

Textile Engineering department
Major projects

Title of Project	Name of Project Guide	Abstract	Photo-Graphs	Thrust Area	Publicat-ion
Session 2016-17					
Influence of different weft on physical and comfort properties of denim fabric	Prof.Dr.A.W.Kolhatkar Co-Guide- Prof.A.R.Rathod	The aim of this study was to asses and compares the denims fabric properties using three different weft yarns, Threads per inch and weft type. These parameters have great impact on some of comfort properties, tensile strength, tear strength, seam slippage and bursting strength.		Weaving – Denim Fabric Weaving with different weft	
Effect of pick densities and weaves on thermal comfort properties of worsted suiting fabrics	Prof.G.S.Kakad	This project represents new domain of research and development on various comfort aspect of woven worsted fabric by changing pick densities and different weave structure of the fabric. In this project it has been analyzed how these parameters affects the thermal properties of worsted suiting fabrics. Also the attempt is made to optimize the fabric parameters so as to get better thermal comfort in worsted suiting fabrics.		Weaving – Worsted fabric weaving with different pick densities & fabric weave	
To study on scouring process for cotton fabric by using enzyme	Prof.S.K.Soni	In this project Alkaline scouring method had been chosen as the reference method and experimental results are compared with the combine scouring process. Recipes were developed according to		Processing – Enzyme Scouring	

		general requirements of combining agents and tested with 100% gray cotton plain fabric and results were analyzed.			
Analysis of UV protection characteristics of bamboo fabric dyed with natural and synthetic dyes	Prof.A.R.Rathod	This study is related to the ultraviolet protection factor of bamboo fabric. Here it is tried to study the UPF of bamboo fabric after each stage of chemical processing, and comparative study was made between two samples after dyeing with natural and synthetic dye.		Processing –Dyeing natural & Synthetic dyeing of bamboo fabric Ultraviolet Finishing	
Preparation of conductive composite by using stainless steel fibre matrix	Prof.P.S.Rahangdale	In this study tests are made and compared the electromagnetic shielding efficiency of stainless steel – jute and aluminium, here the jute composites are having different ratios of fibres and allignments.		Technical Textile – Conductive composite using stainless steel fiber Composites	
Session 2015-16					
To study the effect of weft twist loss in strength properties of denim fabric produced on airjet loom	Prof.Dr.A.W.Kolhatkar	In this study the effect of weft twist loss on strength properties of denim fabric was investigated. The fabric samples were produced on airjet loom.		Weaving – Denim Fabric weaving by using airjet weaving	
To study the low stress mechanical properties of fibre, yarn, fabric on total hand value of worsted suiting fabric	Prof.G.S.Kakad	In this project a attempt is made to study the low stress mechanical properties of fabric, and how the low stress mechanical properties of fibre, yarn and fabric on total hand value of worsted suiting fabric.		Weaving – Worsted Suiting Weaving	Analysis of Worsted Suiting Fabric Formability using Siro Fast Evaluation System, China Textile Science, January 2015.
To study	Prof.A.R.Rathod	In this project work the		Knitting	

physical & comfort properties of soybean fabric		Physical and Comfort properties of Soyabean:PV Blended yarn and fabric is studied by manufacturing Single jersey Knitted Fabric.		– Single Jersey Knitting of Soyabean yarn	
Fabrication of electromagnetic shielding Instrument with attachment of frequency transport mechanism	Prof.P.S.Rahangdale	Electromagnetic shielding Instrument is Fabricated with attachment of frequency transport mechanism. For testing the instrument fabric samples have been developed using composite yarn consisting of carbon and jute monofilaments at different weave.		Technical Textile Composite – Fabrication of Electromagnetic shielding instrument	

Session 2014-15

Comparative study of spinning process performance with standard norms.	Prof.Dr.A.W.Kolhatkar	In this project work an attempt was made to study the process control, through quality control aspects of spinning mill. Here the quality of the fiber to yarn is studied and the actual results are compared with Standard norms and recommended of the mill people.		Spinning – Process control in spinning	
To study the total appearance value (TAV) of worsted fabric containing different weft yarn and count.	Prof.G.S.Kakad	In this study the total appearance value of the worsted suiting samples are studied. Here the worsted suiting samples were prepared by using different weft yarns and different yarn count.		Weaving – Worsted suiting, weaving by using different weft yarn	
Comparison of knitted and woven denim	Prof.S.K.Soni	In this project identified the sample which gives the best apparel properties. The objects on Comparison done on Knitted denim samples and woven denim sample		Weaving and Knitting, Weaving – Denim Weaving & denim	

				Knitting	
Comparative study of physical characteristic of needle punched non-woven fabric	Prof.A.R.Rathod	In this project work the nonwoven fabrics are produced on needle punch nonwoven such as bamboo:polyester, bamboo:cotton, & bamboo:viscose machine with different blend ratio 60:40.The mechanical properties of needle punched fabric of bamboo: polyester, bamboo: cotton, bamboo: viscose have been studied.		Technical Textile – Nonwoven , Needle punching nonwoven	
Determination of frequency absorbent by transmitted of textile material	Prof.P.S.Rahangdale	The composite will be tested for its mechanical properties using conventional testing machines and the results will be recorded .both side of layer absorbing and reflecting composite layer.carbon and aluminium monofilament at different wave for evaluating electromagnetic shielding effectiveness over a different frequency range at different voltage.		Technical Textile Composite	
Session 2013-14					
Reducing the Imperfection Level in Yarn by Optimizing Carding Performance	Prof.Dr.A.W.Kolhatkar	In this study, the relationship between different process parameters in blow room and card and their influence on yarn imperfection has been studied. The process parameters were correlated with yarn quality.		Spinning – Carding performance	
To study the influence of	Prof.G.S.Kakad	The influence of different processing stages on low		Weaving - &	Ascertaining the Effect of Chemical

chemical processing on total appearance value (TAV) of woested suiting fabrics		stress mechanical and surface properties of worsted suiting fabric has been studied. The project deals with the experimental investigation of worsted suiting fabrics mechanical and surface properties at low loads, as well as their formability and the influence of different finishing treatments upon these properties.		Processing worsted weaving & chemical processing stages	Processing Treatments on Low Stress Mechanical Properties of Worsteds Suing Fabrics, 44th Textile Research Symposium, Dept of Textile Engg. IIT Delhi & The Textile machinery society of Japan (TMSJ), 14 th to 16 th December 2016.
Reversible denim trouser	Prof.S.K.Soni	A reversible or two-way denim garment which provide different washes on a inwardly-facing portion and an outwardly-facing portion of the fabric, which can be manufactured efficiently and economically, and has excellent appearance and functionally on both the surface thereof		Denim Garments reversible	
Study on effect of UV radiation on properties of bamboo fabric	Prof.A.R.Rathod	The investigation is made to understand the behaviour of UV radiation of bamboo fabric. Along with the UV radiation, abrasion resistance, elongation and fabric strength is also measured.		Weaving – Bamboo fabric Weaving	International conference on “Multidisciplinary Innovation in Business Engineering Science & Technology” Manila, Philippine (MI-BEST-2015) , 26 th & 27 th February 2015. “Analysis of Physical Characteristics of Bamboo & Its Blended Woven Fabrics” Physical & UV Protection Properties

					of Knitted Bamboo Fabrics, Textile Review, Vol .7, pp.24-26, October 2012
Effect of different voltage on frequency absorption of various composites	Prof.P.S.Rahangdale	Herein, multilayer shielding structures are studied,with both absorbing and reflecting composite layers.also woven fabric samples have been developed using composite yarn consisting of carbon and copper monofilaments at different weave for evaluating electromagnetic shielding effectiveness over a different frequency range at different voltage.		Technical Textile Composites for electromagnetic sheilding	
Session 2012-13					
Investigation of worsted suiting fabric burning behavior using MATLAB	Prof.Dr.A.W.Kolhatkar	In this project, investigation is made to see the effect of various fabric parameters that is fibre fineness, thread density and weave on extent of hazard on skin while burning of worsted suiting fabrics.		Weaving – Burning behavior of worsted suiting fabric byusing MATLAB	
To Study the Influence of Blend and Weave Types on Total Appearance Value (TAV) of Worsted Suiting Fabrics	Prof.G.S.Kakad	In this study the total appearance value of the worsted suiting samples are studied. Here the worsted suiting samples were prepared by using different fibre blend yarns and different weave design.		Weaving – Worsted suiting weaving	
Hand assessment of denim fabric by subjective evaluation	Prof.S.K.Soni	This project introduces the hand assessment of denim fabric by subjective Evaluation. The samples are graded by the different panelists and according to their judgment properties are		Garment – Handle properties of denim fabric	Handle Properties of Denim Fabrics, 44th Textile Research Symposium, Dept of Textile Engg. IIT Delhi & The Textile machinery society of

		noted down.			Japan (TMSJ), 14 th to 16 th December 2016.
Comparison of UV Protection Characteristics of Different Fabrics and Its Optimization	Prof.A.R.Rathod	In this project different fabric samples were constructed using different fabric specification, on a highly advanced sample weaving machine (pneumatic rapier). Then UPF of these fabrics were measured at different stages such as at grey stage, and after desizing and the results are analysed.		Weaving & Testing. Rapier weaving, UV protection characteristics	Handle properties of Bamboo & Cotton Fabric., China Textile Science, Vol.2, pp.36-40, April 2012
Study of Different Composite Materials Using Carbon Filament	Prof.P.S.Rahangdale	In this report, jute fabric/carbon reinforced epoxy composites, linen fabric/carbon reinforced epoxy composites developed by vacuum chamber molding machine. These composites are characterized by EMI shielding, tensile test, and observation of surfaces under high resolution FESEM.		Technical Textile Composite	

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Minor projects**

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Session 2016-17					
Effect of different weft material on thermal properties of worsted suiting fabrics	Prof.G.S.Kakad	This project is aimed to analyse thermal properties of worsted suiting woven fabrics containing different weft materials cotton, linen, polyester, polyester-viscose blend, polyester-cotton blend. Proposed thermal analysis of worsted fabrics will help in selecting the right		Weaving – Worsted weaving by using different weft material	

		combination or blend of material in view to produce worsted suiting fabrics suitable for different geographic and climatic requirements.			
To study the desizing with enzymatic method	Prof.S.K.Soni	The goal of this work is to study most aspects of preparatory finishing desizing by means of "green chemistry," or, in other words, nontoxic enzymatic treatments. Partial purification of these enzymes using dialysis and chromatographic techniques was carried out, and the purified enzymes were characterized. Different effects on the enzyme activity, including temperature, pH, and surfactant, were studied.		Processing – Enzymatic Desizing	
Analysis of fastness properties of bamboo fabric dyed with natural dyes	Prof.A.R.Rathod	In this project work the Bamboo fabric is dyed with natural dyes like rose and marigold flower. And also studied the fastness properties of bamboo fabric, such as Rubbing fastness, Light fastness, Washing fastness and Perspiration fastness.		Processing Dyeing by using natural dyes	
Electromagnetic shielding by using polyaniline composite	Prof.P.S.Rahangdale	In this project samples are prepared with polymerization process on the cotton/jute fabric with polyaniline. The conductive property was assessed with effect on electromagnetic shielding of coated fabric with polyaniline.		Composites - polyaniline composite	
To study the effect of	Prof.R.P.Sawant	The aim of this study is to investigate the effect of		Weaving Preparatory	

different sizing ingredients on the properties of yarn.		different sizing ingredients on the properties of yarns. Here the four different yarn samples are sized with different ingredients (Viz. Modified starch, Poly-Vinyl Alcohol) at twelve percent concentrations and the samples were tested before and after sizing the yarn.		- Sizing by using modified starch & Polyvinyl alcohol	
Session 2015-16					
Fading of denim fabric by coconut husk.	Prof.S.K.Soni	In this project denim fabric is faded by fibrous husk of coconut. This method is good to be used because the process which are using in the industry, that are not good for the environment.		Processing – Denim fabric fading	
Study on physical properties of bamboo/cotton needle punch nonwoven fabric	Prof.A.R.Rathod	In this project the attempt is made to investigate the properties of bamboo/cotton needle punched nonwoven fabric such as tensile strength, elongation and burst strength etc.		Nonwoven – Needle punch Nonwoven for Bamboo / Cotton	
Electromagnetic shielding by using polypyrrole composite	Prof.P.S.Rahangdale	The study is made regarding electromagnetic shielding by using polypyrrole composite. The current state of work on standardization and measurement methods for the SE of thin materials are also presented.		Technical Textile Composites - polypyrrole composite	
Characterization of conductive fabrics prepared by insitu polymerization of pyrrole	Prof. M.S.Ingole	In this project conductive fabrics were prepared by a combined in situ chemical and polymerization of pyrrole. Pyrrole was polymerized in the presence of anhydrous ferric chloride as oxidant. Best results were obtained when pyrrole was allowed		Processing – Polymerization of pyrrole	

		to diffuse in the textile material.			
Session 2014-15					
To study the total hand value of worsted suiting fabric	Prof.G.S.Kakad	The influence of different processing stages on total hand value of worsted suiting fabric has been studied. The experimental investigation is made of worsted suiting fabric for surface properties at low loads as well as formability and influence of different finishing treatment upon these properties.		Weaving – Worsted suiting woven fabric	
Perception of lady consumers regarding the handle properties of denim fabric	Prof.S.K.Soni	Touching a fabric is the first action that buyers perform in order to evaluate the fabric quality to choose a fabric suitable for garments and to estimate the performance of a fabric for end use. Hence this project introduces the hand assessment of denim fabric by subjective evaluations.		Garment – Handle properties of denim fabric	
Antibacterial performance of bamboo fabric Vs cotton fabric	Prof.A.R.Rathod	Natural bamboo fibre is a new type of plant fibre using for textile. Its natural antibacterial property has not been investigated fully. In this project the antibacterial property of natural bamboo fabric was determined with the method of antibacterial test.		Weaving & processing – Antibacterial property of fabric woven from bamboo & cotton yarn	
Testing of E.M.S. of samples using klystron in the exists instrument	Prof.P.S.Rahangdale	In this study the two physical phenomena, absorption and reflection was observed. Also the scope of the application of the presented method is checked.		Testing – E.M.S. testing by using klystron	
Effect of	Prof. S.S.Gulhane	The moisture transmission		Processing	

various dyes on wicking of cotton fabrics		behavior of the fabric changes after dyeing. The change in moisture transmission varies with respect to the type of dye and concentration of dye. Therefore this project is focused on the effect of various type of dye on the cotton fabric sample.		– Dyeing , Wicking behavior of fabric	
To study the antimicrobial properties of cotton fabric treated with turmeric and honey	Prof. D.P.Ubarhande	In this project an attempt is made to develop antimicrobial textiles using honey and turmeric. The antimicrobial activity of honey and turmeric treated fabric were tested against microbes by soil burial test.		Processing – Antimicrobial Finishing	
Effect of mordanting on dyeing fabric by using marigold dye	Prof. Y.G.Wanere	In this project effect of mordanting on dyeing fabric is studied by using marigold dye. The prepared fabrics were assessed for stiffness, rubbing fastness, washing fastness, light fastness, tearing strength properties.		Processing – Dyeing marigold with dye	
Session 2013-14					
Laser Faded Denim	Prof.S.K.Soni	In this project the laser fading is done to give worn out appearance without wastage of water and less chances of wear and tear of the fabric. Here laser fading is done by use of CO ₂ gas with different intensity so that the fabrics don't get affected.		Processing – Laser fading of Denim	
Reinforcement of bamboo fibre in cement composite	Prof.A.R.Rathod	In this project the composite is produced by using bamboo fibre, this fibre is used to produce the cement composite, here because of the use of bamboo fibre in composite the compressive strength of		Technical Textile Composite-Reinforcement of bamboo fibre in cement	

		cement composite is improved.			
Fabrication of electromagnetic shielding instrument	Prof.P.S.Rahangdale	In this project fabrication of electromagnetic shielding instrument is made and it has been observed the different proportions of two physical phenomena, absorption and reflection.		Fabrication of instrument	
Fabrication of vertical wicking testing instrument-I	Prof.S.S.Gulhane	In this project, fabrication of vertical wicking testing instrument is made. Here to test the instrument the fabric samples are tested, this instrument display wicking length on the LED display automatically. Thus the variation in the result because of manual error is removed.		Fabrication of instrument	
Session 2012-13					
To study the effect of various fabric parameters influencing drape behavior of worsted suiting fabric	Prof.G.S.Kakad	In this study influence of various fabric parameters viz. micronaire, thread density, linear density of yarn, twist multiplier and weave on drape behavior of worsted suiting fabric. Investigation shows that drape coefficient of worsted suiting fabric changes significantly as the fabric parameters changes.		Weaving – Worsted suiting fabric weaving	
Perception of young consumers regarding the handle properties of denim fabric	Prof.S.K.Soni	This project introduces the hand assessment of denim fabric by subjective evaluation. In this project it has been asked the youth consumers to assess 20 denim fabric samples for hand value. The results of subjective hand evaluation were analyzed by statistical method. Hand value of the highest ranked fabric is		Testing – Handle property of denim	

		obtained by Kawabata Evaluation System.			
Study on degradation of fabrics from UV radiations	Prof.A.R.Rathod	In this project fabric degradation because of UV radiation is studied. In order to manufacture the fabric two different counts of yarn is used with three different materials viz. P/C blend, P/V blend and cotton.		Weaving – Weaving of P/C, P/V & cotton fabric for degradation study	
Study of linen composite material	Prof.P.S.Rahangdale	In this project composites of flax fabric with epoxy resin were prepared and studied the hardness and tensile properties of particular composite sample. Comparison is made between linen and linen epoxy composites very clearly.		Technical Textile Composites – Linen Composite	
Fabrication of vertical wicking testing instrument-I	Prof.Pankaj Jirafe	In this project, fabrication of vertical wicking testing instrument is made. Here plated knitted fabrics produced with functional fibre yarns in the back of the knit, combined with polypropylene in the face. This fabric is then tested in terms of their wicking behavior and drying rate capacity.		Fabrication of instrument	