TESTING & CONSULTING FACILITIES
OF TEXTILE TECHNOLOGY
Kumaraguru College of Technology (KCT), Coimbatore is an autonomous Engineering College, established in 1984 under the auspices of Ramanandha Adigalar Foundation, part of Sakthi Group founded by Arutchelvar Dr.N.Mahalingam, a Gandhian, industrialist and a philanthropist. He envisioned to empower the youth through quality education and thereby drive socio economic development blended with spirituality. True to the vision of its Founder, KCT stands today as an institution of excellence in technical education with 32 years of illustrious service to the students, many of whom are shining as leaders and contributors to development, across the world.

Located amidst the IT corridor in a sprawling campus of 150 acres, KCT offers 13 Under Graduate and 14 Post Graduate programmes with many approved Research Centres. More than 6000 students are imparted quality technical education by a dedicated team of 395 qualified and experienced faculty members and ably assisted by 360 supporting staff. The college has residential facilities to accommodate about 3300 students in 8 blocks with state-of-the art dining halls and student facility centre. Well-equipped laboratories, research facilities such as iQube, CEAD, Modern Garage, dirt-track range are some of the facilities which are part of KCT. FORGE, a techno business incubator of KCT provides technological consulting for start-up pursuits of alumni of KCT and entrepreneurs, besides supporting conversion of innovative ideas of students into product development.

Under the able guidance and adept administration of Dr. B. K. Krishnaraj Vanavarayar, Chairman, Sri. M.Balasubramaniam, Correspondent and Sri. Shankar Vanavarayar, Joint Correspondent, the college has been consistently progressing in academics, infrastructural development including student amenities. The college has 28 clubs and forums, sports facilities spread across in 21 acres with modern facilities, a State-of the art Gymnasium, and an exclusive department for Human Excellence, ably supported by the Mahatma Gandhi and Swami Vivekanandha Study Centres to groom the human in the budding professionals.

The continuous growth in placements over the years in well reputed IT and Core companies, pursuit of higher studies by students in renowned institutions in India and abroad and remarkable entrepreneurial pursuits of the alumni have been the laurels that adore KCT continuously. The accreditation from NAAC and NBA for quality and standards of education and 53rd position in all India level in the NIRF ranking have added feathers to the cap of KCT. With the continuous support of all its stake holders, KCT continues to march forward to the next level of progress.
DEPARTMENT

Department of Textile Technology was started in the year 1995 with the Objective of imparting comprehensive knowledge in all the faces of Textile Manufacture to students through UG & PG programmes. Professionally well qualified, highly experienced faculty members and well equipped laboratory with modern facilities provide ample opportunity to the students to pursue their education with excellence. Students are provided with good industrial exposure taking full advantage of college location in the Textile City, Coimbatore. The accreditation status has been awarded to the B.Tech Textile Technology undergraduate programme by National Board of Accreditation, AICTE, New Delhi for Five Years with effect from September 2013.

PROFILE

Fifteen dedicated faculty, five of them hold Ph.D degrees from leading Universities, eight faculty members are currently pursuing Ph.D research in various thrust areas of textile technology. Faculty are qualified from premier institutions such as IIT-Delhi, VJTI-Mumbai and Anna University-Chennai with average experience of more than 10 years with vast industrial exposure.

VISION

To provide world class human resource to Indian Textile Industry by offering Under Graduate and Post Graduate programmes of International standard and by undertaking research in frontier areas of Textile Technology.
COURSES OFFERED

(A) UNDERGRADUATE DEGREE PROGRAMME
B.TECH TEXTILE TECHNOLOGY (FULL TIME)

The 4 years B.Tech Degree programme (8 semesters) offers basic sciences and basic engineering science along with the following core courses. Laboratory classes and In-plant training are given to students to impart practical knowledge.

(B) POST GRADUATE DEGREE PROGRAMME
M.TECH TEXTILE TECHNOLOGY

This programme was started in 2002 with 18 seats.

The 2 years Post Graduate programme (4 semesters) offers the students to study the following subjects.
PG CORE SUBJECTS

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<td>Fibre Science Lab</td>
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<tr>
<td>Advances in Knitting Technology</td>
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RESEARCH PROGRAMMES

1. M.S. (BY RESEARCH) IN TEXTILE TECHNOLOGY (FULL TIME AND PART-TIME)
As a collaborative research centre under the Anna University, Chennai the Department is also offering M.S (By Research) both Full Time and Part Time. The minimum duration for Full time & Part time programmes is 2 & 3 years respectively. The maximum duration for both Full Time and Part Time is 4 years. Applications for admission to M.S. (By Research) programmes are invited during August and February every year by Anna University, Chennai.

2. PH.D TEXTILE TECHNOLOGY (FULL TIME AND PART-TIME)
Textile Department of KCT is the recognized research center for the PhD scholars under Anna University, Chennai and Twenty PhD Scholars are currently pursuing research in Nano Composites, Medical Textiles, Technical Textiles, Fibre Modification, Eco-Friendly Processing. Applications for admission to Ph.D. programmes are invited during August and February every year by Anna University, Chennai.
TEXTILE TESTING LABORATORY : FIBRE TESTING

BAER SORTER

The effective length and the short fibre content of the cotton fibres can be determined using Baer sorter instrument. The test standard is IS 233 Part II.

STELOMETER

Fibrostelo is an instrument used to find out the bundle strength and elongation at break of the fibres by CRL principle. Natural fibres are tested for their bundle strength due to high variation in terms of length and fineness. The test standard is ASTM D 1445.

TRASH ANALYSER

The amount of trash present in cotton fibre and invisible loss % can be analysed using trash analyser. The test standard is IS 4871 – 1968.

FIBRE FINENESS TESTER

The resistance offered to the flow of air through a plug of fibres is dependent on the surface area of the fibres and hence the fibre fineness tester uses the airflow principle to determine the fibre fineness in micrograms per inch. The test standard is ASTM D 1448.445.
TEXTILE TESTING LABORATORY: YARN TESTING

WRAP REEL

To determine the count and lea strength of the yarn, the yarn has to be prepared as a lea of 120 yards. Wrap reel is used to prepare the sample of a lea. The test standard is ASTM D2260.

YARN TWIST TESTER

Yarn twist tester is used to determine the yarn twist in single or plied or OE yarn by untwist – retwist method. The twist standard is ASTM D 1422.

TEXTILE TESTING LABORATORY: FABRIC TESTING

AUTOMATIC BURSTING STRENGTH TESTER

Automatic bursting strength used to determine the bursting strength of woven, knitted, nonwoven and industrial fabrics. The unit of measurement is Kgf/cm². The test standard is ASTM D 3786.

AIR PERMEABILITY TESTER

Air permeability tester is used to determine the air flow properties of fabrics used for filters, airbags, parachute etc. The test standard is ASTM D737 - 96.
TECHNICAL TEXTILES LABORATORY

UNIVERSAL TESTING MACHINE

The Universal Testing Machine is used to test the tensile strength and elongation of fibre, yarn, rope, wire, twine, cord, and textile fabrics. Further, tensile strength, elongation and flexural rigidity can be found out for composite materials, cardboards and plastics. The compressive strength also can be determined for hollow tubes, paper cones, forms and other materials having a thickness/diameter of more than 10mm.

Capacity : 500 KN.
Digital Display
Stress - strain curves

LIMITING OXYGEN INDEX APPARATUS

Using this apparatus the minimum oxygen required just to support flaming combustion can be determined as per ASTM D 2863 standards for both ambient and elevated temperatures.

LIMITING OXYGEN INDEX for wide range of materials such as polymers, cables, textiles, plastics, rubber, nylon, laminates, paints and surface coatings can be determined using this apparatus.

Direct / Digital readout of % of oxygen in gas mixture is obtained.
Temperature range : Ambient to 400°C +/- 2°C, LC 1°C

COMPRESSION MOULDING MACHINE

Using this machine variety of composites can be prepared with different fibres, fabrics and different resins at different Temperature, Time and Pressure.

Sample dimension : 250 x 250 x 75 mm
Maximum Pressure : 200 kgs / cm²

ELECTROSPINNING

Electrospinning is as a versatile and cost-effective technique for producing multifunctional nanofibers from various polymers, polymer blends with diameters ranging from a few nanometers to several micrometers (usually between 50nm and 500nm).

Nanofiber applications include:
- Air and liquid filters
- Wound dressings
- Tissue engineering
- Drug delivery and release control
- Surface modifications
- Sound absorptive materials
- Energy harvest and storage
- Environmental protection
- Catalyst and enzyme carriers
TEXTILE PROCESSING LABORATORY

SOFT OVERFLOW DYEING MACHINE

Soft Overflow Dyeing Machine is ideal for dyeing of all type of fabric either in woven or knitted form. Fabric made out of Polyester, Nylon, Wool, Acrylic, Silk, Cellulosic and their blends can be processed in Soft Overflow Dyeing Machines.

SPECIFICATIONS

Fabric loading capacity per batch : 2-3 Kg
Liquor Capacity [liters] : 20-40
Material & liquor ratio [MLR] : 1:10
Winch speed [MTR/Min] : up to 125
Winch motor : 1HP
Centrifugal circulation pump [1440 RPM ] : 2HP
Maximum temp : 140°C
Max. working pressure [KG/CM] : 3.5

PACKAGE DYEING MACHINE (YARN DYEING MACHINE)

This machine is fabricated with the aid of latest and advance technology and machineries, along with the utilization of superior grade products that is synchronized with the set industry guidelines. These machines are appropriate for dyeing all type of natural and synthetic material in the form of package condition.

Technical Information:

• Maximum sample size: 2-3 kg
• Maximum temperature: 1300 C
• Maximum working pressure: 4 kg/sq cm
TEXTILE PROCESSING LABORATORY

LABORATORY PADDING MANGLE

Padding mangle is used for dyeing and finishing applications in woven and knitted form. This is manufactured by using optimum quality components and sophisticated technology in synchronized with industry norms. Fabric made out of Polyester, Nylon, Wool, Acrylic, Silk, Cellulosic and their blends can be processed in Padding mangle.

Technical Information:
- Model: Table Top
- Working width: 450, 600mm.
- Automation: Microprocessor Controller.
- Bowl hardness: 65°-70° Shore Hardness
- Working Pressure: 4Kg/Cm²
- Cloth Speed: Variable up to 6 Mtr / Min

LABORATORY INFRACOLOR DYEING MACHINE

Infracolor is a laboratory apparatus suitable for dyeing of any type of fibers like Polyester, Nylon, Wool, Acrylic, Silk, Cellulosic and their blends can be processed at high temperature using infrared radiation.

SPECIFICATIONS
- Total chambers: 12
- Liquor capacity: 250 ml per chamber
- Sample size: 100 gram per chamber
- Heating medium: Water or glycerin
- Temperature range: 0-150°C
- Speed: 17 rpm
SANITARY NAPKIN MANUFACTURE MACHINE
(The following machine and materials are available to manufacture the low cost napkin)

DEFIBRILLATING MACHINE
The carbon alloy steel blade in this machine that runs at 10,000 rpm that defibrillates the wood pulp to a required filament length 1-1.5mm

PRESSING MACHINE (CORE FORMING MACHINE)
The purpose of this part of the machine is to compress the defibrillated fibres into a required shape of the soft core of the napkin. It is a manual machine that does not utilize power. The machine size is 24" X 24" X 30". The mould or core block is made of food grade Aluminum

SEALING MACHINE (FINISHING MACHINE)
The pressed core is wrapped with PP non-woven fabric and the edges are sealed by sensitive impulse sealing method. The power required is 40 volts. The machine speed is 2-3 napkins per minute. This machine size is 36" X 30" X 30"