Gupta		Sports Textile	Dr. Usha Sayed
8.	Archana Bansode		Phase Change Textile	Dr. Usha Sayed

POSTGRADUATE STUDENTS' M. TECH. PROJECT

No.	Research scholar	Previous Institution	Project	Supervisor
1.	Mukherjee Debarghya	Jute and fibre technology, Calcutta university	Textile processing with clay	Prof. (Dr.) R.V. Adivarekar
2.	Abhishek Vhanbatte	DKTE, Ichalkaranji	Fibre embedded films and its application	Prof. (Dr.) R.V. Adivarekar
3.	Alemayehu Leta Senbeta	Bahir Dar University	Textile processing intensification through natural products	Prof. (Dr.) R.V. Adivarekar
4.	Jay Shah	ICT, Mumbai	Application of specialty chemicals in textile processing	Dr. Usha Sayed
5.	Archana Bansode	ICT, Mumbai	Surfactants and their application in textile processing	Dr. Usha Sayed
6.	Vicky Kumar Gupta	DKTE,Kolhapur	Synthesis and application to obtain combine effect of flame retardant and easy clean finishes on various textiles	Dr. Usha Sayed

DOCTORAL / POST-DOCTORAL RESEARCH PROJECTS

POSTGRADUATE STUDENTS' PH.D. (TECH)

SR. No.	Research Scholar	Previous Institution	Project	Supervisor
1.	Katode Sanjay	UICT	Sustainable Approach towards Garment Processing	Prof. (Dr.) R.V. Adivarekar
2.	Kherdekar Girish	TITS, Bhiwani	Natural Eco-Friendly Alternatives to the Existing Scouring & Dyeing of Wool & Woolens	Prof. (Dr.) R.V. Adivarekar
3.	Harane Rachana	ICT, Mumbai.	Selective Treatment and Recycling of Textile Effluent	Prof. (Dr.) R.V. Adivarekar
4.	Madiwale Pallavi	ICT, Mumbai.	Studies in Medical Textiles	Prof. (Dr.) R.V. Adivarekar
5.	Singh Girendra Pal	ICT, Mumbai.	Studies in Natural Fibre Composite	Prof. (Dr.) R.V. Adivarekar
6.	Biranje Santosh	ICT, Mumbai.	Extraction of Biopolymers and their Modification for Application in Medical Textile	Prof. (Dr.) R.V. Adivarekar
7.	Maiti Saptarshi	ICT, Mumbai.	Studies in graphite for textiles	Prof. (Dr.) R.V. Adivarekar
8.	Mahajan Geetal	ICT, Mumbai.	Fermentation Technology in Textile Wet processing	Prof. (Dr.) R.V. Adivarekar
9.	Valia Sanket	ICT	Functionalization of Fibres for Speciality Applications	MDT
10.	Mallick Aranya	ICT	Modification of Polymers for Enhancement of Functional Properties	MDT
11.	Shukla Aramity	SVT	Studies of Antimicrobial Properties of Naturally dyed cellulosic Nonwovens.	MDT
12.	Pradnya Ambre	Dr.B.M.N college of Home Science	Studies in Natural Dyes	MDT
13.	Chavan Pravin	ICT	Functional modifications for specialty applications in textiles	MDT
14.	Annaldewar Bhagyashri	ICT	Studies in Speciality finishes	MDT
15.	Mifta Jalaludin	ETIDI, Ethiopia	Studies in Fibrous polymers	MDT
16.	Gayatri Therani Nadathur	Andhra University	Micro and nano structured constructions for functional materials of textile origin	MDT

17.	Pintu Pandit	ICT	Value Addition and Performance enhancement of textile Materials	MDT
18.	Ms. Kane Prerana	Institute of Chemical Technology, Mumbai	Studies in Non-Conventional Method for Effluent Treatment	RDK
19.	Mrs. Bhatt Latika	CCS Haryana Agriculture University, Haryana	Application of essential Oils on Textiles	RDK
20.	Mr. Gorade Vikrant	Institute of Chemical Technology, Mumbai	Application of Micro/Nano Cellulose in Textiles	RDK
21.	Mr. Jadhav Nilesh	Institute of Chemical Technology, Mumbai	Use of Natural Polymers in Green Composites	RDK
22.	Ms. Potdar Tejasvi Ajit	Institute of Chemical Technology, Mumbai	Effluent treatment by naturally occurring materials	RDK

POSTGRADUATE STUDENTS' Ph.D. (SCIENCE)

No.	Research scholar	Previous Institution	Project	Supervisor
1.	Badhe Pallavi	ICT, Mumbai.	Protease Production and Application in Textile	Prof. (Dr.) R.V. Adivarekar
2.	Pawar Ashitosh	ICT, Mumbai.	Synthesis of Colourants Form Natural Sources	Prof. (Dr.) R.V. Adivarekar
3.	Patil Ashwini	ICT, Mumbai.	High Performance Auxillaries for Textile Substrates	Prof. (Dr.) R.V. Adivarekar
4.	Sutar Trupti	ICT, Mumbai.	Studies in Blood Clotting Materials	Prof. (Dr.) R.V. Adivarekar
5.	Shinde Suvidha	ICT, Mumbai.	Application of Fluorescent Dyes on Textile and Leather Substrates	Co-guide. Prof. (Dr.) R.V. Adivarekar
6.	Ramagude Supriya	ICT, Mumbai	Synthesis and application of photo stable dyes on textile	Co-guide. Prof. (Dr.) R.V. Adivarekar

7.	Pawar Sushant	ICT, Mumbai.	Novel Techniques of coloration	Prof. (Dr.) R.V. Adivarekar
8.	Patankar Kaustubh	Mumbai University, Kalina.	Ecofriendly Flame Retardents	Prof. (Dr.) R.V. Adivarekar
9.	JadhavAkshay	ICT	Processing of Non-conventional fibres and their value addition	MDT
10	Sharma Ravikant (DST- Inspire Fellow)	Institute of chemical technology, Mumbai	Studies in specialty chemicals for textile processing	Dr. (Mrs.). Usha sayed
11.	Parte Sneha	Institute of chemical technology, Mumbai	Studies in non-woven	Dr. (Mrs.). Usha sayed

Ph.D. SCI (BIOTECHNOLOGY) STUDENTS' RESEARCH PROJECTS

No.	Research Scholar (Beginning with Last name)	Previous Institution	Project	Supervisor
1.	Joshi Mahesh	Mithibhai college, Mumbai	Study of melanin and applications	Prof. (Dr.) R.V. Adivarekar
2.	Priyanka Sathe	Tamil Nadu Agricultural university	Role of Biochar to retain the micronutrient content for improving the Soil fertility	Prof. (Dr.) R.V. Adivarekar

DEGREES AWARDED

Sr. No.	Name	Course	Title	Guide
1.	Harane Rachana	Ph.D (Tech)	Selective Treatment and Recycling of Textile Effluent	RVA
2.	Badhe Pallavi	Ph.D.Sci. (Textile Chemistry)	Protease Production and Application in Textile	RVA
3.	Pandey Sarweshwaranand	MTech	Application of natural proteins in textile wet processing	RVA
4.	Sigger Sanjay	MTech	Dyeing process intensification	RVA
5.	Basuk Mayur	MTech	Development of moisture management sport fabrics	RVA
6.	Marewad Dinesh	MTech	Natural fibre composite for automotive industry	RVA
7.	Bhagat Nikhil	MTech	Modification of natural fibres for oil spill clean up	RVA
8.	Sontakke Sneha	MTech	Concrete composite	RVA
9.	Ms. Shweta Vyas	Ph. D. (Tech)	Chemical processing of Eri silk for value addition	SRS
10.	Mr. Vinay Nadiger	Ph. D. (Tech)	Studies on finishing of silk	SRS
11.	Mr. Rakesh Musale	Ph.D (Sci)	Studies in depolymerization of waste poly(ethylene terephthalate) and utilization of the products obtained therefrom	SRS
12.	Ms. Neha D. Parmar	Ph. D. (Tech)	Microbial Decolourization of Dye Containing Wastewater	SRS
13.	Ms. Namrata Phulaware	M. Tech.	Synthesis and application of green surfactants in textile processing	SRS
14.	Mr. Aniket Mahadik	M. Tech.	Synthesis and application of activated carbon-chitosan composite beads	SRS
15.	Mr. RohitKamble	M. Tech.	Decolourization of textile dyes using ozonation and its reuse	SRS

ABSTRACT



Name : Rachana S. Harane - Ph.D (Tech)

Research Title : Selective Treatment and Recycling of Textile Effluent

The textile waste occurs in a variety of forms throughout production process and when discharged, is harmful to the environment. The main difficulty in treating the effluent arises due to its complex nature; as it contains various chemicals of altogether different nature and composition which are difficult

to treat. Segregation of waste streams and waste recovery, recycle and reuse should be considered for waste reduction application. We have taken trails to design a simple alternative route where the effluent was treated after each stage of the processing separately so as to reduce the load on ETP. To

reuse water without treatment to a limit and then treating for further possible reuse in the same or different process. Finally to develop a simple, efficient and cost effective technique for minimum discharge of wastewater to the final effluent treatment plant through closed loop system.



Name : Pallavi Badhe - Ph.D Sci (Textile Chemistry)

Research Title : Research Title- Protease Production and Application in Textiles

There is increasing demand of enzymes in various industrial processes as a substitute or alternate source to some traditional chemical processes to make them greener and economically viable. Microbes represent an excellent source of enzymes, including protease, lipase, pectinases etc. because of their broad biochemical diversity. Microbial proteases are an important

group of enzymes that can have application in various industries. The feasibility of the use of proteases in textile application depends on these factors. There has been an increased interest all over the world to utilize the waste for the production of value added products. This results in reduced environmental pollution and improved economics of processing. In

this project sincere attempt was made to screen microorganisms from abattoir waste, poultry waste, fishery waste, etc which are rich sources of protease producing microorganisms. The further purification of enzyme and its application in various steps involved in textile wet processing such as enzymatic treatment of wool, degumming of silk and in detergent industry etc will be studied.



Name : Pallavi Madiwale - Ph.D Tech

Research Title : Research Title- Studies in Medical Textiles

The world of technology has become wide spread and the merger of various disciplines of technology has given astounding results for benefit of human kind. One such union is of medical field and textiles. Textiles are used since stone-age in the form of wound dressings. Since then the advancement and sophistication in the usage of textiles has only evolved for the betterment of the medical world. This is termed to be as

medical-textile discipline. This advancement has enabled us to engineer the tissue, cartilages, bones, nerves, skin which are damaged or not reusable. These damages can be recovered by replacing them with artificially engineered tissues.

The work is being carried out in order to contribute to the development of novel biomaterial and their blends for the application as temporary

scaffolds in health care or wound healing mechanisms. The addition of herbal products as a drug for curative purpose can also be new and imminent contribution to field of drug delivery through scaffolds. This can be achieved through imparting functional groups in the bio-materials used in scaffold engineering. It can open new prospects in this multidisciplinary field.



Name : Girendra Pal Singh - Ph.D Tech

Research Title : Studies in Natural Fibre Composites

As a result of a growing awareness of the global environmental factors, principles of sustainability, industrial ecology, eco-efficiency and green engineering are being integrated into the development of the next generation of materials, products, and processes. Conventional cellulosic fibres need specific land to grow as crops. To avoid the use of land for fibre production we need

to explore available alternate sources for cellulosic fibres. These non-conventional fibres can be applied in various fields like fibres from Saccharum Munja grass and Pampass grass contain high amount of cellulose along with fibrous characteristics which were used to prepare nonwovens for insulation and composites applications. Mustard seed husk and pearl millet husk are

the two major agro wastes in India which are not explored till date for industrial applications. Mustard seed husk contains high amount of cellulose which was utilized to produce micro cellulose. Pearl millet husk is very light weight, low density and porous structure which were successfully implemented to prepare acoustic materials.



Name : Santosh Biranje- Ph.D Tech

Research Title : Extraction of Biopolymers and their Modification for Application in Medical Textile

In view of challenges of necrotic tissue and traumatic hemorrhage in wound healing process, we developed biopolymer based wound healing dressing materials with improved hemostatic properties that promote granulation, absorb exudates and biocompatible. Current research work is based on the extraction and development of

properties of bio based material for their potential application in wound healing dressing. The functionalized biological and biochemical wound dressing materials is produced from biopolymers such as polysaccharides, protein and from synthetic biodegradable polymers. The work done also point out the acceleration of the wound healing by systematically

designed dressing materials. By this direction, most efforts were made to utilize the biologically derived materials such as chitin, chitosan, casein and carrageenan which are capable of accelerating the healing processes at molecular, cellular, and systemic levels, as materials to produce wound dressings.



Name : Ashwini A Patil - Ph.D Sci (Textile Chemistry)

Research Title : High performance functional auxiliaries for textile substrates

In textile industry there is a vast use of specialty chemicals in each and every step of process like pre-treatment, dyeing, printing and finishing chemicals etc. There are various classes of dyes and fibres. As every fibre doesn't have affinity for each and every class of dye and many limitations are observed, e.g. polyester has affinity for disperse dye and it cannot be dyed with reactive, basic or direct etc. Similar problem is seen while finishing process. So in this project main approach is to overcome such problems. The goal of this project is to prepare an auxiliary having affinity and reactivity for textile substrate and can modify the textile

substrate by getting covalently linked. This auxiliary will have reactive sites or ionic charge for further adherence of desired dye or finish to impart functionality such as colour, fragrance, flame retardancy, water repellency, antimicrobial treatment and softness properties to the textile substrates. This auxiliary will provide economical and environment friendly solution for value addition of textiles. The synthesized auxiliary may look like; S-----X-----B-----F

Where; S – Solubilising Group
X – Reactive Group to the substrate
B – Bridging Group
F – Reactive Group imparting

different Finishing property
Till now three schemes are generated of above explained auxiliaries. They are used in as a functional auxiliary in two main processing treatments; i.e.

1. Dyeing of Cotton with acid dyes and salt-free reactive dyes.
2. Multifunctional finishing of textile (mainly cotton).

For auxiliary analysis spectroscopic methods were used and for auxiliary treated textiles various chemical and physical testing were done.



Name : Ashitosh B. Pawar - Ph.D Sci (Textile Chemistry)

Research Title : Synthesis of colorants from natural source

Synthetic colourants are used for commercial production of dyed textile materials almost exclusively. However, due to the stringent environmental standards imposed by many countries in response to the hazardous effluent generated during synthesis and toxic and allergic reactions associated with the synthetic dyes, the textile researchers have once again being enthralled by natural dyes. However, there is no natural

dye containing azo group ($-N=N-$) as a chromophoric system though commercially, the azo dyes are the largest and most versatile class of organic dyestuffs.

The chemical structures of the natural dyes reveal that they are amenable for introduction of azo group as an additional chromophore which is likely to increase its tinctorial value. The possibility of introduction of other groups is also possible

to take care of the substantivity part of the dye. Therefore the present study is focused on the modification of natural dye which blends the properties of azo group and natural dyes under consideration can lead to a new category of dyes "Modified Natural Dyes". These modified dyes are expected to achieve comparable performance properties vis-à-vis those of conventional established dyes.



Name : Trupti Sutar- Ph.D Sci (Textile Chemistry)

Research Title : Studies in Blood Clotting Materials

Blood plays an important role in regulating the body's systems and maintaining homeostasis. It is important to stop the bleeding after a vascular injury in order to prevent blood loss. Excess bleeding causes death. Some of the products burn incredibly bad. They do stop the

bleeding but it takes a significant amount of effort from the Surgeons stand point to get it out and price of such products is exorbitant. Thus there is a direct need of economical and efficient product to take care of this common requirement of mankind. In this work naturally

available hemostatic agent when combined properly with natural, bioresorbable materials it will fulfil the entire above requirement. Identification and evaluation of medicinal plant done to carry this Haemostatic agent in user-friendly manner.



Name : Saptarshi Maiti - Ph.D Tech

Research Title : Topic- Studies in Graphite for Textiles

Graphene is a rapidly rising star in the perspective of materials science. The name graphene is given to a flat monolayer of

carbon atoms strictly packed into a two-dimensional (2D) honeycomb lattice. It is considered to be a basic building

block for graphitic materials of all other dimensionalities as it can be wrapped up into 0D fullerenes, rolled into 1D

nanotubes or stacked into 3D graphite.

It is recognized to be the wonder material after two great fellows of University of Manchester received the Nobel Prize in 2010 for their special contribution to its discovery. Till now, it is the strongest and lightest material known to earth. It has very

good electrical and thermal conductivity. The isolation of graphene from graphite is found to be a challenging and important zone of research in the present era of science.

An approach has been made of synthesizing graphene from graphite as well as its application on textile relating to its unique

characteristics that can give a value addition to the field of textiles. The performance properties of textile materials is thought to be enhanced by such graphite based materials whose technology is still thought to be a wonder one in the current research of science and technology.



Name : Miss. Geetal Mahajan - Ph.D Tech

Research Title : Fermentation Technology in Textile Wet Processing

The term pollution prevention has seen a decline as supplanted by sustainability. One of the major areas for scientific activity is the control of water pollution. Textile wet processing uses large amount of water for cleaning and value addition of textiles by colouration and finishing. Colour removal, in particular has recently become of major scientific interest, as

indicated by the multitude of related research reports. Many waste treatments like physical, chemical, physico-chemical and biological treatments are used to solve this problem but only a few of these methods are being accepted in the textile industry. The lack of implementation of other processes is largely because of the low efficiency, high cost and inapplicability to

a wide variety of dyes. Hence, the aim of this research will be focused on developing a low cost and low-technological process for the treatment of textile waste waters by using micro-organisms which are less unexplored, achieving various applications of microorganisms in textile industry and the use of natural products in green processing of textiles.



Name : Kaustubh C. Patankar - Ph.D Sci (Textile Chemistry)

Research Title :

Fire is a devastating problem for not only mankind but also for other living organism. Many lives get disturbed or sacrificed due to fire and its post event. Flame retardants are chemicals which could inhibit the disastrous effect up to certain extent so living organism could get away from the accidental

area. In present study we focus on the biodegradable and eco-friendly flame retardant. The main important factor for flame retardant property is to have element like Nitrogen and Phosphorous. In nature proteins are the main source of nitrogenous compounds.

To have more effect proteins could be incorporated with phosphorous compounds. The main goal in this study to extract biodegradable material from natural origin substances and their chemical modification for better flame retardant property



Name : Sushant Pawar - Ph.D Sci (Textile Chemistry)

Research Title : Novel Techniques of Coloration

Textile industry is second highest consumer of water and the most polluting industry. The present application is directed to a method of waterless processing of textile materials using solvents. Dyeing of textile material can be done by using solvents. The properties of the

solvent are closely related to the design/operation of a solvent based separation technique that is employed to perform a specified separation task. Separation involves removal of one or more of the constituent parts from a mixture. There are two main agenda of this

research project, first is to save the water in textile industry which can be solved by the solvent mechanism dyeing and second is to minimize the effluent load produced in processing treatments which can be solved by the solvent separation technique.



Name : Mahesh H. Joshi - PhD (Sci) Biotechnology

Research Title : Studies on biocolorants and its applications

Biosynthesis of the colorants for food, cosmetics and textile application has attracted increased interests in recent years. Nature produces many bio-colorants from various resources including plants, animals, and microorganism. These are possible alternatives to synthetic colorants, dyes and pigments. The currently used colorants are almost exclusively made from nonrenewable

resources such as fossil oils. The production of the synthetic colorants is economically efficient and technically advanced with colors covering a wide range. However synthetic colorants are facing challenges such as dependence on non renewable and environmentally friendly resources for production of natural colorants before synthetic dyes were invented, but in very low

efficiency. The current research work focus on the Isolation, Extraction & characterization of new Biocolorants from natural sources like plants, animals and microorganisms, to study their unique properties like Anti-UV, Anti-Microbial, Anti-oxidant Activity etc and their application as colorant in different industries will be studied.



Name : Priyanka Sathe - Ph.D (Sci) Biotechnology

Research Title : Role of biochar to retain the micronutrient content for improving the soil fertility

Biochar helps in carbon sequestration, increase water holding capacity of soil, retains nutrients in soil, attracts more

beneficial microbes, alters availability of Ca, Mg, B, Mo, and improves cation exchange capacity of soil. Because of these

all above properties biochar is one of the best and economical soil amendments. As it helps to increase the crop yield by

increasing the water holding capacity of soil and increasing nutrients availability to the plant that are present in the soil.

The aim of present work is to study the effect of biochar from various feedstocks on the crop growth in comparison with other soil amendments

and to study the changes in soil texture and fertility due to addition of biochar as it helps to retain nutrients into the soil. Agricultural waste such as coconut coir, banana peduncle, peanut shell, and maize cob etc. can be used as feedstocks to produce biochar.

Biochar produced from various feed stocks will have different effect on the growth of crop plants as each one has specific characteristics because of its varying particle size, particle density, and chemical composition.



Name : Desai PawanVenkobrao

Research Title : Studies in Synthetic Polymers for Sports Textile Application.

For sports clothing, a large variety of properties such as wearing comfort (breathability), windblocking for good heat insulation, odour absorption, tear resistance, abrasion resistance, and aesthetics are required for performance of sports textile. The study will focus on engineering products from intrinsic and induced fiber properties, finishing and coating textiles to meet specific

requirements of Technical fabrics for sports textile Applications. Fiber properties can be modified through material composition by using different polymers, polymer blends, or nanocomposites made of organic or inorganic materials and the processing flexibility in maneuvering physical parameters and structures, such as fiber diameter, texture and pattern formation, offers the

capability to design structures. By coating or finishing with specialty chemicals can further improve their performance as well as the durability. The role of fabric geometry/finish/coating parameters etc will thus be studied in relation to the enhanced performance and durability.



Name : Aranya Mallick

Research Title : Modification of polymers for enhancement of functional properties

Natural biopolymers are obtained from various renewable sources and have many advantages over the synthetic polymers because of their economic sources,

availability and biodegradability. The research work deals with the utilization of some of these plant based biopolymers to prepare products with enhanced absorbency by means

of chemical modification. Utilization of waste food materials are also taken into consideration to bring about a sustainable production system.



Name : Sanket Valia

Research Title : Functionalization of polymers for speciality applications

A wide variety of natural sorbents such as rice straw, corn cobs, peat moss, wood, cotton and milkweed have been employed as sorbents in oil spill cleanup. These natural sorbents

have the advantages of economy and biodegradability, but have also been observed to have the disadvantages of poor buoyancy characteristics, relatively low oil sorption capacity. Thus

modification of various lignocellulosic materials to improve the oleophilicity will assist in the application of oil spill cleanup.



Name : Akshay C. Jadhav

Research Title : Processing of non-conventional fibres and their value additions.

In the current research work, attempts are being made to use renewable lignocellulosic agricultural byproducts such as rice husks, cornhusks,

cornstalks and pineapple leaves as an alternative source for cellulosic fibres. As per the above mentioned topic, proper fibre producing plants were

identified, which were hitherto unexploited for the fibre formation which can be further used in the world of textiles.



Name : Bhagyashri N. Annaldewar

Research Title : Studies in Speciality Finishes

Consumer demand for comfort, easy care, health and hygiene along with protection against mechanical, thermal, chemical and biological attacks has given birth to speciality finishes

for textile. Speciality finishes are the treatments that are applied to the fabric to make them suited for specific uses such as water repellent, flame retardant, antimicrobial, UV

resistant, soil release, moisture management, easy care etc. The research work emphasizes on the multifunctional finishes for the textile substrates to improve their performance properties.



Name : Pravin Pralhadrao Chavan

Research Title : Functional Modifications for Speciality Applications in Textile

Today's era is of modernization of the textile industry. Protective textiles refer to those textile products which have a functionality of giving protection from something which is desirable. The functionality imparted can be mosquito repelling, insect repelling or anti-bacterial and anti-fungal.

Synthesis or modification of repellent chemicals is one of the approaches towards making of textile material as an insect repellent. In many of these materials essential oils are used as an important ingredient. The microencapsulation and application of this microencapsulated product on

to the textile material itself is a challenge and have problem related to laundering conditions. To avoid this problem responsive polymer can be prepared, so that microcapsules can withstand maximum number of washing cycles.



Name : Pintu Pandit

Research Title : Value Addition and Performance Enhancement of Textile Materials

Various types of waste material as well as unconventional natural products from our surroundings have been given the importance for its utilization

on textile material as dyeing as well as imparting functional finishes like fire retardant, water repellent, antibacterial finishing, ultra violet protection, etc.

Different processes like coating, electrospinning, plasma, etc. may be utilized for the same.



Name : Jelalu Mifta

Research Title : Studies in Fibrous Polymers

Manmade fibres as well as natural fibres have been used for various textile applications and, nowadays, the interest for renewable resources for fibres particularly of plant origin is increasing. Therefore several plants are being studied with the aim to isolate fibres from plant

leaves, stems and or from other parts. In addition, byproducts of some agricultural crops have been studied to find out fibre materials that could contribute for textile applications. Nature still has unexploited potentials to be explored, preserved and utilized for the

better future. Investigations, characterizations, value additions, and modifications on fibre properties will provide better options for diversified textile applications. So attempts were made to study and use some natural fibres for further applications.

AWARDS AND SCHOLARSHIPS TO STUDENTS

1. Mr. Ashutosh Borkute filed a patent on “A Hydrogenation Catalysts and a Process Thereof” dated 5th february, 2018
2. Mr. Pintu Pandit won first prize in SDC- EC in March 2018
3. Mr. Prathamesh Mane and Mr. Junaid Khan won First prize in VASTRA, VJTI, Mumbai in poster presentation competition in March 2018
4. Mr. Pintu Pandit won third prize in ICAPM, Kerala in April 2017
5. Mr. Ashutosh Borkute awarded for best paper in SCHEMCON in October 2017
6. Mrs. Latika Bhatt awarded Newton Bhabha Fellowship in November 2017, for which she will be going to University of Cambridge for a period of 3months to carry out her research work.

MAJOR ACCOMPLISHMENTS OF FACULTY MEMBERS

Dr.(Mrs.) Usha Sayed

- First person to attend the International brokerage event organized by Uludag textile exporters association (UTIB) and Bursa textile and clothing R&D center (BUTEKOM) at Turkey representing our institute.
- Had eventful interaction

with textile institute, government agencies, and researcher from the all over the world (well represented) including Russia, Japan, Poland and Vietnam.

- The final outcome was “BUTEKOM is ready for cooperation with our institute for research

activities in Turkey. BUTEKOM can sign a MOU at the beginning in order to carry the relationship for upper levels.”

- Signed MOU with Bursa technical university, Turkey representing our institute.

PLACEMENTS

Employment record of Textile dept students

B.TECH. 2017-18

Sr. No	Student Name	Company name	Salary in Lakhs - PA
1	Chandrashekar Kumar Iyer	Not Applicable	Not Applicable
2	Ishw Jasbir Singh	Reliance, Ahmedabad	3
3	Harsha Nikhil Bagde	LS Auxichemicals	3.5
4	Shaiba Abdus Abdus	Kg Denim, Coimbatore/Bangalore	4
5	Prasad Vidyadhar Mestry	Advanced Enzytech solutions, Thane	4
6	Shailee Manish Desai	Not Applicable	Not Applicable
7	Supernit Raja Shinde	Not Applicable	Not Applicable
8	Rucha Pradeep Kakatkar	Not Applicable	Not Applicable
9	Rathin Suryakant Shelani	Reliance, Ahmedabad	3
10	Nilesh Rajaram Nannaware	Nimkartek, Thane	3.6
11	Naresh B	Kg Denim, Coimbatore/Bangalore	2
12	Yash Vijay Suryawanshi	Not Applicable	Not Applicable
13	Urvi Ajaykumar Sawant	Texpert, Mumbai	3
14	Pravin Sunil Ralebhat	SF Dyes, Bangalore	4

15	Komal Sunil Pachgade	Kg Denim, Coimbatore/Bangalore	4
16	NEHA Vijay CHANDRACHUD	Welspun, Anjar	3
17	Apoorva Shivaji Metkari	Not Applicable	Not Applicable
18	Heramb Sunil Waghachoude	Trident, Mp/Punjab	9
19	Akshay Vinayak Patkar	SF DyesMumbai	4
20	Himanshu Suresh Dhapodkar	Not Applicable	Not Applicable
21	Ankit Mansinghka	Not Applicable	Not Applicable
22	Jimit Ashok kumar Gandhi	Tracon Export Services Ltd	4
23	Nandan Krishnanarayan Thakur	Indokem, Mumbai	4.5
24	Anish Sanjay Harshe	Raymond, Vapi/ Chindwara	3.2
25	Varun Tripathi	Galaxy Surfactants, Navi Mumbai	5.77
26	Pooja Ajay Panchal	Texpert, Mumbai	3
27	Neil Chatterjee	Not Applicable	Not Applicable
28	Shashank Sanjay Pagaria	Not Applicable	Not Applicable
29	Aditya Kailash Lokhande	Nimkartek, Thane	3.6
30	Bholenath Udayraj Upadhyay	Indofil	5.5
31	Nikitesh Krishna Rajurkar	SF Dyes, Bangalore	4
32	Srishti .	SF DyesMumbai	4
33	Ankush Mandal	Hoenstein, Mumbai	3
34	Aditya Bagchi	Not Applicable	Not Applicable
35	Rishabh Dheeraj Kathuria	Texpert, Mumbai	3
36	Joshi Satej Shridhar	Not Applicable	Not Applicable
37.	Dipanwita Ujjal Ray	Welspun, Anjar	3

M.TECH. 2017-18

Sr. No	Student Name	Company name	Salary in Lakhs - PA
1	Agmas Azmeraw Bimrew	ETIDI, Ethiopia	Ethiopian student
2	Akankshya Panda	Going for higher studies	ICT,Mumbai - Ph.D. Tech.
3	Amrita Singh	Saint Gobain, Chennai	7
4	Biruktawit Worku Mengistu	ETIDI, Ethiopia	Ethiopian student
5	Kaustubh Gajanan Gawde		
6	Mahesh Dnyandeo Mali		
7	Misgana Taye Hassen	ETIDI, Ethiopia	Ethiopian student
8	Mohit Soni	Vardhman	4.1

9	Nikhil Balasaheb Takbhate	Rishabh Chemical, Nariman Point	4.2
10	Shruti Vidyadhar Bal		
11	Smita Prakash Chaudhary	Global Non-wovens Ltd, Igatpuri	4
12	Tambizot Getachew Alemayehu	ETIDI, Ethiopia	Ethiopian student
13	Tanushree Vishram Tandel		
14	Temesgen Zereabruk Areaya	ETIDI, Ethiopia	Ethiopian student
15	Yesuf Seyd Ahmed	ETIDI, Ethiopia	Ethiopian student

M.SC. TEXTILE CHEMISTRY 2017-18

Sr. No	Student Name	Company name	Salary in Lakhs - PA
1	Apurva Dattatraya Joshi	Sulfast, Navi Mumbai	2.4
2	Vinay Manohar Mane	Intertek, Vikroli	2.7
3	Aakash Kanhyalal Maurya	Chemistar, Ahmedabad	
4	Abhishek Sadanand Patole	Chemistar, Ahmedabad	3
5	Ashwini Bhanudas Pawar	Croda Chemicals, Navi Mumbai	1.7
6	Urmila Kondiba Nemane	Looking on her own	
7	Vrushali Gajanan Salame		
8	Pooja Raju Ghodake	Left the course	
9	Pranay Bhikaji Satardekar	Going for higher studies	
10	Rosemary Thomas	Sulfast, Navi Mumbai	2.4
11	Keval Kundansingh Nayal		
12	Poonam Vyankatrao Shinde		
13	Swati Ravindra Korgaonkar	Going for higher studies	
14	Anand Yadav Yadav		

IN-PLANT TRAINING

T YB. TECH. 2017-18

Sr. No.	Name	Company Name
1	-KHAN JUNAID MOHAMMED SHANWAR-	CENTURY RAYON ,SHAHAD
2	-PRARTHANA YOGESH METRANI SUJATA-	MAHESH PROCESSING HOUSE
3	-PRARTHANA YOGESH METRANI SUJATA-	Intertek LTD
4	-JAIN ANSH AJAY BANDINI-	CONTESTOPEDIA
5	-NANCHE SARVESH PRASHANT PRIYANKA-	SUDITI Industries
6	-JAGANY KRITI DEEPAK MANISHA-	DYESTAR Ltd
7	-NAWANDER SIMRAN SANJAY VAISHALI-	CLARIANT IND LTD
8	-SHANI KUMAR PATEL-	ARCHROMA
9	-SHARMA KARTIKEYA SANDEEP SMITA-	FOOTWEAR & DESIGN INSTITUTE
10	-RAWAT KESHAV ARJUN DIVYA-	Intertek LTD
11	-SHAH HARDIL KIRANKUMAR JASMINA-	Intertek LTD
12	-KHEDKAR SHWETA SHRINIVAS VANDANA-	DYESTAR Ltd
13	-MARU AISHWARYA MAHENDRA RAJANI-	Intertek LTD
14	-ZANWAR RUSHIKESH RAMANJEE RAJITA-	Cotton world
15	-YASHWANT SURYA-	VARDHAMAN TEXTILES
16	-PRASAD KOMAL SUJIT SURABHI-	CHT IND LTD
17	-MANE PRATHAMESH PARASHURAM UJJWALA-	ROSSARI BIOTECH
18	-PATIL UTKARSH RAJARAM MEGHA-	RAYMOND Ltd
19	-DOIPHODE ADITYA CHANDRASHEKHAR ARCHANA-	PINE LTD
20	-TARATE ASHWINI SAHEBRAO VIJAYA-	ARCHROMA
21	-GAIKWAD SAMRUDDHI YASHWANI SUVARNA-	Intertek LTD
22	-BHANUSHALI KARAN VASANT BHAVANA-	ORACLE HOME TEXTILE LTD
23	-RANGARI VAIBHAVI GULCHAND MINAKSHI-	ROSSARI BIOTECH
24	-PANDIT ADITYA YOGESH SAVITA-	PIDILITE LTD
25	-BORSE PIYUSH SANJIV LEENA-	Madura Fashion and Lifestyle.
26	-CHAUDHARI SIDDHESH GIRISH UJWALA-	ADITYA BIRLA RESEARCH CENTRE

27	-TALELE POOJA SUNIL SMITA-	HINDUSTAN AERONAUTICAL LTD
28	-PHADATARE AKASH RAJARAM PRAMILA-	ADITYA BIRLA RESEARCH CENTRE
29	-GOMASE APURVA VIJAYRAO JYOTI-	CLARIANT IND LTD
30	-ANYAPANAWAR SHANTANU SACHIN SHRADHA-	RAYMOND
31	-KHILARI VISHAL BANSIDHAR SANGEETA-	COLORBAND LTD
32	SAMARTH AMAN SANJAY VAISHALI	RAYMOND
33	MANEPALLI CHAITANYA SAIRAM	SIYARAM LTD
34	DEULKAR SAMPADA VITTHALRAO	DYESTAR

PROFESSIONAL ACTIVITIES

Professor R. V. Adivarekar

- Life Member of Textile Association (India)
- Life Member of Indian Fibre Society
- Editor of Journal of Textile Association
- Visiting faculty for Sophia Polytechnic
- Member of selection committee, College of Home Science, Nirmala Niketan
- Member of technical/ Research advisory committee of Wool Research Association
- Member of Board of studies and faculties of The Maharaja Sayajirao University of Baroda in Textile chemistry
- Member of General Advisory Committee for Research and Liason of BTRA for the period 2011-2014
- Member of 'Core Group' to function as a Sub-committee

- of the Council for COE in Sportech at WRA
- Member as Expert in Department Research Committee at Textile Manufacturers Department, Veermata Jijabai Technological Institute
- Member of RRC, Department of Physics, ICT

Dr. R. D. Kale

- TEQIP coordinator of the dept
- Part of the Chief Conductor cum Senior Examiner for all the examinations conducted for UG and PG students
- Committee member of the MIS system of the Institute
- Placement coordinator the dept
- IPT in charge for T Y B Tech and M Sc Textile Chemistry students
- Coordinator of the dept for UGC-SAP programme
- Divisional Representative of the dept for IPC
- Member of the Cultural Activity Cell of the Institute

- Member of the Admission Committee of the Institute
- Member of the "Shri G.M. Abhyankar Students' Travel Assistance" of the Institute
- Examiner for M Tech. Thesis in VJTI, Matunga
- Examiner for Practical Exam in SASMIRA, Worli
- External Examiner for NMIMS(Deemed to be University), Shirpur
- Assisting NMIMS(Deemed to be University), Shirpur for designing the DTT course syllabus
- Expert on the committee formed by by Dept of Health Sciences, Maharashtra State that is tasked with preparing specification for different garments/items that is used in Govt. mental hospitals

Dr. (Mrs.) Usha Sayed

- Referee for Journal of polymer and Environment
- Member of Editorial Advisory Board of International Journal of Advanced Science and Engineering

- Chairperson of Adhoc Committee of Textile Technology (MU)
- Best Ph.D.Tech Thesis Committee,
- Referee- for Nirmala Niketan College for M. Sc. (Home Science).
- Referee- for SNDT.
- Examiner for Nirmala Niketan College for M. Sc. (Home Science).
- Student counselling,
- Trained and Lectured students of National Institute of Fashion Technology [NIFT]

SPECIAL AWARDS

Dr.(Mrs.) Usha Sayed

- Awarded Certificate for presentation of a poster entitled Enzyme Treatment of Cotton in Presence of Swelling Agents at the 2000 AATCC International Conference & Exhibition Winston- Salem, North

Carolina.

- Awarded Certificate for attending the NCUTE Extension training Programme Jointly organised by VJTI & SASMIRA, on “Man-made Fibers” at VJTI, Mumbai on March 24-25, 2000.
- Chief Guest of Women’s College at Annual Day Function
- Chief Guest at a seminar at VJTI
- Chaired a no. of seminars in the past at VJTI, Mumbai, And many conferences held at various institutes in Mumbai
- Awarded with participation certificate in IIM (udaipur) for management capacity enhancement program(MCEP) for TEQIP institution- March 30 to April 4, 2015
- Awarded participation

certificate in UTIB in MEVLANA exchange programme, Turkey

DEPT CONDUCTED FOLLOWING ENDOWMENT LECTURES/INVITED LECTURES FOR THE STUDENTS OF THE TEXTILE DEPT AND ALUMNI

- Organized Guest Lecture under Dr. N. V. Nimkar Endowment Lecture and delivered by Dr. S. Sivaram on the topic, “Sustainable Chemistry: The only way forward”, on 19th June 2018.
- Organized Formal Launch Event of Book “Textile Doctor: Comprehensive Solutions for Processing”, by C. N. Sivaramkrishnan, on 19th June 2018.