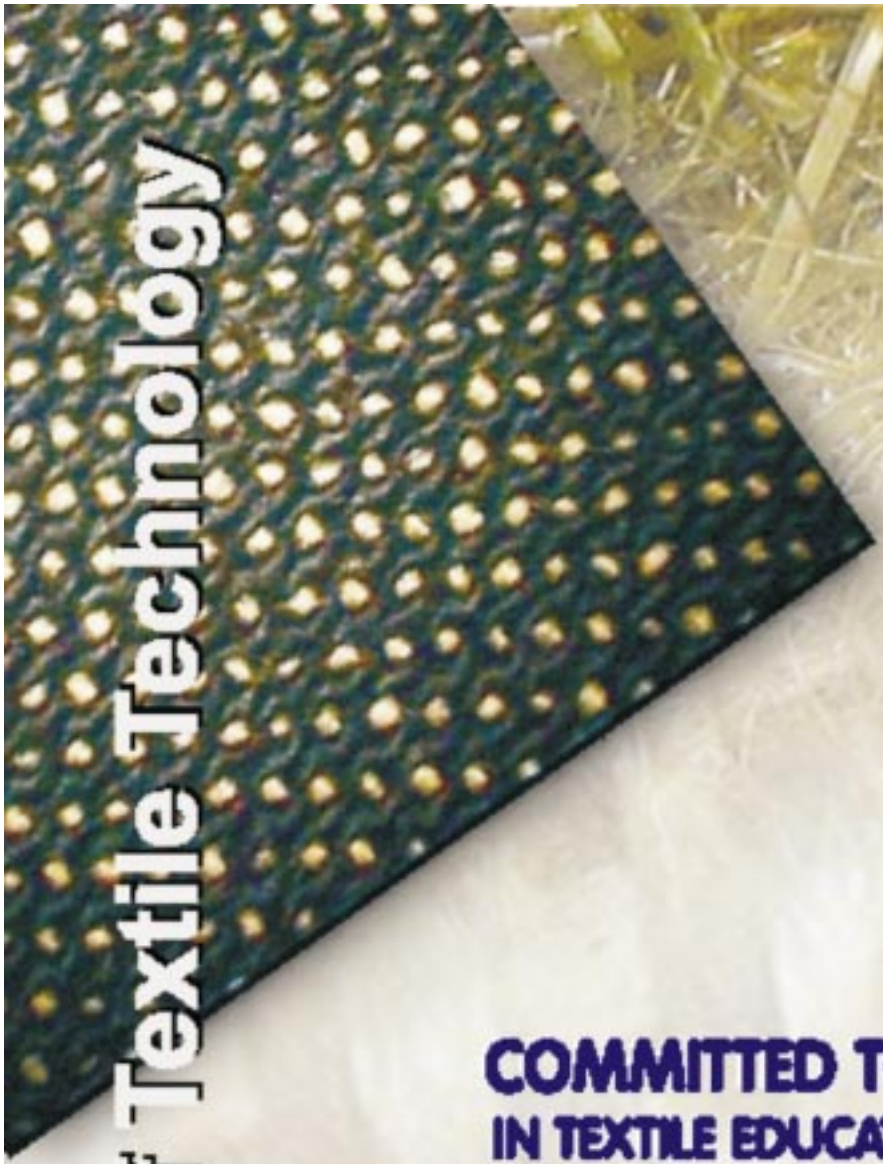

Department of Textile Technology

COMMITTED TO EXCELLENCE
IN TEXTILE EDUCATION & RESEARCH

Indian Institute of Technology, Delhi

VISION

- To contribute to India and the World through excellence in scientific and technical education and research.
- To serve as a valuable resource for industry and society.
- To remain a source of pride for all Indians.

MISSION

- To generate new knowledge by engaging in cutting-edge research and to promote academic growth by offering state-of-the-art undergraduate, postgraduate and doctoral programmes.
- To identify, based on an informed perception of Indian, regional and global needs, areas of specialization upon which the Institute can concentrate.
- To undertake collaborative projects which offer opportunities for long-term interaction with academia and industry.
- To develop human potential to its fullest extent so that intellectually capable and imaginatively gifted leaders can emerge in a range of professions.

VALUES

- Academic integrity and accountability.
- Respect and tolerance for the views of every individual.
- Attention to issues of national relevance as well as of global concern.
- Breadth of understanding, including knowledge of the human sciences.
- Appreciation of intellectual excellence and creativity.
- An unfettered spirit of exploration, rationality and enterprise.

DEPARTMENT OF TEXTILE TECHNOLOGY

The Department of Textile Technology is concerned with the study of natural and manufactured fibres, yarns and fabrics and products thereof. In order to meet the challenge of increasing use of sophisticated technologies and complexities of end-use requirements, broad based undergraduate and post-graduate programmes with various specializations are offered in order to prepare the students for the career of their choice.

Currently there are about 150 students studying for their B.Tech. degree, 70 students pursuing the two M.Tech. programmes and 25 research students are registered for the doctoral degree. As a result of careful planning and decades of development, the Department has risen to a position of international eminence. It has been actively interacting with the industry for well over a decade. Today it has achieved a pre-eminent status not only in teaching but also in sponsored research and industrial consultancy.

Courses offered are concerned with the study of basic processes and machines for converting fibres into finished products and also deal with the physical, chemical and technological aspects of natural and manufactured fibres. All aspects of textile production, viz. spinning, weaving, knitting, processing and testing are extensively dealt with and apparel as well as technical applications of textiles are covered.

Collaborative research work is undertaken with the industry, government and non government organizations on a regular basis. Workshops, seminars, symposia, summer and winter schools are organized from time to time for the benefit of industry and the academia under Continuing Education Programmes. The Department is actively involved in helping other Textile Colleges in setting up laboratories and updating their syllabi.

ACADEMIC PROGRAMME

Undergraduate

The Department offers an undergraduate programme leading to B.Tech degree in Textile Technology. During the first two semesters, the students take courses in basic sciences, engineering arts and sciences, and humanities and social sciences which are common to students of all disciplines. During the next two semesters, the students take a set of departmental core subjects in Textile Technology. From the fifth semester onwards they opt for departmental elective courses.

In the new curriculum, there is increased emphasis on design, product and process development activities. In final year, students are required to work on a project under the supervision of a faculty member. They also undergo practical training in an industrial establishment as part of their overall engineering education.

Postgraduate

Two M.Tech programmes - in Textile Engineering, and in Fibre Science and Technology are offered. The Textile Engineering students are trained for textile manufacturing industry, while the Fibre Science and Technology students are trained for the manmade fibre industry. The students are specially suitable for technical services, research and development work in industry.

Research

Current areas of Doctoral and post-doctoral research include study of structure and properties of fibrous materials and fibres, smart polymers, analysis and design of yarn and fabric formation systems, mechanics of production processes, comfort properties of textiles, design of technical textiles, polymer composites, medical textiles, optimization and mechanism of dyeing and preparatory processes, eco friendly processing, micro encapsulation, antimicrobial finishes and apparel engineering.

ACADEMIC GROUPS

Fibre Science

Main Areas Covered	Group Members
Polymer and fibre characterisation	Prof. B.L. Deopura
Fibre production	Dr. A.K. Agrawal
Specialty fibres	Dr. Bhuvanesh Gupta
Process simulation	Dr. Manjeet Jassal
	Dr. Mangala Joshi

Yarn Manufacture

Main Areas Covered	Group Members
Preparatory processes for spinning	Prof. K. R. Salhotra
Ring spinning	Prof. S.M. Ishtiaque
New spinning technologies	Prof. R.Chattopadhyay
Yarn structure	Dr. K.S. Rengasamy
Structure-property relationship	Dr. R. Alagirusamy
	Dr. Apurba Das

Fabric Manufacture

Main Areas Covered	Group Members
Preparatory processes	Prof. V.K. Kothari
Shuttle and shuttleless weaving	Prof. P.K. Banerjee
Fabric developments	Dr. B.K. Behera
Knitting	
Nonwovens	
Braiding	
Narrow fabrics	

Textile Chemistry

Main Areas Covered	Group Members
Ecofriendly chemical processing of natural and synthetic fibres and blends	Prof. M.L. Gulrajani
Colour science	Prof. R.B. Chavan
Specialty dyes and finishes	Prof. Kushal Sen
Natural dyes and finishes	Dr. Deepti Gupta

FACULTY

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Comfort Aspects of Clothing, Technical Textiles, Product Development, Evaluation of Textiles and Quality Management, Texturing

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Colour Measurement, Biomimic Technologies, Theory and Practice of Dyeing

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Yarn Manufacture, New Spinning Technologies, Control of Spinning Processes, Statistics, Design of Experiments

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Environment Friendly Textile Chemical Processing, Digital Printing, Environment Management

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Fibre Science & Technology, Fibre, Film and Tape Production and Composites

Dr. P.K. Banerjee
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Fabric Formation Systems, Technical Textiles

FACULTY

Dr. S.M. Ishtiaque
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New Spinning Technologies, Structural Properties of Yarns, Machine Design

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Textile Chemistry, Texturing of Synthetics/Natural Fibres and Blends, Special Finishes, Textile Fibres

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Yarn Manufacturing Process, Quality Control, Fibre Ropes and Cordages, Sewing Threads, Product Development

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Fabric Manufacturing Systems, Product Development, Apparel Manufacturing, Image Processing and Instrumentation, Sizing, Project Preparation and Evaluation

Dr. Ashwini K Agrawal
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Fibre Science & Technology, Polymers, Stimuli Sensitive Textile Materials, Nano & Bio Materials, Simulation & Modeling

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Medical Textiles, Tissue Engineering, Intelligent Polymers & Fibres, Recycling & Waste Management, Membrane Technology

FACULTY

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Dyeing and Finishing, Antimicrobial Finishes, Garment Technology, Body Size Charts

Dr. R.S. Rengasamy
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Yarn Manufacture, Texturing, Garment Technology, Mechanics of Yarns and Machines, Surface Characteristics of Textiles, Clothing and Comfort

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Textile Preforms for Composite Applications, Short Staple Spinning, Structure-Property Relationship of Yarns

Dr. Manjeet Jassal
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Functional & Specialty Polymers, Hydrogels, Smart Fibres, Biodegradable Polymers

Dr. Mangala Joshi
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Polymeric Composites and Nanocomposites, UV Protective Textiles, Antimicrobial Finishing, Environmental and Ecological Issues in Textiles

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Yarn Structure, Protective Clothing, Fabric Comfort, Nonwovens, Instrumentation

THRUST AREA GROUPS

Technical Textiles

Main Areas Covered

- Technical yarns
- Ropes
- Filtration
- Geosynthetics
- Textile preforms for composites
- Medical textiles
- Protective clothing
- Evaluation techniques
- Nonwoven composites

Group Members

Prof. V. K. Kothari
Prof. B. L. Deopura
Prof. P. K. Banerjee
Prof. Ravi Chattopadhyay
Dr. Bhuvanesh Gupta
Dr. Mangala Joshi
Dr. Apurba Das
Dr. R. Alagirusamy - Coordinator

Clothing Physiology and Comfort

Main Areas Covered

- Quantitative measurement and assessment of the wear comfort of textiles and clothing
- Transmission properties of textiles: air, heat and water vapour Tactile properties
- Development of guidelines for the construction of physiologically optimized textile and clothing systems
- Assessment of comfort perception

Group Members

Prof. V. K. Kothari
Prof. R. Chattopadhyay
Dr. B. K. Behera
Dr. R. Rengasamy
Dr. Apurba Das - Coordinator

Environment Management

Main Areas Covered

- Water management
- Waste recycling
- Ecofriendly textile processing

Group Members

Prof. R.B. Chavan
Prof. B.L. Deopura
Dr. Ashwini K. Agrawal
Dr. Mangala Joshi
Dr. Bhuvanesh Gupta - Coordinator

Needle Punched Nonwoven Unit

DREF Spinning Machine

RESEARCH AREA GROUPS

Innovative Materials

Main Areas Covered

- Polymeric Nanocomposites
- Stimuli sensitive structures
- New finishing techniques like microencapsulation
- Hydrogels

Group Members

Prof. B.L.Deopura
Prof. Kushal Sen
Dr. Ashwini K. Agrawal
Dr. Manjeet Jassal
Dr. Mangala Joshi - Coordinator

Product Development

Main Areas Covered

- Research and development of industrially relevant products that may have immediate scope of commercialization.
- Development of teaching related activities in the department to enhance product development skills in undergraduate and post graduate students.

Group Members

Prof. V. K. Kothari
Prof. Kushal Sen
Prof. S. M. Ishtiaque
Prof. R. Chattopadhyay
Dr. B. K. Behera
Dr. Deepti Gupta
Dr. Ashwini K. Agrawal - Coordinator

Apparel Engineering and Technology

Main Areas Covered

- Seam puckering
- Seam performance and appearance
- Fusing Technology
- Fabric-machine interaction
- New sewing threads
- Developing Body Sizing systems for garment manufacture

Group Members

Prof. R. Chattopadhyay
Dr. B. K. Behera
Dr. R. S. Rengasamy
Dr. Deepti Gupta - Coordinator

High bulked fabric produced with air-jet textured yarns

Fiblon fusing press

FACILITIES

Fibre Science

Carbon precursor spinning unit
Compression moulding unit
Full melt spin tester
High speed melt spinning pilot plant
Wet spinning unit
High temperature circulator bath
HTHP pilot batch reactor
Laboratory melt spinning unit
Low temperature circulator bath
Multistage drawing unit
Tape-cum-filament drawing machine
Creep apparatus
Density gradient column
Gamma Chamber 990
Hot stage microscopy
Leica microscope with image analyser
Leitz polarising microscope
Melt Flow Index unit
Micro FTIR
Microbalance
Moisture content analyzer
Oxidation/Carbonising Furnace
Perkin Elmer and Mettler DSC
Perkin Elmer FTIR (Bench Top)
Plasma unit
Projection microscope
Sonic modulus tester
Surface tensiometer
Thermo Mechanical Analyser (TMA)
Thermo Gravimetric Analyzer (TGA)
Brookfield and Ball fall viscometers
Wide angle x-ray diffraction unit

Two for one Twister

Melt Spinning Unit

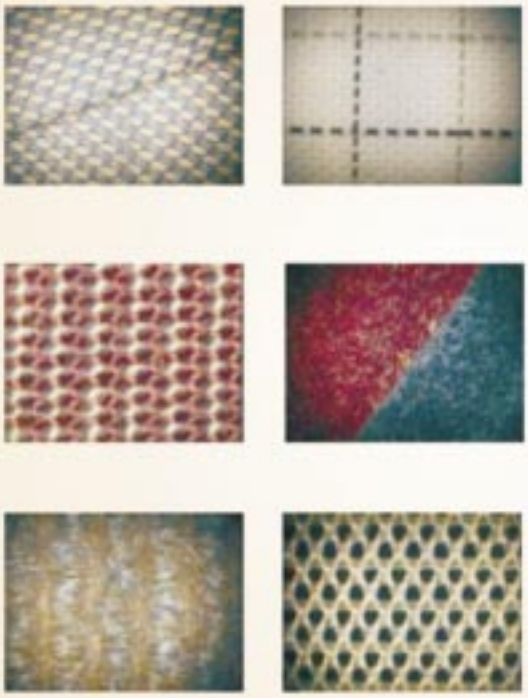
Yarn Manufacture

Aerofeed blow room line
High production and SHP cards
High speed draw frame
Lap former and comber
Carded Interframe
High speed ring spinning machine
Elitex BD-rc rotor spinner
Suessen OE spin tester
Dref-III friction spinning machine
Platts miniature spinning plant
Ring doubling machine
Assembly winder
Two-for-one twisting machine
Precision winder
Air-jet texturing machine
Draw texturing machine
Lea strength tester
Tow cutter
Trash analyser
Twist tester
Video microscope (Hi-Scope)

FACILITIES

Fabric Manufacture

- Cone, cheese winding machines and autoconer
- Sectional warping
- Laboratory model high pressure sizing machine
- Pirn winding machine
- Dobby, jacquard and automatic looms
- Projectile, Rapier, Air jet and Water jet looms
- Hand splicer
- Industrial sewing machines
- Single & double bed flat knitting machine
- Circular knitting machines
- Heavy duty braiding machine
- Needle punching machine
- Brabender viscograph
- Rothschild tersterometer
- Stretch & moisture monitoring devices
- Compression tester
- Bending Rigidity Tester



Rotary Evaporator

Chemical Processing

- Drying, curing & coating Unit
- Flammability tester
- Flock printing machine
- Four head screen printing machine
- Fusing & transfer printing Press
- HTHP Beaker dyeing machines
- HTHP Infrared dyeing machine
- Rotary Evaporator
- Incubator Shaker
- Computer colour matching systems
- Jigger
- Laminar Air Flow Bench
- Launder-O-meter
- Light fastness tester
- Multicolour Package dyeing Machine
- Padding Mangle
- UV-Vis Spectrophotometer
- Waters HPLC for dyes and amino acid analysis

FACILITIES

Testing

Abrasion resistance tester (flat, flex and depth)
Air permeability tester
Bursting strength tester
Fabric thickness gauge
HATRA crimp rigidity tester
Hydrostatic pressure tester
Instron tensile testers
Lea tensile tester
New Martindale abrasion and pilling tester
Optical Assessment System for Yarn and Fabric Simulation
Pressley fibre strength tester
SASMIRA pilling tester
Shirley comb sorter
Shirley constant tension winding tester
Shirley crease recovery tester
Shirley cyclic bending tester
Shirley weighted ring yarn stiffness tester
Shirley yarn crimp tester
STATIMAT-ME
Stelometer
Tearing strength tester
Twist tester
Uster dynamometer
Uster evenness tester with imperfection meter
Uster staple diagram apparatus
WIRA cotton fineness tester
WIRA dynamic loading machine
WIRA tuft withdrawal tensiometer
Yarn friction tester
Atlas Linitest Laundrometer
Atlas Xenotest Weatherometer
Differential Scanning Calorimeter (DSC)
Dynamic Mechanical Analyzer (DMA)
Flammability tester
Gas Chromatograph Mass Spectrophotometer (GC-MS)
ICP Spectrophotometer
LOI tester
Spin finish analyser
Sun Protection Factor (SPF) Analyser
Thermo Gravimetric Analyzer (TGA)
UV-Visible Spectrophotometer
Water Repellency tester

Yarn Hairiness Tester

Fiber Fineness Tester

SIGNIFICANT RESEARCH PROJECTS

1. Development of Indigenous Thread to be used for the Production of Copper T 200B, *Sponsored by ICMR*
2. Development of Multidirectional Performance Sewing Threads, *Sponsored by CSIR*
3. Process Simulation of Solution Spinning Processes in Manmade Fibre Manufacturing, *Sponsored by CSIR*
4. Expert Systems for Design and Development of Woven Fabrics and Seam Garments, *Sponsored by MHRD*
5. Development of Antimicrobial Polypropylene Surgical Sutures, *Sponsored by CSIR*
6. To Develop Technology for Dyeing and Printing of Coir with Natural Dyes, *Sponsored by Coir Board*
7. Microprocessor/Microcomputer based Instrumentation Controls on the Indigenous Sectional Warping Machine, *Sponsored by DST*
8. Designing of Novel Device for Reducing Hairiness of Ring Spun Yarns, *Sponsored by DST*
9. Development of Website and Database for Indian Traditional Woven Designs, *Sponsored by DSIR*
10. Some Measures to Upgrade Muslin Khadi Fabric, *Sponsored by KVIC*
11. Plasma Modification of Polypropylene Monofilament for Biomedical Application, *Sponsored by ICMR*
12. Development of FEB-based Radiation Grafted Proton Exchange Membranes, *Sponsored by Naval Materials Research Laboratory*
13. Skill and Technology Upgradation in Application of Natural Dyes among Traditional Weavers in Sikkim, *Sponsored by DST*
14. Environmentally Responsive Textile Materials, *Sponsored by MHRD*
15. Development of ANN based Model for Fine Tuning Yarn Manufacturing Process Parameters and Recognition of Yarn Faults, *Sponsored by DST*
16. Development of Online Yarn Tension Control System for Ring Spinning Systems, *Sponsored by DST*
17. Fabric Development and Assessment of Thermal Comfort Characteristics of Fabrics and Fabric Assemblies, *Sponsored by MHRD*
18. Feasibility Study on the Development of Encapsulated Phase Material at Near Body Temperature for use in Protective Clothing, *Sponsored by DRDEL*
19. High Performance Composite Fibres from Nanoclay Reinforced Polymers, *Sponsored by MHRD*
20. Development of 3D Weaving Machine, *Sponsored by DRDO*
21. Development of Low-bulk Commingled Tow Prepregs for Thermoplastic Composite Applications, *Sponsored by CSIR*
22. Development of Sizing Technique for Handloom Weaving, *Sponsored by Handloom Commissioner*
23. Fabric based Material for Canal Lining, *Sponsored by Ministry of Water Resources*
24. Development of Energy Efficient Machinery Components for Power Looms and Mill Sector, *Sponsored by Ministry of Textiles*

Scanning Electron Microscope

Water Vapour Permeability Tester

KEY CONSULTANCY PROJECTS

1. Evaluation of project improvement of physico-chemical properties of jute bast fibre, yarn and fabric for the production of value added and diversified products *for Common fund of Commodities*
2. Advice on production of fully standardized eco-friendly natural dyes *for ALPS Industries Limited*
3. Quality evaluation for acceptability of shirting and suiting cloth *for Maruti Udyog Limited*
4. Advice on quality assurance for dress material fabrics *for Maruti Udyog Limited*
5. Turnkey consultancy services for purchase, installation and commissioning of various plant and machinery at ICT, Bhadohi *for Indian Institute of Carpet Technology*
6. Development/improvement of hand tufting gun *for Ambedi Enterprises Ltd.*
7. Development of modified POY polyester filament yarn *for Reliance Industries Limited*
8. Development of specifications for uniforms in terms of fabric quality parameters *for Mahanagar Telephone Nigam Limited*
9. Develop specifications of fabrics for specified end uses *for Office of the Joint Commissioner of Police*
10. Reduction of neps through modifying the design and new plant design based on dry cutting of tow *for Grasim Industries Limited*
11. Feasibility study of modifications in spinning parameters and CS_2 recovery system with a view to improve the tenacity of viscose fibre *for Grasim Industries Limited*
12. Providing assistance in streamlining the colour measurement with respect to prediction of dope dyed viscose fibres *for Grasim Industries Limited*
13. PV comfort study *for Grasim Industries Limited*
14. Development of an equipment for objective evaluation of structural distortion of light weight canopy fabric for parachute application *for ADRDE, Ministry of Defence*
15. Studies on modified viscose/polyester blended yarns and fabrics *for Grasim Industries Limited*
16. Revision of fabric specifications and evaluation of serge and suitings *for Office of the Joint Commissioner of Police*
17. Evaluation specifications of tile carpet *for Airports Authority of India*
18. Revision of acceptance of neck tie fabrics *for Airports Authority of India*
19. To develop new viscose variant and setup computer colour matching system *for Grasim Industries Limited*
20. Collaborative consultancy for solving shade variation problem and improving whiteness of viscose yarns *for India Rayon and Industries Limited*
21. Advice on mosquito nets *for Hospital Services Consultancy Corp.(India) Limited*
22. Product and process development in nylon 6 *for Century Rubber Limited*
23. Modernisation of terry towel plant *for Rangoli Furnishing(P) Limited*
24. Evaluation and solution to processing problems of nylon 6 tyre cords *for SRF Limited*
25. Workshops and advice on dyeing of carpet wool with natural dyes *for Indian Institute of Carpet Technology*

Technical Fabric

Print Bonded Fabric

RECENT FACULTY PUBLICATIONS

1. Agrawal A K, Singh S K, and Ulreja A, Effect of hydroxide decomposer and slipping agent on recycling of polypropylene, *J. Appl. Polym. Sci.*, 92 (2004) 3247-3251.
2. Save N S, Jassal M, and Agrawal, A K, Stimuli Sensitive Copolymer Poly (N-tert-butylacrylamide-ran-acrylamide). Processing into thin films and their transitional behaviour, *Polymers*, 44 (2003) 7979-7986.
3. Alagirusamy R, Deopura B L, Mattu A and Jain A, Improved thermal bonding behaviour of polypropylene nonwovens by blending different molecular weights of PP, *Fibres and Polymers*, 3 (1), (2001) 38-42.
4. Alagirusamy R, Properties and processibility of compact yarn, *Ind. J. Fibre Text. Res.*, 27, (2002) 362-368.
5. Banerjee P K, Rao G V and Sampath-Kumar S P, Characterization of a braided strip drain with coir and jute yarns, *Geotextiles and Geomembranes*, 18(6), (2000)367-384.
6. Banerjee P K, Chattopadhyay R and Guha A, Investigations into homogeneity of coir fibres, *Ind. J. Fibre Text. Res.*, 27 (2002) 111-116.
7. Behera B K, Mani M P, Mondal A K and Sharma N, Comfort behaviour of cotton polypropylene based bi-layer knitted fabrics, *Asian Text. Jour.*, 32(2), (2002) 61-67.
8. Behera B K, Shalam and Choudhary S C, Comparative assessment of low stress mechanical properties and sewability of cotton and cotton-banana union fabric, *Asian Text. J.*, 9(5), (2000) 49-55.
9. Chaterjee A and Deopura B L, Crystallisation behaviour of PP and Carbon nanofibre blends, *Fibers and Polymers*, 4(3), (2003) 102-106.
10. Chattopadhyay R, Deshmukh S G & Chipunker C, Application of principles of event related open systems to business process reengineering, *Comp. Indust. Engg.*, (45) (2003), 347-374.
11. Chattopadhyay R and Ghosh R, Studies on mass distribution profile of de-attached fibre fringe in a comber, *Ind. J. Fibre Text. Res.*, 28, (2003) 393-398.
12. Chattopadhyay R, Sukhotra K R, Dhamija S and Kaushik R C D, Influence of core sheath ratio and core type on Dref - III friction - spun core yarns, *Ind. J. Fibre Text. Res.*, 25, (2000) 256-263.
13. Chavan R B and Chakraborty J N, Dyeing of cotton with indigo using iron (II) salt completes, *Color. Tech.*, March (2001) 88-94.
14. Chavan R B, Alternative reducing systems for dyeing of cotton with Sulphur dyes, *Ind. J. Fibre Text. Res.*, 27, (2002) 179-183.
15. Das A, Ishtiaque S M and Yadav P, Contribution of core and sheath components to the tensile properties of DREF III yarn, *Text. Res. J.*, 74(2) (2004) 134-139.
16. Gulrajani M L, Gupta D and Gupta Priyanka, Application of natural dyes on bleached coir yarn, *Ind. J. Fibre Text. Res*, 28 (2003) 466-470.
17. Gulrajani M L, Srivastava R C and Goel M, Colour gamut of natural dyes on cotton yarns, *Color. Tech.*, 117(4) (2001) 225-228.
18. Gupta B and Anjum N, Plasma and radiation induced graft modification of polymers for biomedical applications, *Advances in Polym. Sci.*, 162, (2003) 35-61.
19. Gupta B, Bisson I, Kostrzid M, Ruault S, Hilborn J, Florian W and Frey P, Acrylic acid grafting and collagen immobilization on poly(ethylene terephthalate) surfaces for adherence and growth of human bladder smooth muscle cells, *Biomaterials.*, 23, (2002) 3149-3158.
20. Gupta Deepti, Kumari S and Gulrajani M L, Dyeing studies with hydroxyanthraquinones extracted from Indian madder. Part 2: Dyeing of nylon and polyester with nordamnacanthal, *Color. Tech.*, 117(6) (2001) 333-336.
21. Gupta Deepti, Kumari S and Gulrajani M L, Dyeing studies with hydroxy anthraquinones extracted from Indian madder (Rubia cordifolia) Part I, Dyeing of nylon with Purpurin (1, 2, 4-trihydroxy anthraquinone) *Color. Tech.*, 117(6) (2001) 328-332.
22. Ishtiaque S M and Das A, Influence of moisture content and linear density of feed sliver on running performance and yarn quality during rotor spinning of dyed cotton, *Ind. J. Fibre Text. Res.*, 28, (2003) 177-181.

23. Ishtiaque S M and Das A, Comfort characteristics of fabrics containing twist less and hollow fibrous assemblies in weft, *J. Text. Apparel Tech. Manag.*, 3(4) (2004) 1-7.

24. Ishtiaque S M, and Das A, Characterisation of grey and dyed cotton fibres and waste at different stages of rotor spinning process, *Ind. J. Fibre Text. Res.* 28, (2003) 65-70.

25. Ishtiaque S M, Salhotra K R and Gowda R V M, Friction Spinning, *Textile Progress*, 33(2), (2003).

26. Jassal M, Acharya, B N and Bajaj P, Synthesis, characterization, and rheological studies of methacrylic acid-ethyl acrylate-diallyl pithalate copolymers. *J. Appl. Polym. Sci*, 89(5), (2003) 1430-1441.

27. Jassal M, Agrawal, A K and Save Nimal S, Polyacrylamide based breathable coating for cotton fabric, *J. Indust. Text.*, 32(2), (2002) 119-138.

28. Joshi M, Mukherjee A K and Thakur B D, Development of a new styrene copolymer membrane for recycling of polyester fibre dyeing effluent, *J. Memb. Sci.*, 486, (2001) 1-18.

29. Joshi, M, Environmental Management Systems for the textile industry: A Case Study, *Ind. J. Fibre Text. Res.*, 26, June (2001) 33-38.

30. Kothari V K, Mukhopadhyay A, and Dash A K, Thickness and compressional characteristics of air-jet textured yarn woven fabrics, *Int. J. Clothing Sci. Tech.*, 14(2) (2002) 88-99.

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PATENTS

1. Digital image processing based pilling tester.
2. Fabric appearance tester based on Digital Image Processing.
3. Linear gradient heater for continuous drawing of PP filaments.
4. Process for drawing PP filaments using Gradient heating.
5. Spinning of PLLA by dry jet wet spinning method.
6. Development of Antimicrobial nylon sutures.
7. Antimicrobical sutures and products thereof.
8. Development of arsenic separation kit for drinking water.
9. Geosynthetic clay liner.
10. Novel pigment printing composition and process for the preparation thereof.
11. Wound dressing material based on alginates.
12. Anti-microbial finishing of cotton using neem extract.
13. Process for producing natural dyestuffs from plant material.
14. A process for cleaning of silk fabrics.
15. A cooking process for silk cocoons.
16. A process for dyeing cocoon with lac dye.
17. Process for extraction of the brown colouring principle of *Rumex maritimus* and method for the dyeing of textile substrates there with.
18. Process for extraction of the brown colouring principle of *Trigonella foenum- graecum* and method for the dyeing of textile substrates there with.
19. A Method of Dyeing of Textile Yarns and Fabric by Electrodeposition and Products Thereof.
20. A Method of Simultaneous Recovery of Monomers and Oligomers from Waste of Nylon-6 Production and Products Thereof (Jointly with Modipon Fibres Company)
21. A Method for Copolymerization of Oligomeric Waste Obtained from Nylon-6 Production, and Products Thereof (Jointly with Modipon Fibres Company).

TEXTILE ENGINEERING SOCIETY AND ALUMNI INTERACTION

The Textile Engineering Society is a fraternity comprising of all students enrolled in the department, the faculty members and all its alumni. Under the motto of 'Weaving the People Together' various events are organized to create opportunities for members of TES to interact in a relaxed, informal & creative atmosphere, and thus bond better with each other.

The department has a regular and active interaction with its alumni spread all over the world. The annual alumni interaction event "Antarang" is hosted every year in the third week of January. The highlight of the event is the Panel Discussion on a topical issue. Captains from the textile and allied industries share their vision as well as experiences with the students and often highlight the niche areas where our students can make a difference..

Department has instituted a 'Pride of the Department Award' to be bestowed on the department alumni who have made significant contributions in their chosen field of profession. Past awardees include Dr. S. K. Chaudhuri, Director for India and South East Asia, The Woolmark Company, Mr. G. Krishnamurty, Entrepreneur, Mr. Thomas Varghese, Executive President (Marketing), Birla Viscose, Mr. Mohan Rao, President (Operations), Himatsingka Seide Limited and Mr. Ambuj Kalra, Senior Vice President, Coats India Ltd.

INTERACTION WITH INDUSTRY

Faculty members are increasingly involved in industrial consultancy both on short term and long term basis. In the last five years consulting assignments worth Rs. 76.80 lakhs have been undertaken. Several faculty members have taken leave from the Institute to work full time with the industry for a period of up to one year.

In many of the Research projects implemented during the last five years, industry has collaborated in the research work. Recently, Vardhman group of industries has donated equipment worth rupees one crore to the department laboratories.

Many B.Tech. and M.Tech. projects have been undertaken on industry related problems. M.Tech students are actually encouraged to carry out their experimental work in the industry.

CEP programs are organized to upgrade the knowledge base of personnel already employed with the industry or other government organizations.

The department faculty and students travel abroad frequently to interact with international universities and industry. Students go for their summer internships to many European industries and research organizations.

High Production Card

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