

R & D PROJECTS CARRIED OUT AT SASMIRA IN THE LAST TEN YEARS

Sr.No	Name of the Project	Year of Sanction	Duration in years	Research subject area	Achievements
1.	Indigenous manufacturing of woven geotextiles for ground improvement using vertical drain technique	2007	24 months	Product development	<ul style="list-style-type: none"> • Installation of developed Vertical Drains and their onsite performance. • The development of drains for achieving quick stabilization of wet soil would be carried out under this project.
2.	Low cost upgradation of first generation imported looms and indigenous shuttles looms for decentralize sector for enhanced productivity and quality	2007	24 months	Product development	<ul style="list-style-type: none"> • Pick-Finding System, Auto-shed leveling system and Reed Inclination system fabricated.
3.	Developing fabrics with thermoregulatory properties using phase change materials (PCM) for speciality application	2007	24 months	Product development	<ul style="list-style-type: none"> • Application of phase change material on fabric substrates.
4.	Development of Durable, Breathable and Barrier Work wear Fabrics for Agrotextile Applications	2008	24 months	Product development	<ul style="list-style-type: none"> • Workwear for agricultural applications with functional properties developed.
5.	Development of Specialty Fabric for Water conservation and Soil Erosion Control used in Horticulture Application	2008	24 months	Product development	<ul style="list-style-type: none"> • Fabric structures developed have been taken up for field trial for Long term crop Mango plantation and Short term crop Okra plantation
6.	Indigenous Development of Ultrasonic Device(S) for Maintenance of Weaving Accessories	2008	24 months	Instrument development	<ul style="list-style-type: none"> • Single bath ultrasonic device for cleaning of weaving accessories developed
7.	Application of Supercritical Fluid (SCF) for Dyeing	2009	24 months	Process Development	<ul style="list-style-type: none"> • Process for dyeing of polyester and cotton in supercritical carbondioxide developed. • Dissemination of research in reputed journals • Wet process industry interested in know-how of the technology

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8.	Development of PET/ nanoclay nanocomposites for barrier packaging	2009	24 Months	Product Development	<ul style="list-style-type: none"> • Nanocomposite for barrier packaging developed using PET / Nanoclay
9.	Dyeing of Polypropylene using Nanotechnology	2009	24 Months	Process Development	<ul style="list-style-type: none"> • Process for dyeing of polypropylene (PP) using nanotechnology by incorporation of nanoclay inside the PP polymer matrix was developed. • Industries have shown interest in the exploring the possibilities of manufacturing modified Polypropylene granules in future.
10.	Evaluating compatibility & establishing methodology for simultaneous functional finishes for textile	2009	24 Months	Product development	<ul style="list-style-type: none"> • Multi-functionality in textile substrates developed using antiviral followed by antibacterial followed by antifungal.
11.	Development of reflective Agrotexiles for Sun management	2009	24 Months	Product Development	<ul style="list-style-type: none"> • The double layer Black and white fabric for ground covering was developed through weaving process. • The fabric has been tried for its advantage in ripening of tomatoes.
12.	Design of processing sequence suitable for embroidered fabrics incorporating embellishments	2009	24 Months	Process Development	<ul style="list-style-type: none"> • Developed a standard sequence for processing of embroidered fabrics for incorporating embellishments • A guideline was designed for the processors to handle delicate materials.
13.	Standardisation of Norms for Agricultural Shade Net	2009	24 Months	Standardisation	<ul style="list-style-type: none"> • New methods for measuring light shading percentage derived. • Ready reckoner prepared for appropriate usage of shade nets
14.	Development of super absorbent polymer fibre mats for water management in horticulture applications	2010	24 Months	Product Development	<ul style="list-style-type: none"> • Various nonwoven fibre mats suitable for ground covers using Superabsorbent Polymers developed. • Field trials were carried out using the SAP mats for potted palm plant at Plant Nursery in Navi Mumbai.
15.	Establishment correlation on UV stability of Technical Textiles under different exposure conditions	2010	24 Months	Standardization	<ul style="list-style-type: none"> • Weathering test carried out on Technical textile. • A ready reckoner booklet has been brought out to know the sample degradation under different light

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16.	Development of electrically conductive PET/CNT nanocomposites film	2010	36 Months	Process Development	<ul style="list-style-type: none"> • Three different varieties of PET/CNT Nanocomposites with 1%, 2% & 3% of CNT wt % have been developed.
17.	Development of Multilayered Bio-Mat to Combat Oil Spill Pollution	2012	24 Months	Product Development	<ul style="list-style-type: none"> • Multilayered bio-mat designed and developed by optimizing its various components viz. amount of bacterial consortium, lignite content and suitable textile substrate. • Onsite trial conducted in the industry to assess the suitability/useability of the product • A patent has been filed on same. Received SILVER AWARD at the 46th SKOCH AWARDS 2016.
18.	Development of UV fluorescent yarn for use in agrotextiles to detect counterfeits	2012	24 Months	Product Development	<ul style="list-style-type: none"> • UV Fluorescent yarn developed by compounding the polymer with suitable pigments. Samples of agro shade nets have been woven incorporating the developed yarn. • These shade net structures were tested under UV fluorescent light to detect the counterfeit.
19.	Extraction of colourants from microorganisms having functional properties for textile applications	2012	24 Months	Process Development	<ul style="list-style-type: none"> • The violet, red and purple colour pigment was extracted from microorganism and successfully applied on the textile substrate. • Dyeing methodology was optimized for the said microbial colours. The dyed samples were tested for their properties with respect to its suitability for textile industry. • Dissemination of research in reputed journals
21.	Development of prototype vessel for supercritical carbon dioxide (SC-CO ₂) dyeing of textile fibers and to establish dyeing process	2013	24 Months	Process Development	<ul style="list-style-type: none"> • A prototype vessel of 20 litres capacity for SC-CO₂ dyeing for textile substrate was developed. The developed SC-CO₂ textile dyeing set-up is waterless technology. The dyeing trials results were at par to conventional dyeing process. • A patent has been filed on same. Received SILVER AWARD at the 46th SKOCH AWARDS 2016.

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20.	Design and development of a non-destructive test method for assessing the evenness and mixing quality of non-woven blends	2013	24 Months	Product Development	<ul style="list-style-type: none"> Based on the study the design of instrument for evaluating evenness of fibre mixing in nonwoven batts based on fibre dielectric coefficients was done and instrument developed. Evaluation of evenness of fibre in a non woven blend in the system was studied
21.	Development of Visible –Near Infra-red Camouflage Textile	2015	24 Months	Process Development	<ul style="list-style-type: none"> Carbon black polymer was added to the textile polymer (PET and Nylon). These were then dyed with disperse dyes and assessed through reflection of the samples in the visible-NIR range. It was found that material modification facilitated suppression of textile polymer reflection and brought it to the desirable NIR range. A Patent has been filed on the developed product and the product is being commercialized. Dissemination of research in reputed journals
22.	Moisture managing Fruit & vegetable Bag	2015	24 months	Product Development	<ul style="list-style-type: none"> Three varieties of PP/SAF based technical fabrics have been developed for packaging of fresh fruits and vegetables. Field trials have been conducted to assess the performance of the developed products for storage of fruits. Performance of the developed products has been evaluated in terms of their efficacy in controlling the humidity, temperature and oxygen availability. Patent has been filed on same and disseminated research outcome in various forums
23.	Development and applications of Green Surfactant in Textile Processing	2015	24 months	Process Development	<ul style="list-style-type: none"> The project envisaged development of green surfactant by biotechnology route for textile application. Three isolates producing maximum green surfactant were selected for production and extraction of green surfactant. Extracted Green surfactant was tried as scouring agent, wetting agent, detergent etc.,. It was found suitable for textile application as this surfactant does not require any auxiliaries used for scouring. Patent has been filed on same disseminated research outcome in various forums

