



ANNUAL REPORT 2023-24

NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION

(Linked to Ministry of Textiles, Government of India)
Sector-23, Raj Nagar, Ghaziabad-201017 (INDIA)



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MESSAGE FROM THE CHAIRMAN COUNCIL OF ADMINISTRATION



Dear Patron,

It is a proud privilege for me to be associated for a long time with NITRA, the leading textile research association in the country. NITRA, as you all know, has been providing R&D and other technical support to Indian textile and clothing industry since its inception in 1974 and caters to a large no. of industrial units. The best part of NITRA is that without getting complacent for what they have achieved, their pursuit for excellence is continuous hence the organization is growing at a steady pace year after year. NITRA's esteemed patrons, valued clientele and efficient workforce deserve immense credibility for this.

I am very happy to say that in one of the most significant happenings during this reported period, NITRA once again became glorified being awarded the prestigious CII Industrial Innovation Awards 2023 for the second consecutive time. NITRA is ranked amongst the Top 5 Innovative Research Institutes amongst all research institutes in India by India's prime industry body Confederation of Indian Industry (CII). NITRA management duly acknowledges the contribution of its esteemed patrons and all other associated with NITRA for this outstanding achievement.

NITRA had many significant happenings during this fiscal. Following the visit of Director General, NITRA and other senior scientists to ITMA Fair at Milan, Italy, NITRA released a booklet on latest developments in textile machines "Review of ITMA 2023." Besides, NITRA scientists presented research papers and got applauded in many scientific forums this year. Notable amongst them are the 7th International Conference on Technical Textiles and Nonwoven at IIT, Delhi, 77th All India Textile Conference, Delhi and many more. NITRA also participated at National Workshop with Centre of Excellence for Technical Textiles organized by Government of Tamil Nadu at Coimbatore and had a glorious presence at Bharat Tex 2024 at Bharat Mandapam, New Delhi.

We are also happy to announce that the patent for 'Method of Manufacturing Thermal Barrier or Liner Using Roving Material' is awarded to NITRA during this reported period. This is the result and acknowledgement of tireless efforts by NITRA's research scientists put on the project. Furthermore, NITRA has also filed seven more patents during this period for new development vis-à-vis signing 6 MoU with reputed organizations in the field of science and technology.

Friends, I feel happy to inform that during the reported period NITRA scientists have carried out 9 R&D projects out of which 2 is completed and 7 in the pipeline. As many as 40 research papers are published and presented by NITRA scientists during the reported period. The other activities of NITRA i.e. technical consultancy, material quality

evaluation, third party inspection and manpower training have also been quite satisfactory during the last one year.

NITRA's academic wing NITRA Technical Campus (NTC) has also done well during the reported period. A new AIML laboratory has been inaugurated at the campus. NTC successfully conducted B. Tech programs on Textile Technology, Computer Science & Engineering and CSE (AIML) branches. The 8th batch of students has also passed out with excellent results and is placed in renowned textiles and IT companies pan India. We are also happy that for the seventh consecutive years our students featured in university top ten for textile category and won honor medals.

Before concluding, I thank the Ministry of Textiles, Government of India for sponsoring R&D projects. We are also thankful to Textile & Apparel industry, U.P. State Government and various para-military forces for utilizing NITRA's facilities. I assure that, NITRA would continue to serve all its stakeholders even better in the coming days.

RAJ KUMAR JAIN

FROM THE DIRECTOR GENERAL'S DESK



During the financial year 2023-24, NITRA has done commendable work to support the Indian textiles & garment industry. Following are the highlights:

Activities at a glance (2023-24)

R&D		Clientele	
Projects completed	02	Clients served	1236
Projects ongoing	07	New clients inducted	528
Research papers	40		
Consultancy services		PLSCs	
Inspection Services	93	Technical assistance/consultancies	121
Technical consultancies	30	Design developed	27
Technical opinions & defect analysis	13	Liaison visits/Survey carried out (No. of units covered)	1835
Testing services		Sample tested	2928
Quality evaluation in NITRA labs	6272	Persons trained	275
		Clients served	580
		New clients added	290
Training services			
Manpower training programs	25		
Personnel trained by NITRA	975		

1. Research & Development Cell

Govt. Sponsored completed Project:

- Development of Jute composite for automotive acoustic insulation and other uses

Government Sponsored On-going Projects:

- Socio economic development of SC/ST by providing training, technology and market to convert local resources to industrial products
- Development of Ceramic and UHMWPE Textile Based Hybrid Polymer Composite Armour (Jointly with MNIT, Jaipur)
- Development of flame retardant Nylon 66 yarn/ fibre indigenously
- Development of Crop Cover, mulch, soil protection fabrics and other products using Sunnhemp and Banana Fibre

- Development of 3D High Performance Knitted Sports Textiles with Thermo-physiological Comfort and Impact Protective Properties

Publication: 16 (Including with other divisions)

Technical Consultancy: 4 (Including with other divisions)

Training Program: 3 (Including with other divisions)

2. Chemical & Quality Evaluation Division

Government Sponsored Completed Project:

- Development of molten metal splash resistant unique jute blend work wear for steel industry workers

Government Sponsored On-going Projects:

- Cellulose based indigenous high Clo value and low density surface modified natural fibre for developing thermal layers of extreme cold weather clothing
- Development of Specialized Firefighting Suit

Recently Sanctioned Government Project:

- Development of Indigenous state of the art Instruments for protective textiles

Publication: 22 (Including with other divisions)

Training Program: 2 (Including with other divisions)

3. Engineering Division

Technical Consultancy: 17 (including with other divisions)

4. Environmental Engineering Division

Publication 2 (including with other divisions)

Training Program: 1 (with other divisions)

5. Garment Centre

Publication 3 (including with other divisions)

Training Programs: 12 (including with other divisions)

6. Marketing & Publication Division

Publication: 1 (with other division)

Inspection: 8 (including with other divisions)

Training Program: 1 (with other division)

7. Mechanical Processing (Spg. & Wvg.) Division

Publication: 5 (including with other divisions)

Technical Consultancy: 9 (including with other divisions)

Inspection: 81 (Including with other divisions)

Training Program: 1 (with other division)

8. Physics & Quality Evaluation Division

Publication:	3 (including with other divisions)
Inspection:	28 (including with other divisions)
Training Program:	1 (with other division)

9. Software Development Centre

Publication:	10
Training Program:	10

10. Polymer & Technical Textile Division

Publication:	3 (including with other divisions)
Inspection:	22 (including with other divisions)
Training Program	2 (including with other divisions)

Quality Evaluation at NITRA Laboratories

Altogether 6272 samples were tested at NITRA's NABL accredited laboratories during 2023-24. Following is the laboratory-wise break up for the same:

Physical Quality Evaluation Laboratory	-	2724 samples
Chemical Quality Evaluation Laboratory Heat & Flame Testing Laboratory	} -	2605 samples
Polymer & Technical Textiles Laboratory	-	708 samples
Environment Laboratory & Eco Laboratory	-	235 samples

In addition to above, 13 fabric defect/damage analysis was carried out in various NITRA laboratories. More than 300 R&D samples were also tested in PQE and CQE labs.

Publications

In the year under review, 40 research & technical papers are published/ presented in technical journals and forums.

Memorandum of Understanding (MoU) signed

- ❖ On February 28, 2024 with M/s. Ginni Spectra Pvt. Ltd., Jaipur for development of various types of high Clo value for thermal layers using different non-woven fabric making techniques.
- ❖ On December 21, 2023 with M/s. JCT Limited, Phagwara on the transfer of technology of NITRA's developed Molten Metal splash resistance fabric.

- ❖ On December 21, 2023 with M/s. RFM Automotives Pvt. Ltd., Gurgaon on the transfer of technology of NITRA's developed Roof liner and Parcel Tray.
- ❖ On November 24, 2023 MoU & Non-disclosure Agreement was signed with Chlorohemp with the objectives to work jointly on mutually agreed textile projects on sustainable fibres for their extraction / regeneration, processing and product development activities as project associate / industry partner.
- ❖ On November 4, 2023 MoU & Non-disclosure Agreement signed with Polygiene Group at Styrmansgatan, Sweden with an aim to develop next generation eco-friendly antimicrobial technology. It was mutually decided to start working on this project entitled "Citron".
- ❖ On July 31, 2023. NITRA and Indus Group have agreed to partner based on their mutual strengths and propose the Consortium as Knowledge Partner and Project Management Consultants for the purpose of addressing the requirements of the industry

Power loom Service Centres

In order to strengthen the decentralized power loom sector, NITRA rendered various value-added services through eight Power Loom Service Centres located at Tanda, Kanpur, Meerut, Gorakhpur, Varanasi (all in U.P.), Panipat (Haryana), Ludhiana (Punjab) and Bhilwara (Rajasthan). (For details refer chapter Power loom Service Centres).

Patent granted

- ❖ Method of Manufacturing Thermal Barrier or Liner Using Roving Material (Indian Patent No. 502720 of 24.01.2024)

Patents applied

- ❖ Automotive component and process for manufacturing thereof from waste jute blends for automotive application, patent application No. 202311082687 dated 5.12.2023
- ❖ Method of manufacturing jute-based fabric for protection against Molten Metal Splash, patent application No. 202311082688 dated 5.12.2023
- ❖ IOT based smart milk pan, patent application no. 202311067403 dated 7.10.2023
- ❖ Blockchain based authentication system for IOT networks, patent application No. 202341066014 dated 2.10.2023
- ❖ Cloud-based predictive maintenance system for electric vehicle batteries using deep learning, patent application no. 202341059803 dated 6.9.2023
- ❖ Prediction of academic monitoring system in higher educational institute incorporating ai, patent application no. 202311057775 dated 28.8.2023
- ❖ A collaborative filtering based system for opinion extraction and sentiment analysis, patent application no. 202311045904 dated 7.7.2023

Recent Product Development

1. Re-generated Cellulosic Fibre from Indian bamboo developed indigenously
2. Molten metal splash resistant workwear for Steel Industry workers
3. Jute/ Polypropylene composite headliner & parcel tray for automobiles

Recent Specification Framing by NITRA

1. Alpine Tent for ITBP
2. Wader Suit for ITBP

Important Events and Happenings during 2023-24*

- NITRA's Glorious Presence at Bharat Tex 2024 at Bharat Mandapam, New Delhi
- Dr. Arindam Basu, DG NITRA Moderates Interactive Session on "Achieving Excellence: Green Practices & Innovative Material Management" at Bharat Tex 2024 on February 26, 2024
- NITRA at National Workshop with Centre of Excellence for Technical Textiles organized by Government of Tamil Nadu at Coimbatore
- Research Advisory Committee (RAC) Meeting at NITRA, Ghaziabad
- NITRA's Scientists Participate in Jute Symposium with Special Focus on Jute Geo Textiles under National Jute Development Program (NJDP), Ministry of Textiles, Govt. of India on December 21, 2023 at Hotel Ashoka, New Delhi.
- CII Recognizes NITRA as one of Top 5 Innovative Institutes in India
- ATIRA, BTRA, NITRA and SITRA Organize 61st Joint Technological Conference
- NITRA's 47th Annual General Meeting
- 18th Convocation Ceremony at NITRA
- NITRA Scientist Dr. Prakash Arun Khude conferred with Ph.D Degree from IIT Delhi
- Dr. Arindam Basu, DG NITRA chairs a session on "Standards of Protective Textiles and Workwear" on 25th July, 2023 in 6th National Conclave on Standards & Regulations for Technical Textiles, organized by MoT, BIS and FICCI at FICCI House, New Delhi
- NITRA releases a booklet LATEST DEVELOPMENTS IN TEXTILE MACHINES "Review of ITMA 2023" in July, 2023
- NITRA Observes International Yoga Day
- Senior Scientists from NITRA Visit ITMA Fair at Milan, Italy
- NTC Pass-out Students Galore with Great Enthusiasm at Alumni Meet 2024
- NTC Organizes Fresher's Party 2023
- NTC Organizes 9th Techno-Science Quiz 2023
- NEW AI&ML Laboratory Inaugurated at NITRA Technical Campus
- ADIEU - The Farewell Party 2023
- NITRA Technical Campus Celebrates World Environment Day

**For details please refer chapter Important Events and Happenings during 2023-24.*

Dr. ARINDAM BASU

NITRA's SERVICES TO ITS CLIENTS - AT A GLANCE

NITRA always believes in satisfying its clients. That is why it has been able to retain most of its existing clients and at the same time include new clients. Many clients have availed NITRA's services time and again. Data given below provides the information related to services rendered by NITRA to its clients during 2023-24.

Total clients served	: 1236
New Clients added	: 528

Approx. 13% of the clients at NITRA have availed services 5 times or more during the year.

- **Units availed services more than 50 times more**

Unit	No. of Services
Aeronav Industrial Safety App., Noida	83
Arihant Spinning Mills	57

- **Units availed services more than 30 and less than or up to 50 times**

Unit	No. of Services
Shiv Shakti Spinners, Panipat	50
Tuv Sud South Asia Pvt. Ltd., Gurgaon	44
Continental Surface Solutions India Pvt. Ltd., Khendal	44
A.K. Overseas	41
Rites Ltd., Faridabad	35
Vardhman Fabrics, MP	33
Pilkhuwa Water Proofing Co. Pvt. Ltd.	32

- **Total number of services availed by clients at NITRA**

Testing	2980
Consultancy/Training etc.	317
Total Services availed	3297

ORGANISATION: FINANCIAL PERFORMANCE & MEMBERSHIP

Government Grant

Ministry of Textiles (MoT), Govt. of India, deserves special thanks for helping NITRA by releasing timely grant for recurring expenditure. MoT released a grant of Rs.200.00 lacs towards recurring expenditure.

NITRA received Rs.1,080.83 lacs grants for six running NTTM projects; Rs.39.82 lacs grant from Ministry of Agriculture, National Bamboo Mission; Rs.32.91 lacs grant from National Jute Board for two running projects; and Rs.21.33 lacs for one running project from Department of Science & Technology. NITRA also received grant of Rs.122.00 lacs for 2022-23 from Ministry of Textiles for the eight Power loom Service Centres.

Council of Administration

The management of the Association is entrusted to the Governing Council. At the 47th Annual General Meeting of the Association held on 23rd September 2023, the new Council of Administration was constituted as given in Annex-1. The Council met three times during the year.

Finance & Administrative Sub-committee

The Finance & Administrative Sub-Committee continued to look into the administrative and financial matters. All matters relating to administrative procedures, staff, matters relating to the members of association and financial matter were brought before this committee for discussion, guidance and approval. This committee met twice during this period. A list of the members of Finance & Administrative Sub-Committee is given in Annex-2.

Research Advisory Committee

Research Advisory Committee meeting was held on 20th January 2024. This is an annual event at NITRA with a view to assess the progress of NITRA's ongoing R&D projects and to make necessary modification on those, if required. The committee also suggests areas to be considered for NITRA's future R&D activities. A list of the members of Research Advisory Committee is given in Annex-3.

NITRA Membership

As on 31st March 2024, 137 textile and garment units have registered as NITRA members. The list of members is given in Annex-4.

RESEARCH & DEVELOPMENT ACTIVITIES

As a policy matter, the aim for NITRA's research and development activities is to help the industry. So, at NITRA, ideas for most of the R & D projects are conceived only after interaction with the industry. Need based projects are earmarked for carrying out research and special emphasis is given to those projects which have industry acceptance as well as commercial viability.

In the year 2023-24, NITRA worked on ten projects. Out of which two have been successfully completed during the period whilst work is in progress for the eight projects. One project was recently sanctioned.

Work done in the area of R&D during the year 2023-24 is categorized as below:

1. GOVERNMENT SPONSORED PROJECTS

1.1 Completed Projects

(i) Project title : Development of a molten metal splash resistance unique Jute blended work wear for steel foundry workers (Sponsored by National Jute Board, Govt. of India)

Duration : Dec 2021 to Nov 2023

Objectives :

- To develop or procure Jute and its blended fabrics having various weaves and weight
- To finish these fabrics with durable FR chemicals and their analysis
- To determine chemical, mechanical and safety performance properties
- To compare existing work-wear fabric with newly developed fabric for safety performance and other properties
- Techno-commercial feasibility through field trials in the user industry

Research Outcome :

- Literature and technical publications related to jute applications, properties, and current status were reviewed.
- Procurement of yarn & chemicals, various softeners and Flame-Retardant chemicals were done.
- After the procurement of yarn, different fabric samples were developed using plain, leno and twill weaves.
- All developed samples were treated with FR chemicals.
- These developed fabric samples were evaluated for various chemical & physical properties and the molten splash test.
- The selected fabric was also tested for radiant heat, contact heat, convective heat, and FR properties.
- Fabrics were also tested for comfort-related properties like air permeability and water vapour permeability.
- Developed fabrics pass a molten metal splash of iron as per ISO 9185 (ISO 11612).

- After testing, finalisation of the workwear design was done.
 - Workwear samples were developed in collaboration with our project industry partner "M/s JCT Ltd."
 - Trials have been done at Prime Steel Processors Private Ltd., and M/s Aarti Steel International Ltd, Ludhiana, to get feedback from the workers on the various aspects of safety, usability, and comfort of the developed workwear. Results were found satisfactory.
 - Draft Specification on Jute-based cloth for workers working in foundry and other fire accident-prone workplaces framed and submitted to BIS.
 - Patent has been filed for "Method of manufacturing jute based fabric for protection against molten metal splash".
 - Developed technology has been commercialized.
 - Project has been completed.
- (ii) Project title** : Development of Jute composite for automotive acoustic insulation and other uses (Sponsored by National Jute Board, Govt. of India)
- Duration** : Dec 2021 to March 2024 (including 3 months extension)
- Objectives** :
- To design and develop composite material for automotive acoustic insulation
 - To conduct trials in real life situation
 - To standardize fibre component and process parameters for this specific use
 - To attempt for use of jute non-wovens and composites in other automotive parts
- Research Outcome** :
- Developed Roof liner for M/s Sonalika Tractor using Jute & Polypropylene (53%/ 47%)
 - Developed Roof liner for M/s Volvo India
 - Testing was done and the developed products are meeting the requirements of commercial test specifications of the respective manufacturers.
 - Development of Parcel tray for Maruti Passenger Vehicles has been completed.
 - Technology has been transferred & patent application has been filed for the newly developed process.
 - Project has been completed.

1.2 ONGOING PROJECTS

- (i) Project title** : Socio-economic development of SC/ST by providing training, technology and market to convert local resources to industrial products (Sponsored by DST, Govt. of India)
- Duration** : Started in May 2023 (24 months)

- Objectives** :
- Infrastructure development and technology transfer for dye extraction, fiber extraction, gum extraction, hand spinning and natural dying process.
 - To train the local SC/ST population for product development using available infrastructure.
 - To carry out Research and development using local resources of that area to convert them in to useful product.
 - Evaluation of developed products and modifications.
 - To train and connect the local artisans with the buyers of their product using modern tools.

- Progress of work** :
- A comprehensive Sample survey was completed in Dwarahat and Hawalbagh Blocks and identified the natural resources (Fig. 1) available in the region.
 - Suitable Training centre (Fig. 2 and Fig. 3) were identified and hired on rent in both Hawalbagh and Dwarahat blocks as training centres named "NITRA UTTRAKAHND PRASHISHAN KENDRA".
 - Procurement and fabrication of Fibre extractor /Decorticator Padding mangle, Carding lab model, Draw frame, Ring frame, Hank dyeing machine, Handloom, Jigger dyeing machines have been completed.
 - Techniques for the extraction of fibres from Sisal, Bhimal, and Nettle, Pine needle plants were developed and optimized.
 - Trainees were provided with basic knowledge about the extraction process of natural fibres, process of yarn and fabric making (Fig. 4) using natural fibres available locally, such as Sisal, Bhimal, and Nettle etc.
 - Basic knowledge was provided to the trainees about the yarn and fabric making process by the natural fibres available in the local like Sisal; Bhimal, Nettle, Pine and wild hemp etc and how the local people can utilize them to generate self-employment.
 - A 15-days training program (Fig. 5) was conducted for three groups of trainee on fibre extraction, yarn development and Dye extraction & application. Furthermore Physical and chemical analysis of extracted fibres was done.
 - A health camp was organised at Dwarahat and Self help group "Dunagiri Samajik Sahayata Samiti" has been formed at Dwarahat Uttarakhand (Fig. 6).



Nettle



Bhimal



Pine Needle



Sisal



Industrial Hemp



Ramie



Mustard



Savanna

Fig.1: Natural Resources for dyes and fibres



Fig.2: Training centre in Dwarahat



Fig.3: Training centre in Hawalbagh



Fig. 4: Training program



Fig. 5: Training program on Natural dyeing



Fig.6: Health Camp conducted at Almora Uttarakhand

- (ii) Project title** : Development of Ceramic and UHMWPE Textile based Hybrid Polymer Composite Armor (Jointly with MNIT, Jaipur) (Sponsoring Agency: NTTM, Ministry of Textiles, Govt. of India)
- Duration** : Started in Jan 2024 (36 months)
- Objectives** :
- Development of technology for the production of Ceramic – FRP Composite Armor for protection against small caliber ammunitions (12.7/ 14.5* mm AP) [400 mm x 400 mm x (50-70mm)]
 - Development of novel computational model for the impact events on FRP-Ceramic Hybrid composite considering scale up parameters such as (a) upgradation for 14.5 mm AP (b) multi-hit capabilities (c) design of novel weaving structure and subsequent validation for maximum ballistic efficiency of the composite.
 - Development of optimum microstructure and composition for maximum ballistic efficiency of SiC ceramics.
 - Development of high impact resistant woven textile (UHMWPE and hybrid with glass & carbon fibers), ceramics and layer hybrid composite thereof.

- Progress of work** :
- MNIT has started simulation for this project. NITRA has supplied various data regarding fabric properties & fibre properties.
 - Based on the simulation results NITRA will produce 2D & 3D fabrics and supply the same to MNIT for preparation of composites & further trials.
- (iii) Project title** : Development of Specialized Firefighting Suit (Sponsoring Agency: NTTM, Ministry of Textiles, Govt. of India)
- Duration** : Started in Feb. 15, 2023 (24 months)
- Objectives** :
- To study existing Specialized Fire Fighting Suit for fire entry available in a developed country with respect to their suitability to protect users from fire hazards and other physiochemical properties.
 - Development of multilayered fabrics using various structures, fibre composition, and finishing/coating/ lamination applications in the manufacturing of fire entry suits.
 - To evaluate multilayered fabrics for their performance, safety (fire hazard) and other physiochemical properties as per standard.
 - Development of a prototype Specialized Fire Fighting Suit.
- Progress of work** :
- Literature and technical publications related to specialized firefighter suits/ fire entry suits and current status were reviewed.
 - Fabric samples were developed and some are procured from M/s. Arvind Ltd to develop various layers of specialized firefighter suits.
 - Samples of aluminized outer layer are developed and tested for various properties. Presently 5 samples are developed and analysed. Some of them are shown in Fig. 7 below:

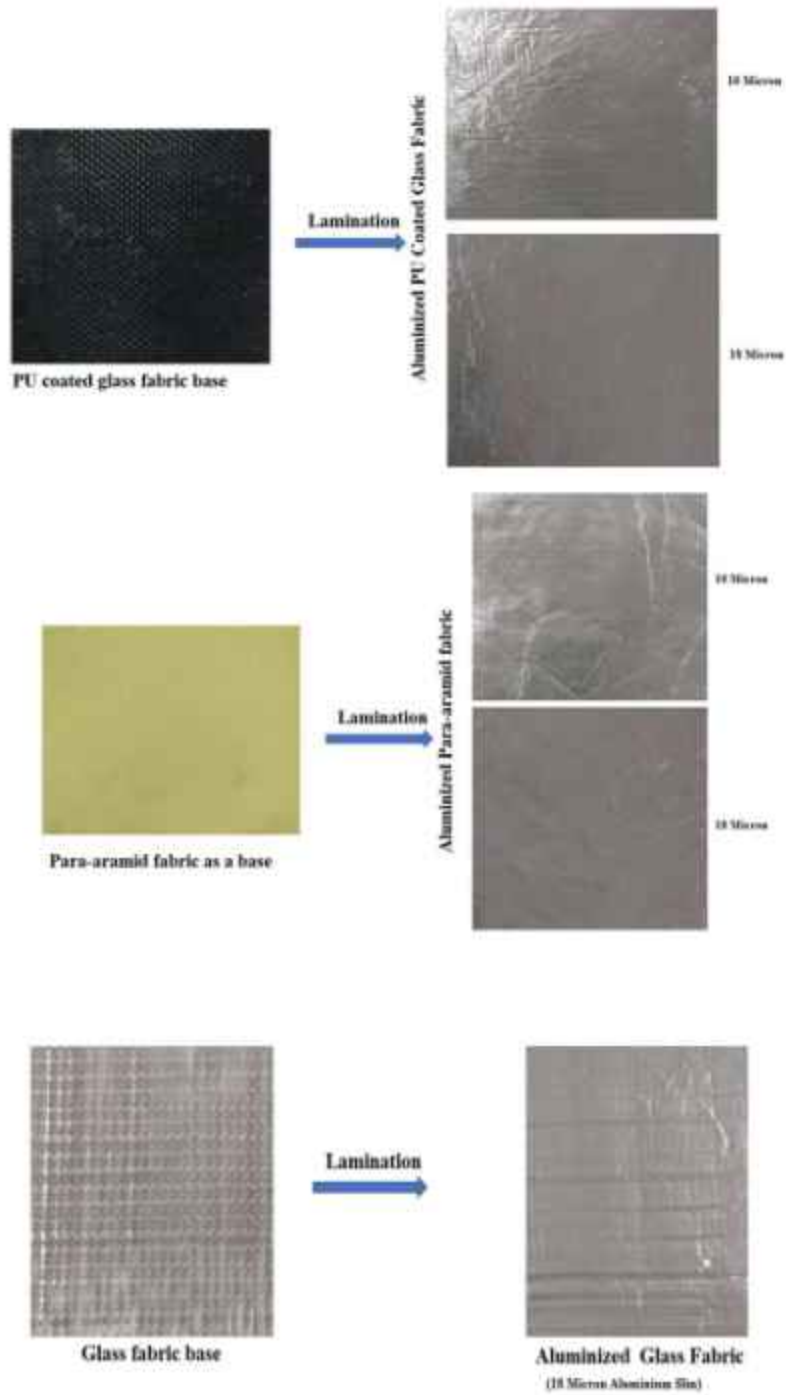


Fig: 7: Pictures of aluminized outer layers

- A purchase order is sent to purchase a Fire Manikin.
- Work on the development of other layers of specialized firefighter suits is in progress.

- (iv) Project title** : Development of flame retardant Nylon 66 yarn/fibre indigenously (Sponsoring Agency: NTTM, Ministry of Textiles, Govt. of India)
- Duration** : Started in Feb. 15, 2023 (36 months)
- Objectives** :
- Procurement of Adipic acid, Hexamethylene Diamine, Nylon 6,6 pellets along with suitable Flame Retardant chemicals.
 - Development of filament yarn/fibre using Nylon 6,6 in pilot plant and evaluation of properties.
 - Optimization of process parameters of fibre/yarn manufacturing as per the end-user requirement and evaluation of various properties and comparison with the existing similar fibre/yarn.
 - Development of fabric samples using newly developed fibres and evaluation of their properties like tensile & tear strength, abrasion resistance, flame retardancy etc.
- Progress of work** :
- Adipic acid, and a flame-retardant chemical has been procured.
 - A setup for melt spinning unit containing melt spinning machine, drawing machine, and vacuum oven has been purchased and installed.
 - As a first step, filament yarn is produced using nylon 6 chips from the market. Initial trial has been started.
 - The prepared filament yarn is drawn in drawing frame at different drawing ratio.
 - Drawn yarns samples are tested for yarn count, filament count, and filament tenacity.

Chemicals procurements:

The chemicals which are adipic acid, and flame-retardant masterbatch were procured. The polyamide 6 (PA6) polymer pellets and polypropylene were purchased from the market for the trials in melt spinning.

Melt spinning lab setup:

The melt spinning lab is consist of melt spinning unit, drawing unit, and vacuum oven. All the required machineries are procured and installed for the operations. Hands-on training in the machinery was taken by the scientist and project assistants. Vacuum hot oven been used for conditioning the polymer pellets before spinning. Fig. 8 shows the photographic images of the melt spinning unit (fig. 8a), extrusion of melt spinning (fig. 8b), drawing frame with heating rollers (fig. 1c), and vacuum oven (fig. 8d).

Filament production:

PA6 filament yarn was successfully developed with installed melt spinning facilities. After the filament formation, the yarn sample was drawn in draw frame and its process parameters are given in Table-1.

Testing of the samples:

The filament yarn and fibre parameters are tested for count, elongation, and tenacity. Table-2 shows the results of the PA6 yarn before and after drawing process. The drawn yarn tenacity is above 3 g/den and elongation of 170% was achieved. For obtaining the high tensile yarns, the further trials will be taken to achieve the desire strength.

Table-1: Polyamide 6 (PA6) yarn description

Sample name	Process parameters
PA6 – 1	Raw yarn after melt spinning
PA6 – 2	Drawn ratio of yarn is 3 at 110°C
PA6 – 3	Drawn ratio of yarn in 3 at 115°C

Table-2: Test parameters of the PA6 yarn samples

Sample name	Yarn Denier		Filament denier		Elongation (%)		Tenacity (g/den)	
	Avg.	CI at 95%	Avg.	CI at 95%	Avg.	CI at 95%	Avg.	CI at 95%
PA6 -1	7038	1724	-	-	-	-	-	-
PA6 -2	2502	1310	55.14	4.93	121.61	10.81	3.61	0.29
PA6 -3	3306	314	72.728	7.43	172.03	18.34	3.07	0.13

*Avg. Average, CI – Confidence interval





(c)



(d)

Fig. 8: Melt spinning lab machines (a) melt spinning machine with spinneret, (b) extrusion unit of melt spinning, (c) draw frame, and (d) vacuum oven

(v) Project title : Development of Crop Cover, mulch, soil protection fabrics and other products using Sunnhemp and Banana Fibre (Sponsoring Agency: NTTM, Ministry of Textiles, Govt. of India)

Duration : Started in Feb. 15, 2023 (18 months)

Objectives :

- To develop standard extraction processes for Sunnhemp & Banana fibres and optimize.
- To develop yarn from extracted fibre in 100% and blends using developed hand/semi mechanized spinning and commercial spinning machine.
- To evaluate the physical & chemical properties of extracted fibres and develop yarn using standard test method.
- To develop value added products (Geo and agro textiles product), take field trials and their commercialization.

Progress of work :

- Optimization of extraction process of banana and sunnhemp fibres has completed (Fig. 10).
- Development of yarn in different blends for banana and sunnhemp fibres on commercial spinning system has been completed.
- Evaluation of physical & chemical properties of extracted Sunnhemp & Banana fibres and the yarns developed from these fibres have been completed (Fig. 13 & Table-3).
- Nine nonwoven and woven samples from banana and sunnhemp fibres sample (100% and blend) were developed for mulch mat and crop cover.
- Evaluation of various properties of developed samples as per standard test method has been completed.
- Cultivation of sunnhemp crop has done in 1 acres of land inside NITRA campus and studied the effect of duration on fineness, yield and strength of extracted fibres.

- Nonwoven needle punch machine, Banana cutter, fibre extractor and fibre opener machines have been received and commissioned (Fig. 11).
- Effect of accelerated weathering on sunnhemp and banana mulch mats has studied.
- Needles punch nonwoven Mulch mats, crop cover and soil erosion fabrics have developed at NITRA & evaluated as per the standard test method.
- Field trail of developed samples of mulch have completed at KVK on Peas and Bittergoured crop at Jind Haryana and Effect of mulch on properties of soil is under process (Fig. 14 to 16).
- Project work and Project model (Fig. 9) was displayed at the NTTM stall, Bharat Tex 2024 (February 26-29, 2024)



Fig.9: Model on application of sunnhemp and banana fibres



Fig. 10: Extraction of sunnhemp fibres using water retting



Fig. 11: Needle punch nonwoven plant

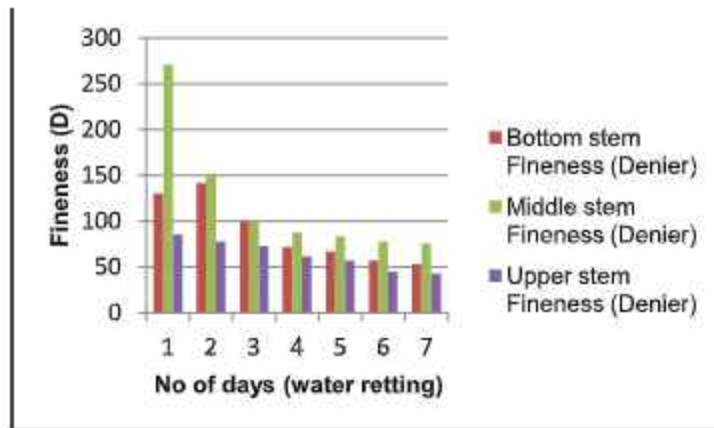


Fig. 12: Effect of Water retting on fineness of sunnhemp fibres

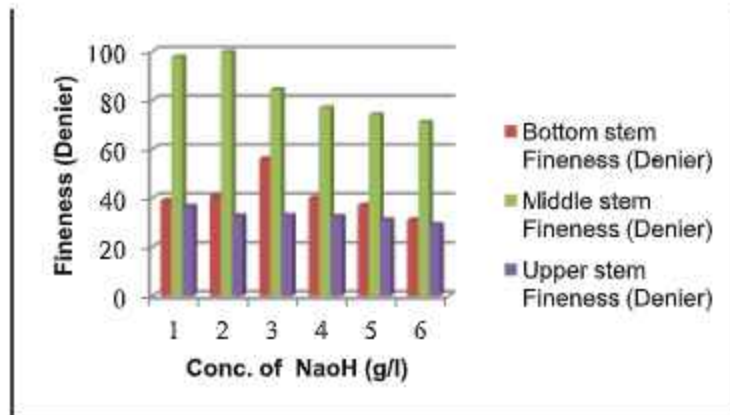


Fig. 13: Effect of chemical extraction on fineness of sunnhemp fibres

Table-3: Fibre Properties		
Properties	Sunnhemp Fibre	Banana fibre
Cellulose content (%)	69-71	60-65
Lignin content (%)	4-5	6-8
Density (g/cc)	1.22	1.28
Bundle Strength(g/tex)	35-45	20-28
Fineness(Denier)	30-40	25-35
Moisture Regain (%)	13.62	12.24
Water holding capacity (%) IS 14944	87	86
Biodegradability Test (Soil Burrial) (IS 1623)	80 Days	75 Days



Fig. 14: Application of mulching at KVK Jind Haryana



Fig. 15: Application of banana and sunnhemp mulch mat and presence of good microbial activity



Fig.16: Collection of soil sample for testing and evaluation of weed in with or without mulching



Fig. 17: NITRA team & KVK Jind team conducted the awareness program on biodegradable mulch mat and crop cover

- (vi) Project title** : Development of 3D High Performance Knitted Sports Textiles with Thermo-Physiological Comfort and Impact Protective Properties. (Sponsoring Agency: NTTM, Ministry of Textiles, Govt. of India)
- Duration** : Started in Feb. 15, 2023 (18 months)
- Objectives** :
- Standardization for development of 3D weft knitted spacer fabric for its suitability for manufacturing of sportswear garments and components by varying the material types, material fineness, spacer yarn density, spacer fabric thickness.
 - Standardization of process for development of micro-gel in order to improve the impact resistance in the sportswear fabrics.
 - Standardization of treatment for application of micro gel on the developed 3D weft knitted spacer fabric.
 - Evaluation of properties such as compression, elasticity, breathability and impact resistance.
 - Optimization of structure and parameters of knitted fabrics based on primary and secondary data and development of sportswear garments and components at pilot level.
- Progress of work** :
- A setup for flat-bed knitting machine has been purchased and installed (Fig. 18).
 - Chemicals for preparing the shear thickening fluid have been purchased.
 - Some spacer knitted fabrics and EVA foam had been outsourced and compared by their physical and chemical properties.
 - Spacer knitted fabric have been made in flat bed knitting machine
 - A silica nano-particles and polyethylene glycol based Shear thickening fluid had been prepared and coated on spacer knitted fabric (Fig. 19).
 - Comfort properties, Impact energy absorption and puncture resistance performance of STF impregnated sample was evaluated (Table-4).



Fig. 18: Flat bed Knitting machine

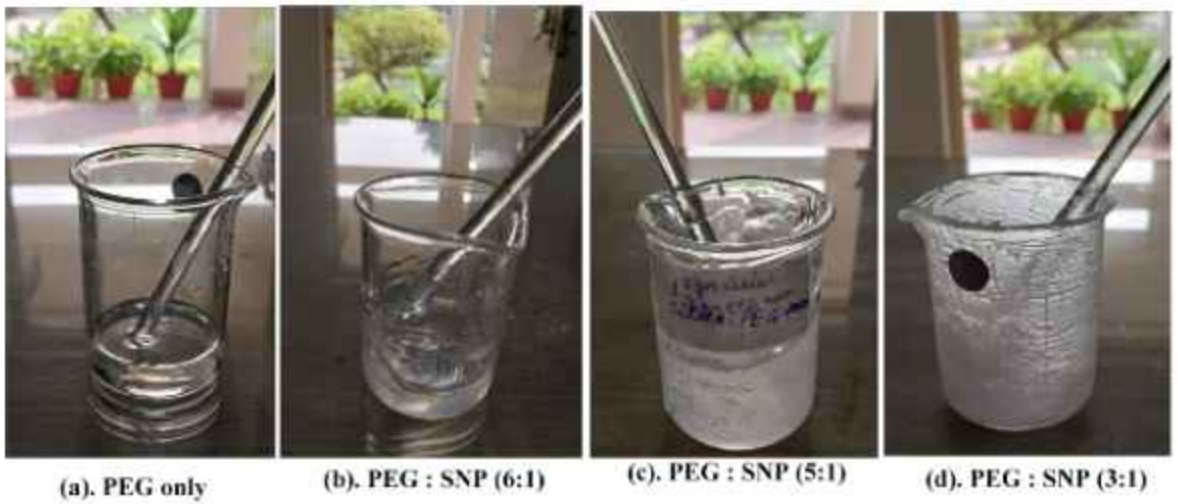


Fig. 19: Preparation of Shear Thickening Fluid

Table-4: Results of Impact test after addition of shear thickening fluid

Sample ID	Areal density	Thickness	Fabric bulk density	Add-on	Puncture resistance	Impact energy absorption
	(gm/m ²)	(mm)	(gm/cm ³)	(%)	(N)	
CD3003	260.3	1.72	0.152	NA	252	Not torn till 24.5 J
Film	19.5	0.02	0.975	NA	-	-
CD 3003 + Film both sides	299.3	1.83	0.164	NA	253.4	Not torn till 24.5 J
STF+CD3003+Film both sides	1012.8	1.80	0.563	388.7	283	Not torn till 39.2 J

*CD3003 sample is a Plain air mesh (92% polyester and 8% Elastane)

(vii) Project title : Cellulose-based indigenous high Clo value and low-density surface modified natural fibre for developing thermal layers of extreme cold climate clothing. (Sponsoring Agency: NTTM, Ministry of Textiles, Govt. of India)

Duration : Started in Feb. 15, 2023 (36 months)

Objectives :

- Extraction of fibres from identified weed plants available in different regions and evaluation of various properties.
- Surface modification of extracted fibres using nano finish and their analysis including thermal insulation.
- Manufacturing nonwoven fabrics of different thicknesses and structures using 100% extracted fibres as well as its blend with other fibres.
- Optimization of structure and thickness of nonwoven fabrics based on thermal insulation value as per the present defence specification.
- Developing extreme cold climate clothing as per the requirement of Indian Defence forces.

Progress of work :

- 1.2 kg weed fibre was extracted and various fibre properties were analysed as shown in Table-5.
- Extracted weed fibres were blended with other selected fibres in different proportions and laps were prepared on lab model carding machine. Prepared laps were analyzed for Rct value (Clo value). Effect of blending weed fibre with polyester on clo-value, thickness and GSM was determined (Fig. 20).
- Effect of different lab grade solvents on hollowness of weed fibers was evaluated.
- Complete patent on "A process for preparing water repellent weed floss/fibre for preserving thermo-regulatory property thereof" (Application No: 202111055410 dated 30.11.2021) has been filed.

- Cultivation of weed crop started on 2 acres of land inside NITRA campus.
- Hollowness analyzer and Lab model nonwoven making machine procured, installed and project staff trained to use the machines (Fig. 21).
- Nonwoven samples of weed fibre in different blended proportions and of different thickness were prepared on the lab model nonwoven machine Fig. 22 (a), (b).
- Compression recovery study was conducted for the developed carded samples (Fig. 23).

Table-5: Properties of the weed fibre

Chemical Properties	
Cellulose	53 to 55%
Hemi cellulose	22 to 24%
Lignin	16 to 18%
Oil and Wax	2.5 to 3.0%
Moisture regain	11-12%
Physical Properties	
Hollowness	16-20%
Fibre Fineness	2.5 to 3.0 micronaire
Fibre length	28 to 30 mm
Breaking strength	3.6 to 3.8 gm
Tenacity	25 to 31 g/tex
Density	0.89 to 0.90 g/cc

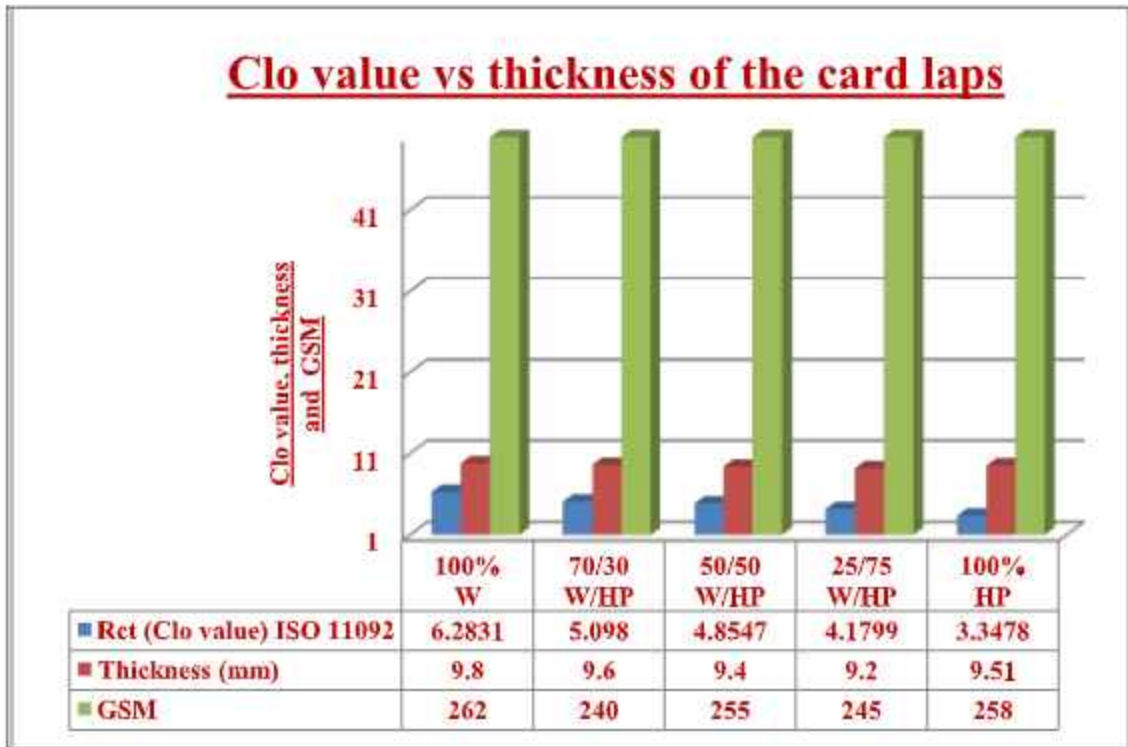


Fig. 20: Effect of blending weed fibre with polyester on clo-value, thickness and GSM



Fig. 21: Nonwoven Pilot Plant facility at NITRA

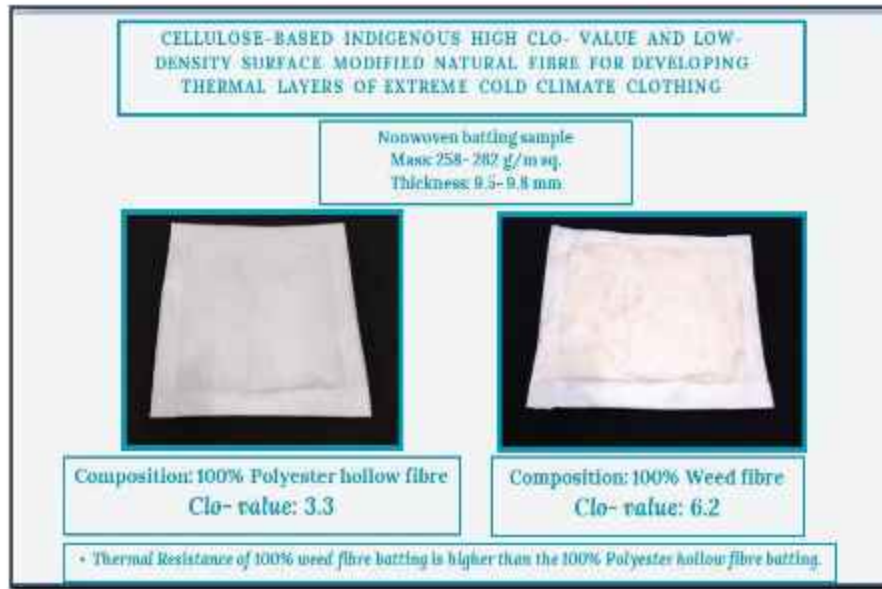


Fig. 22 (a): Nonwoven samples developed at NITRA Nonwoven Pilot Plant



Fig. 22 (b): Blended nonwoven samples developed at NITRA Nonwoven Pilot Plant

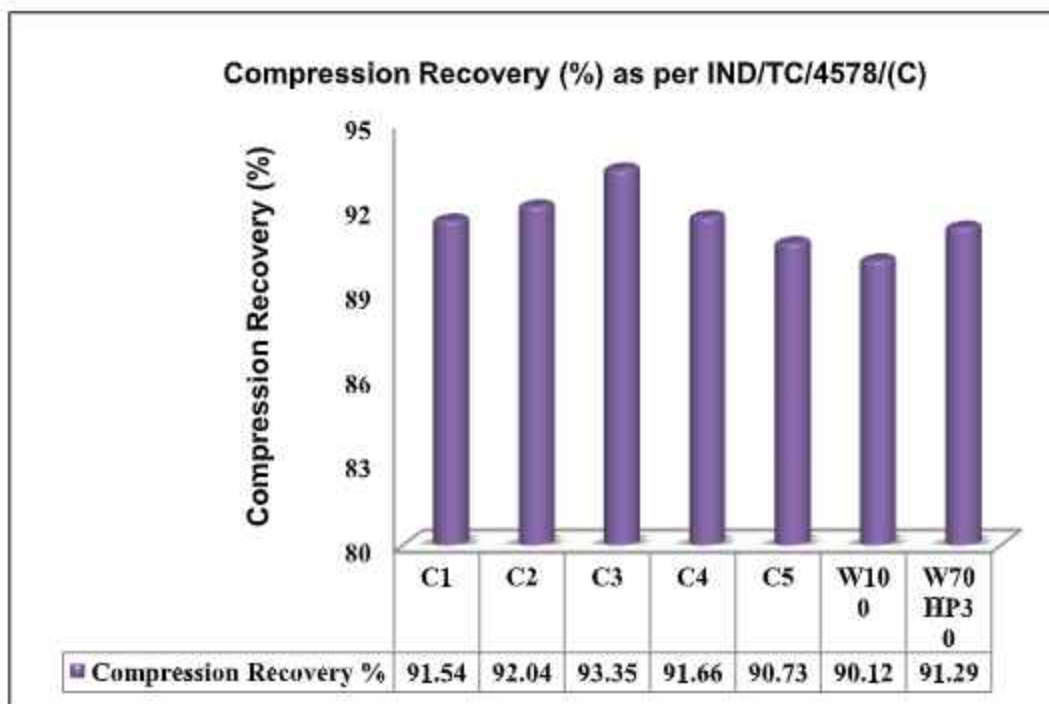


Fig. 23: Compression recovery percentage of the developed samples

(viii) Project title : Pollution Prevention and Effective Waste Management of the units in Panipat Textile Cluster (Sponsoring Agency: Solidaridad, New Delhi)

Duration : Started in August 2023

Objectives :

- Comprehensive study of the Panipat textiles industry in terms of the Pollution Prevention, effective waste management and today's Industrial scenario-challenges & opportunities.
- Reducing the environmental footprint (water consumption by 30%, chemical consumption by 25%) in the units in Panipat Textile Cluster.
- Improve the performance of ETP.
- Establishment of Common Facility Testing cum Laboratory Centre for efficient water management in industries.
- Establishment of 6 Pilot Demonstration Units on eco-friendly technologies..
- improve the OHS of workers in industries.

Progress of work :

- A baseline study is ongoing and has been completed for 19 processing industries.
- Based on the baseline survey and collected data, trials and implementation are running concurrently to achieve a 30% reduction in water usage, a 25% decrease in chemical consumption, and savings in energy within units in the Panipat Textile Cluster.

- The effectiveness of the Effluent Treatment Plant (ETP) has been enhanced.
- An in-house environmental laboratory has been established within one industry.
- An awareness training program is ongoing.
- The baseline survey and intervention report has been submitted.

2. RECENTLY SANCTIONED PROJECT

Sanctioned by NTTM, Ministry of Textiles, Govt. of India

- Development of Indigenous State-of-the-art instruments for Protective Textiles.

INSPECTION & CONSULTANCY SERVICES

Technical consultancy & inspection are another important aspect of NITRA's multifarious activities. NITRA provides assistance to the industry in the form of technical consultancy for resolving their operational problems. The areas of expertise where NITRA offers consultancy solutions are feasibility study, system certification, infrastructure set up, valuations, manpower rationalization, energy audits, water audit, and product/process & design development etc. NITRA also offers third party inspection services to the industry.

Major areas of inspection & consultancy services offered during the period 2023-24 are given below:

Inspection Services

- Third party inspection of Blankets, T-shirts, Gabardine, Coat combat, Serge, Woolen Jersey, Thermal vest, Angola shirtings, Cloth disruptive, Full Body Protector, Rucksack, Terry Towel, Water bottle, Rain Cape, Balaclava, Riot control helmet, Light weight ground sheet, Weist belt nylon, Cotton bed durries, Pouch for ammunition grenades, Uniform cloths, Kopak mattresses, Polycarbonate shield, Cloth cotton, Sleeping bed etc.

Consultancy Services

- Setting up of 1200 KLDZLD plant in Bhilwara
- Setting up of ZLD plant
- Pollution prevention and effective waste management of Panipat Textile Cluster
- Energy audit
- Power Quality Analysis
- Process Audit
- Manpower & Workload Study in Spg. Unit
- Plant/ Machinery & Equipment evaluation study based on health & ageing
- Study on performance assessment of New Card Clothing developed by ICC

*Inspection & Consultancy services undertaken in the year 2023-24 are given in Annex-8.

TESTING SERVICES

Testing or quality evaluation is one of the most important activities in the entire value chain of textile and garment industry. NITRA offers a wide range of testing facilities for fibre, yarn, fabrics, garments, dyes, chemicals and effluent in its well equipped NABL accredited seven laboratories i.e. Physical lab, Chemical lab, Heat & Flame Testing lab, Polymer & Technical Textiles lab, Eco lab, Environment lab and Microbiology lab. NITRA continues to emphasize on doing accurate evaluation and delivering time-bound test results to its clients.

PHYSICAL QUALITY EVALUATION LABORATORY

No. of Commercial Samples Tested: 2724

In addition to this, around 150 R&D samples were also tested.

Type of Samples Received:

Cotton, Polyester, Viscose, Nylon, Polypropylene, Jute, Bichhue Ghas, Hollow Fibres, Wool, Polyester wetting, Leaf & bark fibres, Silk, Cotton and Blended yarn, Sliver, Cord, Ropes, Filament yarn, Sewing threads, Industrial threads, Kite flying thread, Lycra belt, Tape, Cotton & Blended fabric. National flags, Canvas, Automotive fabrics, Laminated fabrics, T-shirts, Vest, Drawers, Biref, Blanket, Jersey, Serge, Sarees, Cardigan, Gloves, Mosquito net, Pillow, Quilt, Furnishing fabric, Socks, Jacket, Felton cloth, Carpet, Webbing, Towel, Bed sheets, Wool top, Mat, Rain coat, Garments, Protective, Non-woven fabrics, Lycra yarn, Topper pad, Scarf, Pile fabric, Felt, Rugs, Foam, Laminated foam fabric, Caps, Geo grid, Filter fabrics, 3 layer breathable fabric, Composites, Geotextiles etc.

Type of Tests Conducted:

Fibre length, Denier, Strength, Tenacity, Crimp%, Fibre shrinkage, Fibre diameter, Fineness, Trash%, Neps/gm., Elongation, Cotton, Maturity, Fused Fibre, Yarn count, Yarn CSP, Twist, RKM, Hairiness, Uster Imperfections, Appearance Grade, Co-efficient of friction of yarn to yarn and yarn to metal surface, No. of filaments in yarn, Thermal shrinkage, Fabric/Garment's dimensional measurement, Thickness, GSM, Yarn count, Ends/picks, Coarse/Wales, Base/Biase, Fabric strength, Elongation, Tear & bursting strength, Stretch & Recovery, Puncture resistance, Seam strength/Seam slippage, Bond & Peel strength, Weave analysis, Stiffness, Abrasion, Pilling, Yarn on yarn abrasion, Yarn slub analysis, Crease recovery angle, Drape, Snagging, Pore size of filter media, Air permeability, Constant/variable load Elongation, Spirality in garments, Wool fineness, Fineness Grade of wool fibre, Fibre hollowness, Fabric streak analysis, Fabric sheet friction, Wide width tensile, strength, Blade cut resistance, Yarn/fabric type identification, Fabric defect analysis Resistance to penetration by synthetic blood/ Splash resistance for surgical mask; Differential pressure, mm H₂O/cm² for surgical mask etc.

CHEMICAL QUALITY EVALUATION (CQE), HEAT & FLAME LABORATORY (H&F) AND MICROBIOLOGY LAB

No. of Commercial Samples Tested: 2605

In addition to this, around 150 R&D samples were also tested.

Type of Samples received:

CQE: Fibres, Yarns, Fabrics, Garments, Technical Textiles (Protech, Nonwoven, Automotive etc.), Dyes & Chemical Auxiliaries, PPEs/ Coveralls/ Shoe cover, Surgical Mask & Gowns etc.

H&F: Personal protective clothing, Upholsteries, Automotive fabrics, Floor coverings, Fabric for Railways etc.

MICROBIOLOGY: Fibres, Yarns, Fabrics, Garments, Technical Textiles (Protech, Nonwoven, Automotive etc.), Polymers, Helmets, Chemicals and Finishes etc.

Type of Tests Conducted:

CQE:

- Colour Fastness properties
- Wax Content/ Oil Content/ Blend composition etc.
- Total Colour difference, Yellowness/ Whiteness Index & Dye powder strength evaluation by Computer Colour Matching System/ UV-Spectrophotometer
- Various properties for automotive fabric
- Fluorescent & reflective tape, Flammability fabric, Waterproof material
- Synthetic Blood Penetration-Fabric/ Coverall/ Shoe cover
- Flammability for surgical mask, etc.

H&F Lab:

Ease of ignition of vertically oriented specimen, Flame spread properties of vertically oriented specimen, 45° (inclined) Flammability, Vertical flammability test, Horizontal flammability test, Limited flame spread test, Convective heat test, Radiant heat test, Molten metal splash test, Contact heat test, Impact of spatter test, Electrical resistance, High visibility, Ignitability of vertically oriented specimen, Flame spread vertically, Smoldering cigarette test, Match flame test PTTD, Oxygen index, Methanamine table test, Hot metal nut test, Vertically oriented specimen, Flame spread property of Blanket etc.

MICROBIOLOGY:

Antimicrobial Evaluation:

Antimicrobial Finishes on Textile materials: Assessment Staphylococcus aureus ATCC No 6538, -Klebsiella pneumonia ATCC No 4352; Antimicrobial Activity Assessment of Textile Materials: Parallel Streak method; Antimicrobial Activity Assessment of new carpet -Qualitative assessment/ Quantitative assessment; Antibacterial activity assessment of

textile materials: Agar plate method; Determination of antibacterial activity of textile product; Measurement of antibacterial activity on plastics and other non-porous surface; Determination of antibacterial activity of textile product- Agar diffusion plate test; To evaluate the antibacterial efficacy of antibacterial finished textile product; To determine the resistance to dry bacterial penetration; Resistance to dry microbial penetration Bacterial Filtration Efficiency etc.

Antifungal Evaluation:

To determine the degradability of textile materials-Part-1; To evaluate the susceptibility of textile specimen against fungal Chaetomium globsum-Part-2; To evaluate the susceptibility of textile specimen against fungal like Aspergillus niger.-Part-3; Standard practice for determining resistance of synthetic polymeric materials to fungi; Detection of mildew /rot proofness etc.

POLYMER & TECHNICAL TEXTILES LABORATORY

No. of Commercial Samples Tested: 708

Type of Samples received:

Coated / Laminated, Formed fabrics, Garments, Rubber, Plastic, Leather, Polymer products, Zipper, Slide fastener, Adhesives and Polishes, Buttons and Tapes, Canvas, Leather, Rubber, Plastic and Safety shoes, Composites, Medical Textiles, Geo-textiles, Automotive materials, Protective clothing, Wooden block, Rubber block, Full Body Protector, Anti Riot Helmet, PC Lathi, PC Shield, Rain Cape, Rain Poncho, Bed Mattress etc.

Type of Tests Conducted:

Adhesion strength, Ash content, Bending resistance, Bound organic substances, Chromium content, Compression set, Adhesion tests for shoes, Cut growth, Degree of tannage, Differential number, Dimensional change, Flammability test, Smoke visibility test, Fire resistance, Flexing endurance, Hydrogen sulphide resistance, Ignitability test, Melt flow index, Nitrogen content, Proofing content, Resistance to damage by flexing, Polymer content, Stretch test of elastic tape, Tensile strength & elongation, Tear strength, Thermal conductivity, UV protection factor, Performance test on zipper, Water vapour permeability of leather. Seam fatigue test, Toxicity index, FTIR, Melting point, Ash content, Crib test, Smoke visibility test, Toxicity index, Fire resistance test, Stab & Impact resistance test, Crumple resistance test etc.

ECO & ENVIRONMENT LABORATORY

Number of samples analyzed: 235

ECO LABORATORY

Type of samples received:

Fabric, Yarn, Fibers, Thread, Garment, Carpet, Blanket, Bath Rugs, Rain Capes, Melt Sheet, Automobile Components, Research samples etc.

Type of analyses conducted:

- Carcinogenic Aromatic Amines released from Azo dyes
- Hazardous Substances- Cd, Pb, Hg & CrVI
- Free and released Formaldehyde
- Toxic Heavy Metals- Cd, Cu, Co, Cr, Hg., Ni, Pb, Zn etc.
- Other metals- Fe, Mn, Ca, Mg, Na, K, etc.
- Residual Chlorine
- Penta Chloro Phenol (PCP)
- pH of Aqueous Extract
- Phosphorus, Titanium Oxide & IPA, etc.

ENVIRONMENT LABORATORY

Type of samples received:

Raw Water, Treated Water, De-mineralized Water, Drinking Water, RO Feed Water, RO Treated and Reject Water, UF Feed and Treated Water, Process House Water, Condensate Water, Industrial Effluents, ETP Inlet, Intermediate and Outlet water, STP Inlet and Outlet Water, Research and Consultancy Samples etc.

Type of analyses conducted:

- Physicochemical analysis of water including Color, Odor, Turbidity, pH, Conductivity, Total solids, TDS, TSS, Alkalinity, Hardness, Ca, Mg, Na, Cl, SO₄, NO₃, PO₄, HCO₃, CO₃, SiO₂, Fe, B, F, Residual Cl₂, Ammonical Nitrogen, etc.
- Drinking water parameters including bacteriological analysis (MPN Coliform/100 ml) and heavy metals like Cd, Co, Cu, Cr, Pb, Hg, Ni, Zn etc.
- Effluent parameters like pH, TDS, TSS, COD, BOD, O/G, SAR, NH₃, S, Cr, Res. Cl₂ and heavy metals etc .
- pH, Solids, Moisture content and Heavy Metals (Cd, Cu, Co, Cr, Hg., Ni, Pb, Zn etc.) in ETP Sludge etc.

New Clients Added in Testing Services:

M/s. Steel Case Asia Pacific Holdings Pvt. Ltd., M/s. Godrej & Boyce Mfg. Co. Ltd., M/s. Superlite, M/s. Hemp Affair Pvt. Ltd., M/s. Pali CETP,

Participation of Labs in Inter-lab and Proficiency Test Program:

- NITRA, Ghaziabad
- BTRA, Mumbai
- SASMIRA, Mumbai
- SITRA Coimbatore
- MANTRA, Surat
- SPECTRO, Greater Noida
- ATHARWA, Noida
- AROMA, New Delhi
- ATIRA, Ahmedabad
- CIPET, Bhubneshwar
- SLEEN India, Agra
- WRA, Thane
- SCS, Enviro Services, Jaipur
- Excel Surveyors, Kolkata
- SITRA Power Loom Service Center, Tiruchengode (SITRA PLSC)
- Garware Technical Fibers, Pune
- NTH, Ghaziabad
- AYM Syntex Ltd., Dadar and Nagar Haveli

TRAINING SERVICES

Keeping in view the ever-increasing demand for trained manpower in textile and garment industry, NITRA offered several job-oriented training programs in regular and distance learning mode (for working professionals) to help the textile and apparel industry source trained manpower. Regular programs are meant for young graduates and 12th Pass students aspiring to make their career in the garment industry. These programs cater to meet the needs of different departments such as Production, Quality Control, Merchandising and Industrial Engg.

Job-Oriented short-term programs:

Since 2002, NITRA has been conducting several job-oriented professional training programs in regular and distance learning mode (for working professionals) to help the textile and apparel industry source trained manpower.

Job-Oriented short-term programs (Regular mode):

Regular programs are meant for graduates and 12th Pass students aspiring to make their career in the garment industry. These programs cater to meet the needs of different departments such as Production, Quality Control, Merchandising and Industrial Engg.

During the year 2023-24, following full time programs were offered. A total of 53 students were admitted in these programs. Details are given below.

S. No.	Program Title	Min. Qualification	Duration	No. of students trained
1	Fashion Marketing and Merchandising (FMM)	Graduation/ Diploma	12 months	22
2	Apparel Design & Quality Control (ADQC)	12 th Pass	12 months	27
3	Apparel Production and Industrial Engg. (APIE)	12 th Pass	12 months	04

Distance Learning Programs for Working Professionals:

Since 2003, NITRA is conducting distance learning programs for the working executives of textile and apparel sector. During the year 2023-24, following distance learning programs were offered. A total of 59 candidates were admitted in these programs. Details are given below.

S. No.	Name of the Program	Duration	No. of persons trained
1	Textile Technology & Management (TTM-DLP)	12 months	19
2	Apparel Manufacturing and Merchandising (AMM-DLP)	12 months	22
3	Quality Evaluation of Textiles and Garment (QETG-DLP)	12 months	18

Contact sessions are conducted twice in a month on alternate Sundays in NITRA campus.
Summer Training Programs:

Every year, NITRA conducts one month summer training programs for the students of textile universities, colleges and polytechnics pursuing Post Graduation/Graduation/ Diploma level courses. During the year 2023-24, summer training programs offered and no. of students attended are given below :

S. No	Title	No. of trainees
1	Apparel Manufacturing and Merchandising (AMM)	22

Placements of Short-term Students, Batch 2022-23

A total of 10 garment/home textiles export houses and buying houses recruited NITRA students. List of units where the students got placed is given below.

S.No	Name
1	Paramount Products, Noida
2	C & R Textiles, Noida
3	Brij Designs, Gurgaon
4	Radiant Expovision, Noida
5	Orient Fashions, Noida
6	International Sourcing Co, Noida
7	G V Knits, Greater Noida
8	Tandi, Noida
9	Street Nine, Noida
10	SD Enterprises, Noida
11	Tulp Elastics, Noida
12	Oxymcraft, Gurgaon
13	KK Global, Noida

NITRA Technical Campus: The Academic Wing to Support Training Activities

NITRA Technical Campus was established during 2011-12 for conducting AICTE, MoE approved and AKTU, Lucknow affiliated B. Tech. programs. It provides students a unique opportunity to undergo comprehensive training on world class facilities, all available under one roof, to make them industry ready.

Placement of seventh batch of B.Tech. students of NITRA Technical Campus has been very impressive. Till 31st March, 2024, 44 students of Textile Technology and Computer Science & Engg. Branches have been placed in renowned companies like M/s. Raymond,

M/s. Trident Group, M/s. Reliance Retail, M/s. Vardhman Textiles Ltd., M/s. RSWM, M/s. Maral Overseas, M/s. Avanti Overseas, M/s. RSJ Inspections, M/s. Matrix Clothing, M/s. Khosla Profile, M/s. Textile Sector Skill Council, M/s. DiraeERP Solutions Pvt. Ltd., M/s. ANR Software Pvt. Ltd., M/s. Accentuate Business Solutions Pvt. Ltd., M/s. RTDS, M/s. SG Infosystems, M/s. InnoBit Systems Pvt. Ltd., M/s. Vivo Mobile India Pvt. Ltd., M/s. DigiTech Systems Pvt. Ltd. & M/s. Silaris Informations Pvt. Ltd.

Please refer Annex-7 for training program details.

Please refer Annex-13 for placement details of NITRA Technical Campus (NTC) students.

LIBRARY AND INFORMATION SERVICES

NITRA library is enriched with printed and digital resources. It has dedicated computers to provide on-line access to library resources.

Resources

The library has developed an adequate collection of Books, Journals, Reports, Thesis and Bound Volume Journals with specialized focus on textiles and allied subjects. The collection is as under:

Books	10231
Journals (For list of journals refer Annex-11&12)	21
Project reports	253
Thesis (M.Sc./Ph.D., B.Tech - CSE/TT/TC)	216
Journals (Bound Volumes)	4954

Library Services

Online Public Access Catalogue (OPAC):

- Library collection is computerized and the online catalogue provides bibliographic information about 10,000 holdings of books, journal volume (bound), thesis, project reports etc. of the library
- Online Public Access Catalogue informs users about new books and journals added to the library collection
- Members can check details of the borrowed books
- Wi-Fi networking provides its users, access to internet

Photocopying Services:

Photocopy of the library documents are made available mainly for academic purpose.

NITRA has taken up Institutional Membership of:

- Bureau of Indian Standards, New Delhi
- The Textile Institute, Manchester

Centre for Academic Partnership (CAP)

The library continues to promote its academic interaction with academic institutions by making its resources and services available under "Centre for Academic Partnership" scheme. Ten Institutions have become the members of library so far.

New Arrivals of Books at Library

New Arrivals of Books at Library 2023-2024 (For Annual Report)

1. Shear Thickening Fluid : Theory & application, Ed. By Salim Gurgun. (2 copies)
2. Advances in Healthcare and Protective Textiles, Ed. By Shahid-UI-Islam et.al. (2 copies)
3. General Financial Rules, 2017: Incorporating compendium of rules on ADVANCES to central government servants (Incorporating order received up to August, 2022), 33rd ed. by Muthuswamy, Brinda, Sanjeev
4. Let Us Python, 6th ed. by Yashwant Kanetkar, Aditya Kanetkar
5. Artificial Intelligence: A Modern approach, 4th ed. by Stuart J Russel and Peter Noving
6. PROLOG: Programming for artificial intelligence, 3rd ed. by Ivan Bratko
7. Artificial Intelligence: Foundations of computational agents, 3rd ed. by David Poole and Alan K Mackworth
8. Artificial Intelligence: A systems approach by M Tim Jones
9. Technical Communication: Effective Communication skill by Dr Ritu Sorya
10. Project Management and Entrepreneurship by Dr. Shubhendu Shekhar Shukla, Dr. Saurabh Bajpai
11. Indian Tradition, Culture and Society by Richa Chaudhary, Arunima Mishra, Imran Khan
12. Rural Development: Administration and planning by Dr. Girish Datt Gautam

IMPORTANT EVENTS AND HAPPENINGS – DURING 2023-24

NITRA's Glorious Presence at Bharat Tex 2024 at Bharat Mandapam, New Delhi

Hon'ble Smt. Darshana Vikram Jardosh, MoS, MoT, Ms. Rachna Shah, IAS, Secretary, MoT and Mr. Rajeev Saxena, IRS, Jt. Secretary, MoT and Dignities of Textile Sector shown keen interest in NITRA development under NTTM and appreciated NITRA R&D activities at Bharat Tex 2024 (Feb 26-29, 2024).

Dr. Arindam Basu, DG NITRA Moderates Interactive Session on "Achieving Excellence: Green Practices & Innovative Material Management" at Bharat Tex 2024 on February 26, 2024

NITRA at National Workshop with Centre of Excellence for Technical Textiles organized by Government of Tamil Nadu at Coimbatore

Dr. Arindam Basu, DG NITRA moderated a session on "Interaction with the entrepreneurs on their journey in technical textile segments" at the workshop on February 2, 2024. He also deliberated on scope, opportunities, product development, facilities and industry support in protective textiles at the workshop on February 2, 2024.

Research Advisory Committee (RAC) Meeting at NITRA, Ghaziabad

24th RAC meeting was held at NITRA on January 20, 2024. NITRA scientists presented 11 R&D projects to the august gathering consisting of experts from textile and apparel industry and academia (RAC members & special invitees). Developmental projects were aimed for steel industry / automotive industry / armour sector /specialized fire suits/agro textiles/extreme cold climate clothing/protective textiles/ sports textiles / development of nylon 66/ conversion of natural resources to industrial products/sustainability etc.

NITRA's Scientists Participate in Jute Symposium with Special Focus on Jute Geo Textiles under National Jute Development Program (NJDP), Ministry of Textiles, Govt. of India on December 21, 2023 at Hotel Ashoka, New Delhi.

NITRA's scientists participated in Jute Symposium with special focus on Jute GeoTextiles under National Jute Development Program (NJDP), MoT, Gol on December 21, 2023 at Hotel Ashoka, New Delhi.

CII Recognizes NITRA as one of Top 5 Innovative Institutes in India

Confederation of Indian Industries (CII), biggest industry association of India recognized Northern India Textile Research Association (NITRA) as one of the Top 5 Innovative Institutes in India for the year 2023, on Dec. 15, 2023 based on its innovations & transfer of technologies to the Industry. Last year also NITRA was recognized by CII as one of the top 3 Innovative Institutes.

ATIRA, BTRA, NITRA and SITRA Organize 61st Joint Technological Conference

Joint Technological Conference (JTC) is an annual event of India's leading textile research associations ATIRA, BTRA, NITRA and SITRA. This year the 61st version of the

conference held at BTRA, Mumbai during December 14 and 15, 2023. Papers presented by NITRA Scientists are given in Annex-6.

NITRA's 47th Annual General Meeting

The 47th Annual General Meeting (AGM) was held on 23rd Sept.'23 at NITRA Campus, Ghaziabad. The members of NITRA Council of Administration unanimously consented to continue with the existing leadership team for the year 2023-24. As a result of that, Sh. Raj Kumar Jain, MD, Zonac Knitting Machines (P) Ltd. will be continuing his charge as Chairman, NITRA. Sh. Vidit Jain, Joint. MD, Pasupati Spg. & Wvg. Mills Ltd. and Sh. Sandeep Hora, C.E.O. of Aeronav Industrial Safety Appliances continued as Dy. Chairman and Vice Chairman of NITRA respectively.

18th Convocation Ceremony at NITRA

NITRA's 18th Convocation Ceremony was held on Saturday, 23rd Sept.'23 at NITRA, Ghaziabad. Dr. Roopak Vasishtha, CEO & DG, Apparel Made-ups & Home Furnishing SSC was the Guest of Honour. The dais was shared by eminent industrialists and NITRA Council office bearers Sh. Raj Kumar Jain, Chairman, Sh. Vidit Jain, Deputy Chairman, and Sh. Sandeep Hora, Vice Chairman. Also present were Dr. Arindam Basu, DG NITRA, Dr. M.S.Parmar, Director NITRA and other invitees from the industry. About 130 students were awarded certificates and medals in the convocation. While speaking, DG NITRA apprised about the many industry oriented regular and DLP programs that NITRA offers on garment manufacturing, designing, merchandising, and quality assurance. So far NITRA has completed 83 batches of full time and 68 batches of DLP and has trained and placed over 3,300 students in various renowned garment /textiles exports companies.

NITRA Scientist Dr. Prakash Arun Khude conferred with Ph.D Degree from IIT Delhi

Dr. Prakash Arun Khude, Senior Scientific Officer, NITRA, honoured with a doctoral degree in Textile Engineering by Prof. T. R. Sreekrishnan, Deputy Director (Operations), IIT Delhi during the 54th Annual Convocation of the Indian Institute of Technology, Delhi held on August 12, 2023.

Dr. Arindam Basu, DG NITRA chairs a session on "Standards of Protective Textiles and Workwear" on 25th July, 2023 in 6th National Conclave on Standards & Regulations for Technical Textiles, organized by MoT, BIS and FICCI at FICCI House, New Delhi

NITRA releases a booklet LATEST DEVELOPMENTS IN TEXTILE MACHINES "Review of ITMA 2023" in July, 2023

This book consists of latest developments in Spinning & Non-woven systems, Weaving, Knitting & Garment Manufacturing, Quality Control Instruments and Sustainability & Circularity in Textile Wet Processing. The aim was to disseminate Textile & Clothing manufacturing machinery & equipment knowledge to the industry who do not have opportunity to visit ITMA 2023 at Milan, Italy.

NITRA Observes International Yoga Day

NITRA and NTC observed International Yoga Day at its campus in Ghaziabad on June 21, 2023. Sh. Krishan Kumar Arora from Bharatiya Yog Vigyan Sansthan, Ghaziabad delivered a lecture on 'Importance of Yog in Routine Life' during the occasion while his team gave live demonstrations of various Mudra, Asanaa and Pranayama. Staff members of NITRA and students of NTC have actively taken part in this yoga-session.

Senior Scientists from NITRA Visit ITMA Fair at Milan, Italy

Dr. Arindam Basu, Director General, Dr. M. S. Parmar, Director, Dr. Neha Kapil and Mr. Kushagra Prakash, both Principal Scientific Officer attended ITMA 2023, during 8th-14th June 2023, at Fiera Milano Rho Exhibition Centre, Milan, Italy with a view to get more acquainted with the latest international trends of research and developments in the field of textile and apparel industry. The objective of the visit was to identify the emerging areas of the T&C industry in the global perspective, utilizing those new ideas and trendy areas in conducting improved research back home at NITRA, and thereby serving and satisfying its clients in a more inclusive manner.

Accordingly, the team of NITRA scientists visited the various exhibit sectors, took part in the seminars/symposiums at ITMA and had interacted with international textile industry technocrats to draw a roadmap for NITRA's future R&D and consultancy areas. The major theme was sustainability, circularity and application of Artificial Intelligence.

NTC Pass-out Students Galore with Great Enthusiasm at Alumni Meet 2024

A large number of NTC passed out students assembled for alumini on March 30, 2024. They had wonderful interaction with current batch of students and guided them. The current batches of students presented a colourful cultural evening for their seniors.

NTC Organizes Fresher's Party 2023

Parichaya 2023, the annual Fresher's Party of NITRA Technical Campus (NTC) was held on 1st December, 2023 at NTC Campus, Ghaziabad. The function was celebrated with great fun and about 300 students of 1st year and 2nd year took part in the event with great enthusiasm. The fresher's meet featured various performing arts such as solo & group song, solo & group dance, satirical skits, guitar recital, painting exhibition and a series of fun games.

NTC Organizes 9th Techno-Science Quiz 2023

NITRA Technical Campus (NTC) organized the 9th Techno-Science Quiz on 2nd December, 2023 for 12th Standard science-stream students. This is an annual event of NTC to encourage young scientific minds. This year 125 students from 20 reputed schools in and around Ghaziabad took part in the event. Satyam Singh from Green Field Public School emerged the winner of the contest. Dr. Arindam Basu, DG, NITRA & Director NTC and Dr. M.S. Parmar, Director, NITRA rewarded the winners with cash prize and certificate.

NEW AI&ML Laboratory Inaugurated at NITRA Technical Campus

The Artificial Intelligence & Machine Learning lab, that constitutes an essential part of the B.Tech. Program in Computer Science and Engineering (CSE) with a specialization in AIML, was inaugurated on 23rd September 2023. The inauguration ceremony was graced by Shri Raj Kumar Jain, Chairman, Sh. Vidit Jain, Dy. Chairman and Sh. Sandeep Hora, Vice Chairman in presence of Dr. Arindam Basu, DG, NITRA and other dignitaries.

ADIEU - The Farewell Party 2023

ADIEU - 2023, the annual farewell party of NITRA Technical Campus (NTC) for the class of 2019-23 was held on 10th June, 2023 at NITRA, Ghaziabad. The event was celebrated with great fun and enthusiasm where the students of 3rd and 4th year participated in large numbers.

NITRA Technical Campus Celebrates World Environment Day

NTC celebrated World Environment Day on 5th June, 2023. This day is observed every year to create awareness among the students of NTC about the need of maintaining a clean and green environment around us. The management, faculty and students of the institute planted saplings in the NTC Campus to mark the occasion. A special technical session on how to reduce environment pollution was also organized for the students.

POWERLOOM SERVICE CENTRES

Ministry of Textiles, Government of India, has established 45 Power Loom Service Centres across the country. High priority is given to these projects as these centres help in local entrepreneurship development, employment generation and economic development of states and country.

Out of these 45 centres, administrative control of 8 Power Loom Service Centres (PLSCs) is assigned to Northern India Textile Research Association, Ghaziabad. These Centres are functioning at the following locations:

1. In Uttar Pradesh
 - (i) Meerut
 - (ii) Kanpur
 - (iii) Tanda
 - (iv) Gorakhpur
 - (v) Varanasi
2. In Haryana - Panipat
3. In Punjab - Ludhiana
4. In Rajasthan - Bhilwara

These centres are serving decentralized power loom sector to achieve the objectives as given below:

OBJECTIVES OF POWER LOOM SERVICE CENTRES

- (1) To impart practical training to weavers for improving their efficiency, skill and productivity. Side by side, quality up-gradation and product-mix diversification are also emphasized, keeping in view of the present need of national and international markets.
- (2) New design development and diversification of power loom products for improving the economy and scale of operation of power loom weavers.
- (3) To provide testing facilities to decentralized power loom sector and make them aware of need and importance of testing required for meeting forthcoming changes in reference to the globalization trends.
- (4) To provide technical consultation facilities related to operational difficulties faced by powerloom weavers.
- (5) To co-ordinate developmental activities of powerloom industry with state Governments.
- (6) To motivate decentralized power loom industry towards upgrading / modernizing their units and take advantage of government schemes, viz. TUFs, Group Workshed Scheme and Weaver's insurance etc. and organize seminars/workshops.
- (7) To collect and compile statistical information of power loom industry.

ACTIVITIES

In order to achieve above mentioned objectives, Power Loom Service Centres carried out following activities during the year 2023-2024:

1. Liaison visits/survey carried out (No. of units covered)	-	1835
2. Technical assistance/consultations provided	-	121
3. Design developed	-	27
4. Samples tested	-	2928
5. No. of persons trained	-	275

TEXTILE TESTING LABORATORIES

All eight Power Loom Service Centres are having testing facilities capable to meet basic requirements of the decentralised power loom sector in normal course. In addition to it, special testing facilities are also available at following four centres. These centres are:

1. Meerut (Uttar Pradesh)
2. Panipat (Haryana)
3. Bhilwara (Rajasthan)
4. Varanasi (Uttar Pradesh)

At these locations, samples related to fibre, yarn, fabric and chemical based requirements were tested. Details of these testing assignments carried out during the year are mentioned below :

Activity	Varanasi	Meerut	Panipat	Bhilwara	Kanpur	TOTAL
No. of samples tested	73	65	1181	1299	310	2928

COMPUTER AIDED DESIGN (CAD) CENTRES

As additional feather in the cap, there are five CAD centers, which are located at Panipat, Bhilwara, Ludhiana, Tanda and at head office, Ghaziabad. The activities of CAD centers functioning under administrative control of NITRA are as mentioned below:

Activity	Tanda	Bhilwara	Total
No. of Designs developed	22	5	27

At Power Loom Service Centre, Tanda, Computer Aided Dobby and Jacquard design systems are available where as at CAD Centre, Ghaziabad doobby, jacquard, printing and embroidery design systems are available.

These CAD Centres develop new designs and provide training to the person working in decentralized Power Loom Sector.



Ms. Rachna Shah, IAS, Secretary, MoT and Sh. Rajeev Saxena, Joint Secretary, MoT visit NITRA pavilion and show keen interest in NITRA developments at Bharat Tex 2024 at Bharat Mandapam, New Delhi



Dr. Arindam Basu (2nd from right), Director General, NITRA and Sh. Rajeev Saxena (2nd from left), Joint Secretary, MoT, along with other dignitaries including from defense and para-military forces at Bharat Tex 2024 at Bharat Mandapam, New Delhi



Inside NITRA Pavilion at Bharat Tex 2024, Bharat Mandapam, New Delhi: D G Dr. Arindam Basu (3rd from left), Director Dr. M.S. Parmar (4th) and Vice Chairman Sh. Sandeep Hora (5th) along with other Senior Scientists of NITRA



NITRA DG Dr. Arindam Basu (3rd from left) at 6th National conclave on Standards & Regulations for Technical Textiles for chairing the session “Standards of Protective Textiles and workwear” organized by MoT, BIS and FICCI at FICCI House, New Delhi



The coveted CII Industrial Innovation Award 2023 Trophy & Certificate awarded to NITRA for featuring among the Top 5 Innovative Institutions in India for the second consecutive year



A moment of great pride for NITRA : Sh. R.K. Gaur, Asst. Director, NITRA receives CII Industrial Innovation Award 2023 at a grand ceremony organized by CII at New Delhi



At the 47th AGM of NITRA: (L-R) Dr. Arindam Basu, Director General, NITRA, Sh. Raj Kumar Jain, Chairman, NITRA, Sh. Vidit Jain, Dy. Chairman, NITRA and Sh. Sandeep Hora, Vice Chairman, NITRA



At NITRA's 18th Convocation for Job Oriented Short Term Training Programs: (L-R) Dr. M.S. Parmar, Director, Sh. Sandeep Hora, Vice Chairman, Dr. Roopak Vasishtha, CEO & DG, AM&HF SSC, Sh. Raj Kumar Jain, Chairman, Sh. Vidit Jain, Dy. Chairman, and Dr. Arindam Basu, Director General

ANNEXES

MEMBERS OF THE COUNCIL OF ADMINISTRATION 2023-2024

1. **Shri Raj Kumar Jain**
(Chairman)
Managing Director
Zonac Knitting Machines Pvt. Ltd.
D-1, D-2, Site B, Surajpur Industrial Area
Greater Noida – 201 306
Distt. Gautam Budh Nagar
2. **Shri Vidit Jain**
(Deputy Chairman)
Jt. Managing Director
Pasupati Spg. & Wvg. Mills Ltd.
127, 128 Tribhuvan Complex
Nehru Place, Mathura Road
Ishwar Nagar
New Delhi – 110 065
3. **Shri Sandeep Hora**
(Vice Chairman)
Partner/CEO
Aeronav Industrial Safety Appliances
C-36, 3rd Floor, Panchsheel Enclave
New Delhi – 110 016
4. **Shri Dinesh Nolkha**
Managing Director
Nitin Spinners Ltd.
12, Badal Textile Market, Pur Road
Bhilwara – 311 001 (Raj.)
5. **Shri S.K. Kapoor**
Managing Director
Surya Processors Pvt. Ltd.
619, Bisrakh Road, Village Chhapraulla,
Distt. Ghaziabad – 201 001
6. **Shri Sanjay Kumar Jain**
Managing Director
T.T. Ltd.
879, Master Prithvi Nath Marg
Opp. Ajmal Khan Park, Karol Bagh
New Delhi – 110 005
7. **Shri Ramesh Kumar Jain**
Chairman-cum-MD
Pasupati Spg & Wvg Mills Ltd.
127, 128 Tribhuvan Complex
Nehru Place, Mathura Road
Ishwar Nagar
New Delhi – 110 065
8. **Shri Nitin Nolakha**
Jt. Managing Director
Nitin Spinners Ltd.
16-17 KM Stone, Chittor Road
Hamirgarh – 311 025
Bhilwara (Rajasthan)

9. Shri Varun Ladha
Managing Director
Suvida Spinners Pvt. Ltd.
91 K.M. Stone, N.H. No.79
Village – Dhunwalia, P.O. Sareri-311024
Distt. Bhilwara
10. Shri B.M. Sharma
Jt. Managing Director
RSWM Ltd.
Bhilwara Towers
A-12, Sector-1, Noida – 201 301
11. Dr. S.N. Modani
Managing Director & CEO
Sangam (India) Ltd.
Atun, Chittorgarh Road
Bhilwara – 311 001 (Raj.)
12. Shri Sanjay Garg
President – NITMA
Managing Director
Longowalia Yarns Ltd.
43, Mall Enclave, Civil Lines
Ludhiana – 141 012 (Punjab)
13. Shri Mukesh Kumar Tyagi
Vice President – NITMA
Director
BST Textile Mills Pvt. Ltd.
309, 3rd Floor, Woodrow Building
Veera Desai Road
Mumbai – 400 023 (Maharashtra)
14. Shri Rajiv Garg
Managing Director
Garg Acrylics Ltd.
Kanganwal Road, P.O. Jugiana
Ludhiana – 141 120 (Punjab)
15. Shri Rajeev Agarwal
CEO
Geo Sys India Infrastructures P.Ltd.,
C-56A/28, Sector-62
Noida-201309 (U.P.)
16. Representative
NTC Ltd.
Core IV, Scope Complex
7, Lodhi Road,
New Delhi – 110 003
17. Representative
NTC Ltd.
Core IV, Scope Complex
7, Lodhi Road,
New Delhi – 110 003
18. Prof. K.J. Sreeram
Director CSIR
Central Leather Research Institute
Sardar Patel Road, Adyar
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19. Shri M. Sankar
Chairman, TMMA (I) & President
Textile Machinery Division
Lakshmi Machine Works Limited
34A, Kamaraj Road
Coimbatore – 641 018
20. Dr. Arindam Basu
Director General
NITRA
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21. Shri Pragnesh Shah
Director
Ahmedabad Textile Industry's Research Association
P.O. Ambawati Vistar
Ahmedabad – 380 015 (Gujarat)
22. Dr. Prakash Vasudevan
Director
The South India Textile Research Association
13/37, Avanashi Road
Coimbatore – 641 014
23. Dr. T.V. Sreekumar
Director
The Bombay Textile Research Association
Lal Bahadur Shastri Marg
Ghatkopar (West)
Mumbai – 400 086
24. Chairman/Addl. Secretary General
Apparel Export Promotion Council
Apparel House, Institutional Area
Sector 44
Gurgaon - 122 003 (Haryana)
25. Prof. R. Alagirusamy
Professor & Head
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016
26. Ms. Chandrima Chatterjee
Secretary General
CITI, 6th Floor, Narain Manzil
23, Barakhamba Road
New Delhi – 110 001
27. Shri Ashish Bagrodia
Chairman & Managing Director
Winsome Textile Industries Ltd.
SCO 191-192, Sector 34 A
Chandigarh – 160 022

28. Shri Rajeev Mehani
Sr. Vice President
Vardhman Textiles Ltd.
Chandigarh Road
Ludhiana – 141 010
29. Dr. Rajeev K. Srivastava
Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi – 110 016
30. Prof. Rabisankar Chattopadhyay
Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016
31. Dr. J.V. Rao
Former DG & Advisor - NITRA
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Chennai - 600 020
32. Shri R.C. Kesar
PNC 024 The Pinnacle
DLF City Phase V
Sector 43
Gurgaon - 122 009 (Haryana)
33. Shri Naveen Gupta
Partner
Star Safety Hub
I-31B, DLF Industrial Area, Phase-1
Faridabad – 121 003
34. Shri Dulal Chandra Acharyya
Managing Director
M/s. G.D. International
2/72, Triveni Nagar, Meerpur Cantt.
Kanpur – 208 004
35. Shri L.N. Jhunjunwala
LNJ Bhilwara Group
Bhilwara Towers
A-12, Sector-1
Noida – 201 301
36. Shri Sharad Jaipuria
Chairman & Managing Director
Ginni International Ltd.
2nd Floor, Shanti Chamber
11/6B, Pusa Road
New Delhi – 110 005
37. Shri Shishir Jaipuria
Managing Director
Ginni Filaments Ltd.
H-6, Sector-63
Noida – 201 301

38. Dr. Rikhab Chand Jain
Chairman
T.T. Limited
879, Master Prithvi Nath Marg
Opp. Ajmal Khan Park, Karol Bagh
New Delhi – 110 005
39. Representative
Federation of Hosiery Manufacturers' Association
of India
Metro Towers, 8th Floor
1, Ho Chi Minh Sarani
Kolkata – 700 071
40. Representative
The Cotton Corpn. of India Ltd.
Kapas Bhawan, Plot No. 3/A
Sector-10, CBD – Belapur
Navi Mumbai – 400 614

MEMBERS OF THE FINANCE & ADMINISTRATIVE SUB-COMMITTEE 2023-2024

- | | | |
|----|---|---|
| 1. | Shri Vidit Jain
(Chairman FAC) | Jt. Managing Director
Pasupati Spg. & Wvg. Mills Ltd.
127, 128, 1 st Floor, Tribhuvan Complex
Ishwar Nagar
Nehru Place, Mathura Road
New Delhi - 110 065 |
| 2. | Shri Raj Kumar Jain | Managing Director
Zonac Knitting Machines Pvt. Ltd.
Plot No.18&19, Ecotech Part-1
D-2, Site-B, Surajpur Industrial Area
Greater Noida – 201 306
Distt. Gautam Budh Nagar |
| 3. | Shri Sandeep Hora | Partner/CEO
Aeronav Industrial Safety Appliances
C-36, 3 rd Floor, Panchsheel Enclave
New Delhi – 110 016 |
| 4. | Shri Dinesh Nolkha | Managing Director
Nitin Spinners Ltd.
12, Badal Textile Market
Pur Road, Bhilwara - 311 001 (Raj.) |
| 5. | Shri S.K. Kapoor | Managing Director
Surya Processors Pvt. Ltd.
619, Bisrakh Road
Village Chapraula
Distt. Ghaziabad - 201 001 |
| 6. | Shri Sanjay Kumar Jain | Managing Director
T.T. Ltd.
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| 7. | Shri Ramesh Kumar Jain | Chairman-cum-MD
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| 8. | Shri Nitin Nolakha | Jt. Managing Director
Nitin Spinners Ltd.
16-17 KM Stone, Chittor Road
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Bhilwara (Rajasthan) |

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23, Barakhamba Road
New Delhi – 110 001 |
| 12. | Dr. Arindam Basu | Director General
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Sector 23, Raj Nagar
Ghaziabad – 201 002 |
| 13. | Dr. J.V. Rao | Former DG & Advisor - NITRA
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| 14. | Shri R.C. Kesar | PNC 024 The Pinnacle
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Gurgaon-122 009 (Haryana) |
| 15. | Prof. Rabisankar Chattopadhyay | Professor
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New Delhi - 110 016 |
| 16. | Shri Ashish Bagrodia | Chairman & Managing Director
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| 17. | Prof. R. Alagirusamy | Professor & Head
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Jt. Managing Director
RSWM Ltd.
Bhilwara Tower
A-12, Sector-1, Noida – 201 301
20. Shri Naveen Gupta
Partner
Star Safety Hub
I-31B, DLF Industrial Area, Phase-1
Faridabad – 121 003
21. Shri Dulal Chandra Acharyya
Managing Director
M/s. G.D. International
2/72, Triveni Nagar, Meerpur Cantt.
Kanpur – 208 004

MEMBERS OF THE RESEARCH ADVISORY COMMITTEE 2023-2024

1. **Shri Sandeep Hora
(Chairman RAC)** C.E.O.
Aeronav Industrial Safety Appliances
E-24, Secor-7,
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2. **Shri Raj Kumar Jain** Managing Director
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Greater Noida – 201 306
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6. **Shri Sanjay Kumar Jain** Managing Director
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Opp. Ajmal Khan Park, Karol Bagh
New Delhi - 110 005
7. **Dr. Arindam Basu** Director General
NITRA
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Ghaziabad – 201 002
8. **Shri Abir Chakrabarti** Head (TRADC)
Textile Research & Application
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|-----|-----------------------------|---|
| 9. | Dr. T.V. Sreekumar | Director
BTRA
Lal Bahadur Shastri Marg
Ghatkopar (West) Mumbai –400 086 |
| 10. | Shri Arvind Yadav | Chairman cum Managing Director
Arikav Textiles Ltd.
C-4, Site-IV, UPSIDC Indl. Area
Kasna Road, Greater Noida
Gautam Budh Nagar (U.P) |
| 11. | Dr. Amit Rawal | Professor
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Indian Institute of Technology
Hauz Khas, New Delhi - 110 016 |
| 12. | Prof. Ashwini Kumar Agrawal | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas, New Delhi - 110 016 |
| 13. | Prof. Abhijit Majumdar | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas, New Delhi - 110 016 |
| 14. | Prof. B.S. Butola | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas, New Delhi – 110 016 |
| 15. | Dr. B.S. Yadav | General Manager Mahima
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| 16. | Prof. Deepti Gupta | Professor
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| 17. | Dr. J.V. Rao | Former DG & Advisor-NITRA
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Adyar
Chennai-600 020 |

- | | | |
|-----|-----------------------------------|--|
| 18. | Prof. Mangala Joshi | Professor
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Institute of Technology
Hauz Khas, New Delhi – 110 016 |
| 19. | Prof. Manjeet Jassal | Professor
Deptt. of Textile Technology Indian
Institute of Technology
Hauz Khas, New Delhi – 110 016 |
| 20. | Dr. N.N. Mahapatra | Business Head Dyes
Shree Pushkar Chemicals and Fertilizer
Ltd.,Atlanta Centre, Goregaon (East)
Mumbai |
| 21. | Shri Pragnesh Shah | Director
ATIRA
P.O. Ambawati Vistar
Ahmedabad – 380 015 (Gujarat) |
| 22. | Dr. Prakash Vasudevan | Director
SITRA
13/37, Avanashi Road
Coimbatore Aerodrome
Coimbatore – 641 014 (T.N.) |
| 23. | Shri Prasanta Kumar Deka | Vice President – Sales &
Marketing Rieter India Pvt. Ltd.
Karegaon Bhima, Pune |
| 24. | Prof. R. Alagirusamy | Professor & Head
Deptt. of Textile Technology Indian
Institute of Technology
Hauz Khas, New Delhi – 110 016 |
| 25. | Prof. Rabisankar
Chattopadhyay | Professor
Deptt. of Textile Technology
Indian Institute of
Technology
Hauz Khas, New Delhi 110 016 |
| 26. | Shri R.C. Kesar | PNC 024 The Pinnacle
DLF City Phase V
Sector 43
Gurgaon-122 009 (Haryana) |
| 27. | Shri S.M. Dwivedi | Chief Executive Officer
Sara Textiles Ltd.
Sara House, B-8, Sector-4
Noida
Distt. G.B. Nagar |

LIST OF MEMBER UNITS

A. Units in Rajasthan

1. Arham Spinning Mills
2. Ginni International Ltd.
3. J.C.T. Limited
4. Modern Threads (India) Ltd.
5. Modern Suitings
6. Nitin Spinners Ltd.
7. Orient Syntex
8. Prerna Syntex Ltd.
9. RSWM (Bhilwara unit)
10. RSWM (Banswara unit)
11. RSWM (Rishabdev unit)
12. Rajasthan Textile Mills Ltd.
13. Shree Rajasthan Syntex Ltd.
14. Shree Rajasthan Texchem Ltd.
15. Swatantra Bharat Mills, Tonk
16. Udaipur Cotton Mills - NTC
17. Banswara Syntex Ltd.

B. Units in Haryana

1. AAA Spinners
2. Bhiwani Textiles
3. Bhiwani Synthetics Ltd.
4. CMS Impex India Pvt. Ltd.
5. D.C.M. Textiles
6. H.P. Cotton Textile Mills
7. Haryana Text Prints (Overseas Ltd.)
8. HRS Fibres Ltd.
9. H.P. Spg. Mills
10. K.C. Textiles Ltd.
11. Magic Exports, Panipat
12. Mittal Processes Pvt. Ltd.
13. National Woollen & Finishers
14. Pasupati Spg. & Wvg. Mills Ltd.
15. R.K. Dyeing Industries Ltd.
16. Sheena Exports
17. Swastika Woollen Mills
18. The Technological Institute of Textiles & Science
19. Jasch Industries Ltd., Sonapat
20. Chelsea Mills, Gurgaon
21. Tex Corp. Limited
22. Protech Textiles & Trims (P) Ltd.
23. Star Safety Mills
24. Keshav Exports

C. Units in U.P.

1. ACI Oils Pvt. Ltd.
2. Alps Industries Ltd.
3. Awadh Textwood (P) Ltd.
4. Bureau Veritas Consumer Products Services (India) Pvt. Ltd.
5. Dewan Textiles
6. Gajroula Spinning Mills (T.T. Limited)
7. J.K. Synthetics Ltd.
8. Kailadevi Traders
9. Nirmal Fibres (P) Ltd.
10. Pasupati Acrylon Ltd.
11. Pawan Exports Pvt. Ltd.
12. Pasupati Fabrics
13. Shamken Multifab Ltd.
14. Shamken Spinners Ltd.
15. Sogo Fashions Pvt. Ltd.
16. Surya Processors Pvt. Ltd.
17. Mahavir Spinfab Pvt. Ltd.
18. Maral Overseas Ltd.
19. Jayshree International
20. Orient Craft Limited
21. Sybly Industries Ltd.
22. Aeronav Industrial Safety Appliances
23. Radnik Auto Exports
24. RSWM, Noida
25. Shahi Exports Pvt. Ltd.
26. Pilkhuwa Water Proofing Co. Pvt. Ltd.
27. Zonac Knitting Machine (I) Ltd.
28. Derpa Industrial Polymers (P) Ltd.
29. Icon Designs
30. Geosys India Infrastructures Pvt. Ltd.
31. Integrated Defence Products Pvt. Ltd.
32. Nexgen Fabrics Pvt. Ltd.
33. G.D. International
34. Ganpati Interglobe Pvt. Ltd.

D. Units in Delhi

1. Gold Rock World Trade Ltd.
2. Indian Arts & Crafts Syndicate
3. J.P.C.
4. Neelam Threads Pvt. Ltd.
5. R.K. Silk Mills India Pvt. Ltd.
6. Radiant Exports, New Delhi
7. Growel Impex Pvt. Ltd.
8. Kay Tent Industries

9. U.S. Industries
10. Aktion Safety Solutions Pvt. Ltd.
11. Hartree Energy Systems Pvt. Ltd.
12. S.K. Enterprises
13. T.T. Limited

E. Units in Punjab

1. Abhishek Industries Ltd.
2. Adhinath Dyg. & Fsg. Mills
3. Abhinav Cotspin Ltd.
4. Bhandari Exports
5. Exprtex Advanced Materials Pvt. Ltd.
6. J.C.T. Ltd.
7. Kharar Textile Mills
8. Malwa Cotton Spg. Mills Ltd.
9. Malwa Cotton Mills Ltd.
10. Nahar Fibres Ltd.
11. Nahar Industrial Enterprises Ltd.
12. Nahar Exports Ltd.
13. Nahar Fabric Ltd.
14. Nahar Spinning Mills
15. Oswal Cotton Spg. Mills Ltd.
16. Rishab Spg. Mills
17. Rainbow Denim
18. Suraj Textile Mills
19. Vardhman Textiles Ltd.
20. Winsome Textile Industries Ltd.

F. Units in Himachal Pradesh

1. GPI Textiles (India) Ltd.
2. Himachal Fibres Ltd.
3. Malwa Cotton Spg. Mills Ltd.

G. Units in J&K

1. Chenab Textile Mills

H. Units in Madhya Pradesh

1. Indo-Rama Textiles Ltd.
2. Maral Overseas Ltd.
3. Mid India Industries
4. Vikram Woollens Ltd.
5. Mahaveer Udyog

I. Units in Maharashtra

1. Alok Industries Ltd.
2. Applied System, Mumbai

3. Surya Lakshmi Cotton Mills
4. Kusumgar Corporate India Pvt. Ltd.
5. Sunil Industries Ltd.
6. Continental Surface Solutions India Pvt. Ltd.
7. Mafatal Industries Ltd.

J. Unit in Andhra Pradesh

1. Shree Manufacturing Co. Ltd.

K. Unit in West Bengal

1. Jayashree Textiles
2. Frontier Protectivewear Pvt. Ltd.
3. Arruth Technical Performance Wear Pvt. Ltd.

L. Unit in Karnataka

1. Bhoruka Textile Ltd.

M. Units in Tamil Nadu

1. Shubh Swasan India Pvt. Ltd.
2. Loyal Textile Mills Ltd.

N. Unit in Thailand

1. Thai Acrylic Fibre Co.

O. Units in Gujarat

1. Arvind Ltd.
2. Reliance Industries Ltd.
3. Adient Arvind Automotive Fabrics India Pvt. Ltd.

P. Units in Uttrakhand

1. G.M. Trading Co., Haridwar
2. Kashi Vishwanath Textile Mill Pvt. Ltd.

Total Member Units

State-wise:

Andhra Pradesh	-	01	Punjab	-	20
Delhi	-	13	Rajasthan	-	17
Gujarat	-	03	Tamil Nadu	-	02
Haryana	-	24	Uttar Pradesh	-	34
Himachal Pradesh	-	03	West Bengal	-	03
Jammu & Kashmir	-	01	Uttarakhand	-	02
Karnataka	-	01			
Madhya Pradesh	-	05	Overseas:		
Maharashtra	-	07	Thailand	-	01

Total No. of Member Units = 137

STAFF MEMBERS

(As on 31.03.2024)

NAME	DESIGNATION	QUALIFICATION
Dr. Arindam Basu	Director General	B.Sc. Tech. (Text. Tech.), M. Text., Ph.D., PGDBIM, C.Eng., FIE, FSAB, FTA
Dr. M.S. Parmar	Director	M.Sc., Ph.D, PGDMM, DCPA
Chemical & Quality Evaluation Division:		
Dr. Nidhi Sisodia	Sr. Scientific Officer	M.Sc., M.Tech. (Text. Chem.), Ph.D.
Dr. Preeti Kaur Sachdeva*	Sr. Scientific Officer	M.Sc. (Fabric & Apparel Sc.), Ph.D.
Mr. Kuldeep Yadav*	Scientific Officer	B.Tech. (Textile Chem.), M.Tech. (Fibres & Textiles Processing Tech.)
Mr. Kuldeep Singh	Jr. Scientific Officer	M.Sc., PG Dip. in QC & ISO 9000, ATA
Mr. Swami Sharan	Jr. Scientific Officer	M.Sc. (Chem.), ATA
Ms. Anjali Yadav*	Research Assistant	B.Sc. (Biotechnology), M.Sc. (Biotechnology)
Mr. Devendra Singh	Sr. Tech. Asstt.	B.A.
Mr. Dushyant Kumar	Sr. Investigator	B.Sc.
Mr. Sumit Kumar	Jr. Investigator	M.Com., DCA, GDDFT
Mr. Umesh Pathak	Jr. Investigator	Intermediate
Mr. Shaju Kumar T.P.*	Data Processor	B.A. (Sociology)
Engineering Division:		
Mr. Vikas Sharma	Principal Scientific Officer Head of Department	B.E.(Mech.), Adv. Dip. in MM & CM, BEE Cert. Energy Auditor
Mr. Raj Kumar Saini*	Asstt. Engineer (Elect.)	Diploma (Electrical), BEE Cert. Energy Manager

NAME	DESIGNATION	QUALIFICATION
Environmental Engineering Division:		
Mrs. Annu Kumari*	Scientific Officer	Dip. in Computer Appn., PGDM-DLP/HB in Mktg. Mgt., PGDM-DLP/HB in Business Admn., M.Sc. Tech. (Env. Sc. & Tech.)
Mr. Harendra Singh	Sr. Investigator	M.Sc. (Chem.)
Mr. D. Chakraborty*	Jr. Investigator	B.Sc. (Chem.), Cert. Course in Computer Appn.
Garment Centre:		
Mr. Vivek Agarwal	Deputy Director Dean-Textile Technology	B.Tech, PGDBM, MS (by Research)
Mr. M.M. Tiwari*	Asstt. Director	B.Sc., Dip. in Text.
Dr. Shweta Saxena	Principal Scientific Officer	M.Sc. (Textile & Clothing) M. Phil. (Textiles), Ph.D.
Mr. Sanjay Gupta	Jr. Scientific Officer	M.Sc.
Mrs. Geeta Sharma*	Faculty	Dip. in Fashion Designing & Garment Tech., B.A., AMEIM
Mechanical Processing Division (Spg. & Wvg.):		
Mr. Kushagra Prakash	Principal Scientific Officer	B.Text. (Text. Tech.) M.F. Tech.
Mr. M.K. Bansal	Sr. Scientific Officer	Dip. in Text. Tech., MBA
Mr. Lalit Giri Goswami*	Sr. Scientific Officer	B.E. (Textile Tech.)
Mr. A.K. Pandey*	Project Manager Flax Spinning	B.Text. (Tech.)
Mr. Ravi Sonkar*	Scientific Officer	Dip. in Text. Tech., B.Tech. (Text. Engg.), M.Tech. (Text. Tech.)
Mr. Adarsh Gautam*	Jr. Scientific Officer	B.Tech. (Textile Tech.)
Mr. Satyanarayana V.	Sr. Tech. Asstt.	SSC, ITI, ATA

NAME	DESIGNATION	QUALIFICATION
Marketing & Publications:		
Mr. Rajendra Kumar Gaur*	Asstt. Director Head of Department	B.Text., PG Dip. in Mktg. Mgmt., Dip. in TQM & ISO 9000, Dip. in Prodn. Mgmt., MIE
Mr. Partha Basu	Public Relations Officer	B. Com, PGD in Advtg. & Mktg. Mgmt.
Ms. Purnika Bakshi*	Marketing Executive	BBA, PGDM (HR & Mktg.)
Physics & Quality Evaluation Division:		
Dr. Neha Kapil	Principal Scientific Officer Head of Department	M.Sc. (Textile & Clothing), M. Phil. (Textiles), Ph.D.
Mrs. Seema Sharma	Sr. Tech. Asstt.	M.Sc.
Mr. Deepak Jangra*	Sr. Tech. Asstt.	Dip. in Textile Design
Mr. Jaswant Singh*	Sr. Tech Asstt.	Intermediate
Mr. R.P. Tripathi	Sr. Investigator	B.A.
Mr. G.C. Bajpai	Sr. Investigator	B.Sc. (Chem.)
Polymer & Technical Textiles Division:		
Dr. Neha Kapil	Principal Scientific Officer Head of Department	M.Sc. (Textile & Clothing) M. Phil. (Textiles), Ph.D.
Mr. Yogesh Kumar	Sr. Tech. Asstt.	M.Sc. (Chem.), ATA
Mr. Prakash	Sr.Tech. Asstt.	Intermediate, ITI
Mr. Mohit Pandey	Jr. Investigator	M.A. (Maths), B.Sc.
Research & Development Cell:		
Mr. Pankaj Kumar	Sr. Scientific Officer	B.Tech. (Textile Chemistry), M.Tech. (Textile Chemistry)
Dr. Sundaramoorthy P.*	Sr. Scientific Officer	B.Tech. (Textile Tech.), M.Tech. (Textile Tech.), Ph.D.

NAME	DESIGNATION	QUALIFICATION
Dr. Roopam Chauhan*	Sr. Scientific Officer	B.Tech. (Textile Engg.), M.Tech. (Textile Engg. & Mgt.), Ph.D.
Ms. Archana Gangwar*	Sr. Scientific Officer	B.Tech. (Man-made Fibre Tech.), M.Tech. (Polymer Tech.)
Software Development Centre:		
Dr. B.K.Sharma	Asstt. Director Head of Department	M.Sc., M.Tech. (IT), Ph.D., SMCSI, FIETE, MIAE, MCSTA, SMIACIT
Mr. Krishan Kumar Dewan	Principal Scientific Officer	B.A., BHM, e-Commerce, PGDBM, M.Sc. (Comp. Sc.)
Mr. Avnish Kumar Sharma	Sr. Scientific Officer	M.Sc., PGD in Computer Programming, Diploma in Operations Management, MCA
Library:		
Mr. Abbas Raza	Asstt. Librarian	B.Sc., M.A., DPA, PGDCA, MLISC
Administration & Accounts:		
Mr. Atul Baijal*	Dy. Manager (Accounts) Head of Department	M.Com, L.L.B., MBA
Mr. Sachin Bhatt*	Sr. Accounts Officer	Chartered Accountant
Mr. V.K. Singhal	Jr. Accounts Officer	M.Com.
Mr. S.A.A. Rizvi	Sr. Supervisor (Purchase)	B.Sc., PG Dip. in Computer Science & Application, MBA
Mr. Rajeev Singh Rawat	Sr. Supervisor (Accounts)	B. Com.
Mr. Manjeet Singh Sachdeva	Accounts Supervisor	B.Com.
Mr. N. Govindaraj*	Data Processor	SSLC
Mr. P.K. Butola	Store & Purchase Sup.	M.A.
Mrs. Saraswathi Devi*	Receptionist	B.A., Cert. in Computer Application, Cert. in Typewriting Lower & Higher

NAME	DESIGNATION	QUALIFICATION
Directorate:		
Mr. Hari Om Sharma*	PA to Director General	B.A., LL.B., PG Dip. in Personnel Mgt., Dip. in Stenography
NITRA Technical Campus:		
Mr. Sanjeev Shukla	Asstt. Director	B.Sc., B.Text., M.Tech., PGDBM
Dr. Meghna Tyagi	Asstt. Prof. (Maths)	M.Sc., Ph.D.
Mr. R.C. Yadaw	Asstt. Prof. (Mechanical)	B.Tech. (Mech. Engg.), M.Tech. (Machine Design)
Mr. A.P. Srivastava	Asstt. Prof. (CSE)	B.Tech. (IT), M.Tech. (CS), PGDBM
Mr. Sourabh Jain	Asstt. Prof. (ECE)	B.E. (ECE), M.Tech. (Aerospace Engg.-D&C)
Mr. Nitin Kumar Sharma*	Asstt. Prof. (CSE)	B.Tech. (CSE), M.Tech. (CSE)
Ms. Divya Pachauri*	Asstt. Prof. (CSE-AIML)	B.Tech. (CSE), M.Tech. (CSE)
Mr. Abhineet Suman*	Asstt. Prof. (CSE-AIML)	B.Tech. (CSE), M.Tech. (CE-NIMS)
Ms. Priya Tyagi*	Asstt. Prof. (CSE-AIML)	Dip. In Electronics Engg., B.Tech. (CSE), M.Tech. (AI & Robotics)

SUPPORTING STAFF (TECHNICAL)

Physics & Quality Evaluation Division:

Laboratory Assistant:

Mr. Saurabh Dhar*
Ms. Prachi Raj*
Ms. Annu Yadav*
Ms. Priyanka Singh*

Lab Attendant:

Mr. Mohd. Nazim*

Trainee:
Mr. Abhay Kumar*

Peon:

Mr. Ranveer Singh

Chemical & Quality Evaluation Division:

Laboratory Asstt.:

Mr. Nirbhay Katiyar*
Mr. Vikas Sahu*

Project Assistant:

Mr. Vinay Pratap

Lab Attendant:

Mr. Sandeep Kumar*

Trainee: Mr. Rahul Kumar Gupta*

Polymer & Technical Textiles Division:

Laboratory Assistant:

Ms. Tanu Walia*

Mr. Ajeet Kumar Yadav*

Mr. Sanjeev Kumar Srivastav*

Mr. Sidhanta Pal*

Mechanical Processing Division (Spg. & Wvg.):

Weaver Trainer:

Mr. V. Ramesh

Garment Centre:

Senior Trainer:

Mr. Asif Ali

Engineering Division:

Electrician:

Mr. Sandeep Sharma

Mr. Sachin Kumar*

R&D Cell:

Laboratory Assistant:

Mr. Rajkumar Gautam*

NITRA Technical Campus:

Laboratory Instructor:

Mr. Madan Gopal Pal

Mr. Rohitash Singh*

Laboratory Assistant:

Mr. Dharmendra Kumar*

Mr. Shiva Choudhary*

Mr. Aakash Gaur*

Mr. Sachin*

Computer Maint. Asstt.:

Mr. Raju Yadav

SUPPORTING STAFF (NON-TECHNICAL)

Administration:

Sewing Machine Technician:

Mr. Mukesh Kumar Tomar

Driver:

Mr. Ganesh Lal

Office Attendant:

Mr. Narender Singh

Peon:

Mr. Sukh Pal Sharma

Accounts:

Sr. Accounts Assistant:

Mr. Hemand Kumar

Mrs. Santoshi Rana*

Accounts Assistant:

Mr. Sanjay Kumar*

Library:

Draughtsman:

Mr. M.K. Tomar

Peon:

Mr. Govind Ram*

Directorate:

Daftari:

Mr. Dharamveer Singh

Driver:

Mr. Anil Kumar

Peon:

Mr. Ramveer Singh*

Mr. Ankit Choudhary*

NITRA Technical Campus:

Peon:
Mr. Rajpal Singh*

Caretaker Boys' Hostel cum
Supervisor:
Mr. Yogesh Kumar Tiwari*

Caretaker Girls' Hostel:
Mrs. Kala Naidu*
Mrs. Kusum*

Office Attendant.:
Mr. Dushyant Pandit*

SENIOR OFFICERS AT POWER LOOM SERVICE CENTRES / TESTING LABORATORIES

NAME	STATUS	QUALIFICATION	DIVISION
Mr. Kushagra Prakash	Principal Scientific Officer	B.Text. (Text. Tech.) M.F. Tech.	PLSC, Meerut
Mr. Tejpratap Singh*	Technical Officer	B.Tech. (Text. Tech.)	PLSC, Kanpur
Mr. Tejpratap Singh*	Technical Officer	B.Tech. (Text. Tech.)	PLSC, Bhilwara
Mr. S. Ansari	Resident Manager	Dip. in Hand. Tech.	PLSC, Gorakhpur
Mr. Kushagra Prakash	Principal Scientific Officer	B.Text. (Text. Tech.) M.F. Tech.	PLSC, Ludhiana
Mr. S. Ansari	Resident Manager	Dip. in Hand. Tech.	PLSC, Tanda
Mr. Dharmesh Dubey*	Officer-in-charge	B.Tech. (Text.Tech)	PLSC, Panipat
Mr. Atul Kr Sharma	Jr. Scientific Officer	B.Sc.	PLSC, Varanasi

*On Contract

RESIGNATIONS / EXPIRY OF CONTRACTS, RETIREMENTS AND TERMINATION DURING THE PERIOD APRIL 2023 TO MARCH 2024

S.No.	NAME	DIVISION	DESIGNATION
A) Resignations / Expiry of contract:			
1.	Mr. Sonu Kushwaha*	CQE	Research Assistant
2.	Dr. Palak Bansal*	Env. Engg.	Sr. Scientific Officer
3.	Mr. Puneet Kumar Singh*	Mktg. & Pub.	Business Development Manager
4.	Dr. Prakash Arun Khude*	R&D Cell	Sr. Scientific Officer
5.	Mr. Puneet Agrawal	Accounts	Dy. Manager (Accounts)
6.	Mr. Amit J. Singh*	Accounts	Sr. Supervisor (Accounts)
7.	Mr. Shantanu Kumar Ojha*	PQE	Laboratory Assistant
8.	Mr. Himanshu Kaushik*	NTC	Admission Executive
9.	Mr. Sangram Maurya *	R&D Cell	Technical Officer
10.	Mr. Vipin Kumar Verma*	Accounts	Sr. Accounts Assistant
11.	Mr. Abhay Sharma*	R&D Cell	Technical Officer
12.	Mr. Vikas Mittal*	Accounts	Accounts Officer
13.	Mr. Shivam Pathak*	Mktg. & Pub.	Business Development Manager
B) Retirements:			
1.	Mr. B.K. Talukdar	PLSC, Bhilwara	Trainer-cum-Loom Fitter
2.	Mr. Ramveer Singh	Directorate	Peon

*On Contract

RESEARCH PAPER PUBLISHED AND PRESENTED

S. No.	Title	Author(s)	Publication/Place	Date
1.	Deployment of an Advanced Wi-Fi Data Firewall System to Enhance Security in the IoT Ecosystem	B. Thankachan, Hilda Jerlin C M, Rakshit Kothari, K K Dewan, G R Kumar, Shashikant	3 rd International Conference on Sentiment Analysis and Deep Learning ICSADL 2024 hosted by Far Western University, Nepal	March 13-14, 2024
2.	Machine learning based Development and Evaluation of a Hand Exoskeleton Rehabilitation Robot for Patients with Partial Paralysis	Anand Prakash Srivastava	2 nd International Conference on Disruptive Technologies (ICDT-2024)	March 15-16, 2024
3.	Optimization of extraction process of unconventional fibres	Arindam Basu & Nidhi Sisodia	77 th All India Textile Conference, IIT, Delhi	March 16-17, 2024.
4.	Optimization of blend proportion & process parameters to produce virgin cotton/ recycled cotton yarns	Arindam Basu & Lalit Giri Goswami	-do-	March 16-17, 2024.
5.	Exploring the possibilities of sunhemp & banana fibres in Agrotech	Arindam Basu, A.K. Pandey & Nidhi Sisodia	-do-	March 16-17, 2024.
6.	High Thermal resistant surface modified cellulosic fibre for extreme climate clothing	M.S. Parmar, Preeti Kaur Sachdeva, Nidhi Sisodia	-do-	March 16-17, 2024.
7.	Protective Textiles and its future in India	Arindam Basu	National Workshop on Technical Textiles with Centres of Excellence, Coimbatore	March 16-17, 2024.

S. No.	Title	Author(s)	Publication/Place	Date
8.	Development of Eco-friendly Automotive Textiles for Acoustic purpose	Arindam Basu, Neha Kapil & Preeti Kaur Sachdeva	International Journal of Engineering Research & Technology (IJERT)	March, 2024
9.	A Novel Method For Quantifying The Blend Ratio Of Cotton And Jute Fibers", Sustainable Technologies and Circularity in Textile Value Chain - The Global Perspective	Indu Gupta & M.S. Parmar	International Textile Conference (ITC)-2024, organized by SSM College of Engineering	February 8-9, 2024
10.	A System Security Strategy Implementation for Secured Data Communication System	Nitin Kumar Sharma	5 th 2024 IEEE International Conference on Computing, Power and Communication Technologies (IC2PCT)	February 9 – 10, 2024
11.	Implementation of a Vision-Based Access Control System for Enhanced Security and Environmental Protection in Sensitive and Protected Forest Areas	Divya Pachauri	5 th 2024 IEEE International Conference on Computing, Power and Communication Technologies (IC2PCT)	February 9 – 10, 2024
12.	Protective Textiles & its scope in India	Arindam Basu	Seminar on Protech Textiles Advancement & Adaptability, BharatTex 2024, New Delhi	February 28, 2024.
13.	Textile Wastewater Treatment through AOPs with Special Focus on Fixed-Bed Approach: A Review	Palak Bansal, Annu Kumari & M.S. Parmar	Accepted in Journal of Water Chemistry and Technology Vol. 46 No. 3	February 2024,

S. No.	Title	Author(s)	Publication/Place	Date
14.	A chapter on Light-Weight Indigenously Developed Firefighter Suit	M. S. Parmar & Nidhi Sisodia	Proceedings of 3 rd International Conference on Functional Textiles & Clothing 2023. Edited by Deepti Gupta, Abhijit Majumdar & Sanjay Gupta, Springer Nature Singapore Pvt. Ltd. 2024 Springer Proceedings in Materials, Vol 4, page 3, 2024	2024
15.	Dynamic Convolution Layer Based Optimization Techniques for Object Classification and Semantic Segmentation	Jasvinder Singh & B. K. Sharma	Journal of Autonomous Intelligence. Vol. 7, Issue 3, Page No 1- 18	January 9, 2024
16.	An Analytical Comparison of various Machine Learning Algorithms for Effective Decision Making	B. K. Sharma	14 th International Conference on Cloud Computing and Data Science Engineering, (IEEE), Organized by Amity University, Noida.	January 18-19, 2024
17.	Development and Evaluation of Mosquito Repellent and Antibacterial Microcapsules Containing Catnip Essential Oil Using Complex Coacervation Approach	Rupali Kakaria, Neha Singh and M.S. Parmar	-do-	December 12 & 14, 2023
18.	Advancing Impact protection in Sports Textile: Microgel Integration on 3D knitted fabrics for enhanced Athlete Safety	Arindam Basu, Archana Gangwar & P. Khude	-do-	December 13 & 14, 2023

S. No.	Title	Author(s)	Publication/Place	Date
19.	Development of Molten Metal Splash resistant jute-cotton based union fabric	M.S. Parmar, Khuswinder Singh Dhillon & Shweta Saxena	7 th International Conference on Technical Textiles and Nonwoven (ICTN-2023), IIT, Delhi	December 13 & 14, 2023
20.	Development of an aluminized outer layer of specialized fire fighter suit	M.S. Parmar, Nidhi Sisodia & Swami Sharan	-do-	December 14 & 15, 2023
21.	Study on the development of molten metal splash resistant jute cotton union fabrics	M.S. Parmar, Shweta Saxena, Swami Sharan and Mahadeb Datta	-do-	December 14 & 15, 2023
22.	Development of mulch mat & carop cover fabrics using bio-degradable natural material: Sunhemp & Banana fibres	Nidhi Sisodia, A.K. Pandey and Arindam Basu	-do-	December 14 & 15, 2023
23.	Enhancing impact protection in sports: Optimization of Shear thickening fluid application on 3 D knitted fabrics	Arindam Basu & Archana Gangwar	-do-	December 14 & 15, 2023
24.	Development of fabrics for adsorbing carbon-dioxide & other pollutants from indoor air	Arindam Basu, Pankaj Kumar, M.S. Parmar & R.K. Gaur.	Indian Journal of Fibre & Textile Research, Vol. 48, p338-395	Dec. 2023
25.	Developing faded denim using surface-modified disperse dye dyeable cotton yarn	M S Parmar, Durgesh Raj Maurya & Nidhi Sisodia	Indian Journal of Fibre & Textile Research, Vol. 48, pp. 432-441	December 2023
26.	Comfort Properties of Protective Textiles	Arindam Basu	Annual Technical Volume of Textile Engineering Division, The Institution of Engineers (India), Vol. V, pp. 100-105	December 2023

S. No.	Title	Author(s)	Publication/Place	Date
27.	Trends, challenges and opportunities in Functional Textile and Clothing	P. Khude & Arindam Basu	Annual Technical Volume of Textile Engineering Division, The Institution of Engineers (India), Vol. V, pp. 161-199	December 2023
28.	Development of natural fibre composite for automotives having acoustic properties	Neha Kapil, Arindam Basu, Preeti Kaur Sachdeva and Mahadeb Dutta	61 st Joint Technological Conference, organized by ATIRA, BTRA, NITRA and SITRA at Mumbai.	December 14 & 15, 2023
29.	Enhancing impact protection in sports: Optimization of Shear thickening fluid application on 3 D knitted fabrics	Arindam Basu & Archana Gangwar	-do-	December 14 & 15, 2023
30.	Development of mulch mat & carop cover fabrics using bio-degradable natural material: Sunhemp & Banana fibres	Nidhi Sisodia, A.K. Pandey and Arindam Basu	-do-	December 14 & 15, 2023
31.	Study on the development of molten metal splash resistant jute cotton union fabrics	M.S. Parmar, Shweta Saxena, Swami Sharan and Mahadeb Dutta	-do-	December 14 & 15, 2023
32.	Development of an aluminized outer layer of specialized fire fighter suit	M.S. Parmar, Nidhi Sisodia & Swami Sharan.	-do-	December 14 & 15, 2023
33.	Machine Learning Techniques and Its Application for Effective Decision Making	B. K. Sharma	3 rd International Conference on Advancement in Electronics and Communication Engineering, (IEEE), Organized by RKGIT, Ghaziabad	23 rd - 24 th November 2023

S. No.	Title	Author(s)	Publication/Place	Date
34.	Transfer Learning based Low Shot Classifier for Software Defect Prediction	Vikas Suhag, S.K. Dubey B. K. Sharma	Journal of Information Systems Engineering, Vol 9 No. 2, Page No 228-237	October, 2023
35.	Effect of Finishing Treatment on Micro Polyester for Chemical Resistant Work Wear	Sahni Sugandha, Kant Rita & Parmar M. S.	Journal of the Textile Association, 84/3 (171-176)	Sept-Oct. 2023
36.	An Ensemble Model Based Recommendation approach for Consumer Decision Making System	Anlap Pathak, B.K. Sharma	International Journal on Recent and Innovation Trends in Computing and Communication, Vol. 11 Issue , Page No 3983-3988, ISSN: 2321-7973.	30 September, 2023
37.	Optimization of weave structure and filament fineness on the basic comfort properties of the fabric	Sugandha Sahni, Rita Kant and M. S. Parmar	Asian Textile Journal	Aug-Sept 2023
38.	ORSAN: A ResNet-based Model Optimized for COVID-19 Diagnosis using X-ray Images	Jasvinder Singh B. K. Sharma	Journal of Harbin Engineering University, Vol. 44 No. 7, Page No 2410-2421	July 2023
39.	A Review on Flame Retardant Jute-Based Protective Clothing	M. S. Parmar and Palak Bansal	Journal of Textile Association, May-June 2023, Vol. 84, No. 1,Page 4-9	May-June 2023
40.	Booklet on Latest Developments in Textile Machines "Review of ITMA 2023"	Arindam Basu, M.S. Parmar, Neha Kapil and Kushagra Prakash	NITRA Publication	May-June 2023

TRAINING PROGRAMS, WORKSHOPS AND SEMINARS CONDUCTED

S. No.	Nature of Program	Venue	Division	No. of batches	No. of trainees
1.	Fashion Marketing and Merchandising	NITRA Ghaziabad	Garment Centre	01	22
2.	Apparel Design and Quality Control	NITRA Ghaziabad	Garment Centre	01	27
3.	Apparel Production and Industrial Engg	NITRA Ghaziabad	Garment Centre	01	04
4.	Textile Technology and Management (DLP)	NITRA Ghaziabad	Garment Centre	01	19
5.	Apparel Manufacturing and Merchandising (DLP)	NITRA Ghaziabad	Garment Centre	01	22
6.	Quality Evaluation of Textiles and Garments (DLP)	NITRA Ghaziabad	Garment Centre	01	18
7.	Summer Training on Apparel Manufacturing and Merchandizing (AMM)	NITRA Ghaziabad	Garment Centre	01	22
8.	Knitting Technology on 10 th October, 2023	NITRA Ghaziabad	NITRA Technical Campus, Textile Tech. Deptt.	01	40
9.	Rieter Spinning System-Recent development in Spinning on 25 th September, 2023	NITRA Ghaziabad	NITRA Technical Campus, Textile Tech. Deptt.	01	30
10.	Entrepreneurship and Startups on 27 th October 2024	NITRA Ghaziabad	NITRA Technical Campus, Textile Tech. Deptt.	01	34
11.	Latest Developments in Yarn Testing Equipment (Uster Technologies) on 28 th April, 2024	NITRA Ghaziabad	NITRA Technical Campus, Textile Tech. Deptt.	01	40
12.	Hands-on Generative AI Workshop (online) on 20 th January 2024	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	130
13.	National Startup Day on 16 January 2024	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	83

S. No.	Nature of Program	Venue	Division	No. of batches	No. of trainees
14.	Cyber Security & Blockchain Integration (Online) on 4 th January 2024	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	68
15.	Latest Technology in Data Science and Generative AI on 12 th December, 2023	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	45
16.	Fundamentals of launching a startup for IT sector on 6 th December, 2023	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	66
17.	Intellectual Property Right (IPR) on 1 st September, 2023	NITRA Technical Campus	NITRA Technical Campus, Textile Tech. Deptt.	01	15
18.	Training Program for NAAC Accreditation on 1 st September, 2023	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	15
19.	Internal Hackathon for Smart India Hackathon on 22 nd September, 2023	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	30
20.	Workshop on Latest Trends in IT Industry for CSE students from 25 th -28 th April, 2023	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	35
21.	Webinar on "Patent Certification Courses and opportunity" by The Patent Office, Kolkata, DPIIT, Ministry of Commerce & Industry, Govt. of India on 21 st April, 2023	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	115
22.	Webinar on "Job opportunity in IT sector" by Nxtwave Software Company on 6 th April, 2023	NITRA Technical Campus	NITRA Technical Campus, CSE Deptt.	01	74
23.	5 days training program on Handling Effluent Treatment Plants and Analysis of Industrial Wastewater for Textile and Apparel Industry from 24 th to 28 th April, 2023	NITRA	Environment Division/ R&D Cell/ M&P	01	07

S. No.	Nature of Program	Venue	Division	No. of batches	No. of trainees
24.	7 days training program on Protective Textiles at NITRA from 19 th -25 th July, 2023 for Faculties (Textile & Fashion Technology) of Kumaraguru College of Technology, Coimbatore	NITRA	CQE/ R&D Cell/ PTTD	01	08
25.	Internship Training from 25 th June to 26 th July , 2023 for two students each from NIT, Jalandhar; KCT, Coimbatore; and ACT, Chennai	NITRA	CQE/ R&D Cell/ M&P/ PTTD	01	06

INSPECTION & CONSULTANCY SERVICES

S.No.	Type of Inspection / Consultancy	Division	No. of Units
<u>Inspection Services:</u>			
1.	Third party inspection of Woolen Jersey	MPD (Spg & Wvg)/ PQE/ M&P	11
2.	Third Party Inspection of Cloth Serge Dress	MPD (Spg & Wvg)/ PQE	04
3.	Third Party Inspection of Full Body Protector (male)	MPD (Spg & Wvg)/ PTTD	01
4.	Third Party Inspection of cloth Gabardine	MPD (Spg & Wvg)/ PQE	06
5.	Third Party Inspection of Terry Towel	MPD (Spg & Wvg)/ PQE/ PTTD	08
6.	Third party inspection of Light weight Ground Sheet	MPD (Spg & Wvg)/ PQE	02
7.	Third Party Inspection of Waist Belt Nylon with Buckle and Rings	MPD (Spg & Wvg)/ PQE	01
8.	Third Party Inspection of Rucksack 30/ 70/ 90 Litres/ Combat Backpack	MPD (Spg & Wvg)/ PQE/ PTTD/ M&P	04
9.	Third Party Inspection of Vest thermal (1 unit),	MPD (Spg & Wvg)/ PTTD	03
10.	Third Party Inspection of Water Bottle	MPD (Spg & Wvg)/ PTTD	01
11.	Third Party Inspection of T Shirt	MPD (Spg & Wvg)/ PQE/ PTTD/ M&P	07
12.	Third Party Inspection of Shirt Angola Cloth	MPD (Spg & Wvg)/ PQE/ PTTD/ M&P	11
13.	Third Party Inspection of Rain Cape	MPD (Spg & Wvg)/ PQE	01
14.	Third Party Inspection of Blanket	MPD (Spg & Wvg)/PQE/ PTTD/ M&P	09

S.No.	Type of Inspection / Consultancy	Division	No. of Units
15.	Third Party Inspection of Bala Clava	MPD(Spg & Wvg)/ PQE	01
16.	Third Party Inspection of Handloom Cotton Bed Durries	MPD (Spg & Wvg)	01
17.	Third Party Inspection of Anti Riot Helmet Advanced/ Large Riot Control Helmet	MPD (Spg & Wvg)/ PQE/ PTTD	02
18.	Third Party Inspection of Pouch for Ammunition & Grenadas	PQE/ M&P	01
19.	Third Party Inspection of Coat Combat	MPD (Spg & Wvg/ PQE/ PTTD/ M&P	06
20.	Third Party Inspection of uniform cloth	MPD (Spg & Wvg/ PQE	01
21.	Third Party Inspection of Disruptive Pattern	MPD (Spg & Wvg/ PQE/ PTTD	02
22.	Third Party Inspection of Kapok Mattress/ Mattress Glacier	MPD (Spg & Wvg)/ PQE/ PTTD/ M&P	02
23.	Third Party Inspection of Polycarbonate Shield	MPD (Spg & Wvg)/ PTTD	03
24.	Third Party Inspection of Cloth Cotton Drill Mineral Khaki	MPD (Spg & Wvg)/ PTTD	01
25.	Third Party Inspection of Light weight Sleeping Bag	MPD (Spg & Wvg)/ PQE	03
26.	Third Party Inspection of Short Drawer Cotton	MPD (Spg & Wvg)/ PQE	01

Consultancy Services:

1.	Setting up of 1200 KLDZLD plant in Bhilwara	R&D Cell	01
2.	Setting up of ZLD plant	R&D Cell	01
3.	Pollution prevention and effective waste management of Panipat Textile Cluster	R&D Cell	01
4.	Energy audit	Engg. Div.	08
5.	Power Quality Analysis	Engg. Div.	01
6.	Process Audit	MPD (Spg. & Wvg.)/ Engg.	01

S.No.	Type of Inspection / Consultancy	Division	No. of Units
7.	Manpower & Workload Study in Spg. Unit	MPD (Spg. & Wvg.)/ Engg. Div.	06
8.	Plant/ Machinery & Equipment evaluation study based on health & ageing	MPD (Spg. & Wvg.)/ R&D Cell/ Engg. Div.	01
9.	Study on performance assessment of New Card Clothing developed by ICC	MPD (Spg. & Wvg.)	01

STAFF PARTICIPATION IN HRD PROGRAMS

Sl. No.	Details of the program	Venue	Date	Participants status
1.	Young Professionals workshop	National Institute of Training for Standardization (NITS), BIS, Noida	27 th -28 th March 2024	Roopam Chauhan (as delegate)
2.	BharatTex 2024	Bharat Mandapam, Pragati Maidan, New Delhi	26 th -28 th Feb. 2024	NITRA Technical Officers
3.	AI Evolution: From Foundations to Generative AI	Online	29 th January 2024 to 2nd February 2024	Dr. B.K. Sharma, Avnish Kumar Sharma, K K Dewan, Anand Prakash Srivastava, Nitin Kumar Sharma, Divya Pachauri, Priya Tyagi & Abhineet Suman (as delegates)
4.	14 th International Conference on Cloud Computing and Data Science Engineering, (IEEE)	Amity University, Noida (Online)	19 th January 2024	Dr. B.K. Sharma (as Session Chair)
5.	Jute Symposium	ITDC, Ashok Hotel, New Delhi	21 st December 2023	NITRA Technical Officers
6.	3 rd International Conference on Advancement in Electronics and Communication Engineering, (IEEE)	RKGIT, Ghaziabad	23 rd November 2023	Dr. B.K. Sharma (as Session Chair)
7.	Entrepreneurship and Startups- Step by step approach- by M/s Sahifab Pvt Ltd	NITRA, Ghaziabad	27 th Oct. 2023	NITRA Technical Officers
8.	Recent developments in Spinning by Rieter (I)	NITRA, Ghaziabad	25 th Sept. 2023	NITRA Technical Officers

Sl. No.	Details of the program	Venue	Date	Participants status
9.	Expert talk on NAAC and NBA Accreditation	NITRA Technical Campus, Ghaziabad	1 st Sept. 2023	NITRA Technical Officers
10.	Awareness Program on Intellectual Property Rights (IPR)	NITRA Technical Campus, Ghaziabad	1 st Sept. 2023	NITRA Technical Officers
11.	AI & Cloud: Workshop on responsive AI in the cloud: Leveraging Generation power in the cloud	Joint Collaboration with Microsoft, SAP and AICTE, Organized by TechSaksham	21 st - 25 th Aug. 2023	Mr. Avnish Kr. Sharma, Mr. A.P.Srivastava, Mr. N K Sharma and Ms. Divya Pachuri (as delegates)
12.	One-week National level FDP on Cloud infrastructure (AWS)	ASIA pacific Institute of Technology & Management, Panipat Collaboration with Braino Vision	21 st – 25 th Aug 2023	Dr. B K Sharma, Mr. A. P. Srivastava, Mr. N K Sharma and Ms. Divya Pachuri (as delegates)
13.	National Education Policy 2020	Indraprastha Engineering College, Ghaziabad	21 st – 22 nd July 2023	Mr. A. P. Srivastava, Mr. N K Sharma and Ms. Divya Pachuri (as delegates)
14.	Training Programme by Rieter (I)	Rieter, Pune	12 th -14 th June 2023	Mr. Sanjeev Shukla (as delegate)
15.	Big Data Analytics Using Spark	CDAC Noida and Collaboration with NIELIT Chandigarh	28 th July 2023	Mr. A.P. Srivastava, Mr. N K Sharma and Ms. Divya Pachuri (as delegates)
16.	Latest Developments on Yarn testing Equipment by Uster Technologies	NITRA, Ghaziabad	28 th April 2023	NITRA Technical Officers

Sl. No.	Details of the program	Venue	Date	Participants status
17.	FDP on Advances in Computing Technology (A-FACT)	FDP Online (Amity University, Noida)	13 th -17 th May 2023	Nitin Kumar Sharma, Divya Pachauri, Priya Tyagi & Abhineet Suman (as delegates)
18.	Workshop on ChatGPT & AI Hacks with MS Office	Conducted by Skill Nation	22 nd July 2023	Mr. Avnish Kr. Sharma (as delegate)

ADDITIONAL SERVICES TO NITRA MEMBERS

NITRA has been providing laudable services to member units since its inception in 1974. Besides offering services to meet their ever changing needs, it also offers substantial benefit package to member units to strengthen the mutual relationship. Following is a spectrum of additional services provided to individual member units:

1. Centre for Academic Partnership Scheme (CAPS)

In a bid to diversify our activities and to intensity interaction with academic institutions and to augment techno-education base of the country as a whole, NITRA offers library & information service to the students, faculty and researchers of various colleges and institutions through participation in "Centre for Academic Partnership Scheme (CAPS)". Institutions interested to avail this unique service may obtain membership at a nominal admission fee of Rs.20,000/- only. Apart from this, a nominal sum of Rs.500/- per year will be charged to the individual user to issue his/her library card. For further details please contact the Asstt. Librarian.

2. Concessional Enrolment Fee in Workshops/ Seminars/ Conferences/ Training Programmes etc.

The enrolment fee for participating in Training Programmes/Workshops/Seminars/ Conferences conducted by NITRA is much less for member units as compared to non-member units.

3. Discount on Testing Charges

Testing charges for NITRA's member units in various testing labs are 30% (for Ordinary members) and 10% (for Associate members) discounted as compared to non-member units.

4. Discount on Publications

10% discount is offered on the purchase of NITRA publications to its member units.

5. Free Library Service

Member units can reap rich harvest by consulting the vast and well stocked NITRA library, services during any working day.

JOURNALS SUBSCRIBED BY NITRA LIBRARY

S. No.	Name of Journal	Frequency
1.	AATCC Review	Monthly
2.	Asian Dyer	Monthly
3.	Asian Textile Journal	Monthly
4.	Asian Technical Textile Journal	Quarterly
5.	Apparel Online	Fortnightly
6.	Colourage	Monthly
7.	Digit	Monthly
8.	Competition Success Review	Monthly
9.	IETE Journal of Research	Bimonthly
10.	Indian Textile Journal	Monthly
11.	Journal of the Institution of Engineers (India): Section B	Bimonthly
12.	Journal of the Institution of Engineers (India): Section E	Bimonthly
13.	Journal of Textile Institute	Bi-monthly
14.	Textile Progress	Quarterly
15.	The Textile Magazine	Bi-monthly
16.	Textiles Magazine	Quarterly

JOURNALS RECEIVED ON COMPLIMENTARY BASIS

S.No.	Name of Journal	Frequency
1.	Apparel India	Quarterly
2.	Banasthali Vidyapith News Letter	Quarterly
3.	Fibre 2 Fashion	Monthly
4.	Texprocil Newsletter	Monthly
5.	Textile Value Chain	Monthly

**PLACEMENT OF STUDENTS OF NITRA TECHNICAL CAMPUS
(As on 31.03.2024)**

Branch: Textile Technology

S. No.	Student Name	Name of Company
<u>2023-24</u>		
1.	Prateet Anand	RSJ Inspections
2.	Annu Maurya	Avanti Overseas, Noida
3.	Prakshi Sharma	Avanti Overseas, Noida
4.	Shikha Solanki	Avanti Overseas, Noida
5.	Harsh	Maral Overseas
6.	Yogesh	Maral Overseas
7.	Shivam Maharaj	Vardhman Textiles Ltd.
8.	Shivangi Nath	Vardhman Textiles Ltd.
9.	Md. Adil	Vardhman Textiles Ltd.
10.	Abhishek Gupta	RSWM
11.	Naushin Naz	Trident Group
12.	Aditi Gupta	Trident Group
13.	Raj Rajput	Raymond
14.	Amarnath Sharma	Raymond
15.	Karan Singh	Reliance Retail
16.	Neha Choudhary	Matrix Clothing, Gurgaon
17.	Shikha Gupta	Matrix Clothing, Gurgaon
18.	Ayush Dinodia	Matrix Clothing, Gurgaon
19.	Anshul Sharma	Khosla Profile, Mumbai
20.	Anil Kumar Yadav	Khosla Profile, Mumbai
21.	Varsha Singh	Khosla Profile, Mumbai
22.	Prachi Tyagi	Khosla Profile, Mumbai
23.	Shivam Tiwari	Textile Sector Skill Council
24.	Rishabh Dev Singh	Textile Sector Skill Council

Branch: Computer Science & Engineering

S. No.	Student Name	Name of Company
<u>2023-24</u>		
1.	Om Prakash Kushwaha	DiracERP Solutions Pvt. Ltd.
2.	Mayank Yadav	DiracERP Solutions Pvt. Ltd.
3.	Pratibha	DiracERP Solutions Pvt. Ltd.
4.	Sanjay	DiracERP Solutions Pvt. Ltd.
5.	Vaishali Gautam	DiracERP Solutions Pvt. Ltd.
6.	Ashish Singh	ANR Software Pvt. Ltd.
7.	Shreya Tripathi	ANR Software Pvt. Ltd.
8.	Satyam Dubey	Accentuate Business Solutions Pvt. Ltd.
9.	Arya Singh	RTDS
10.	Ganesh Kumar	SG Infosystems
11.	Nishita Rani	ANR Software Pvt. Ltd.
12.	Jatin	InnoBit Systems Pvt. Ltd.
13.	Jyoti Kumari	InnoBit Systems Pvt. Ltd.
14.	Shubham Dixit	InnoBit Systems Pvt. Ltd.
15.	Siddhant Singh	InnoBit Systems Pvt. Ltd.
16.	Utkarsh Teotia	InnoBit Systems Pvt. Ltd.
17.	Yogesh Kumar	InnoBit Systems Pvt. Ltd.
18.	Sanjana Chaturvedi	Vivo Mobile India Pvt. Ltd.
19.	Twinkle	DigiTech Syatems Pvt. Ltd.
20.	Varnika Tyagi	Silaris Informations Pvt. Ltd.



Sh. Raj Kumar Jain, Chairman, NITRA lights up the holy lamp at NITRA's 18th Convocation. Also present are (L-R) Dr. M.S.Parmar, Director, Sh. Vidit Jain, Dy. Chairman, Dr. Roopak Vasishtha, CEO & DG, AM&HF SSC, Sh. Sandeep Hora, Vice Chairman, and Dr. Arindam Basu, Director General



At Annual Research Advisory Committee Meet: The meet chaired by Dr. R. Chattopadhyay (centre), Emeritus Professor, IIT, Delhi, being flanked by Dr. Arindam Basu (left), Director General, NITRA and Dr. M.S.Parmar, Director, NITRA



NITRA's DG Dr. Arindam Basu and Director Dr. M.S. Parmar transfer NITRA developed technology of Molten Metal Splash Resistance Fabric to officials of M/s. JCT Ltd., Phagwara



Dr. Arindam Basu, DG, NITRA and Sh. H.K. Dua, MD, M/s. RFM Automotives Pvt. Ltd., Gurgaon sign MoU for transfer of NITRA developed technology "Roof Liner and Parcel Tray". Also seen is Dr. Neha Kapil, Principal Scientific Officer, NITRA



Dr. Arindam Basu, DG and Dr. M.S. Parmar, Director, NITRA sign MoU with M/s Ginni Spectra Pvt. Ltd, for transferring NITRA developed technology of Development of various types of high Clo Value for thermal layers using different non-woven fabric making techniques



Dr. Arindam Basu, Director General, NITRA addresses at the 61st Joint Technical Conference at BTRA, Mumbai



Director General, NITRA Dr. Arindam Basu (2nd from left) at Jute Symposium with Special Focus on Jute Geotextiles organized by MoT, GoI at New Delhi



Dr. Arindam Basu (center), DG, NITRA as session-moderator at National Workshop with Centre of Excellence for Technical Textiles organized by Govt. of Tamil Nadu at Coimbatore

AUDITOR'S REPORT
&
BALANCE SHEET

AUDITOR'S REPORT

1. We have audited the attached Balance Sheet of NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION, Ghaziabad as at 31st March 2024 and Income and Expenditure Account for the year ending 31st March 2024 annexed thereto. These financial statements are the responsibility of the Association's Management. Our responsibility is to express an opinion on these financial statements based on our audit.
2. We conducted our audit in accordance with auditing standards generally accepted in India. Those standards required that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosure in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.
3. We report that:
 - a) We have obtained all the information and explanation which to the best of our knowledge and belief were necessary for the purpose of our audit.
 - b) The Balance Sheet and Income & Expenditure A/c referred to in this report are in agreement with the books of Account.
 - c) In our opinion and to the best of our information and according to the explanation given to us, the account read with accounting policies and notes on accounts give a true and correct view;
 - (i) In the case of Balance Sheet the state of affairs of the above named Association as at 31st March, 2024 and
 - (ii) In the case of the Income & Expenditure A/c of the Excess of income over the expenditure for the Accounting year ended on that date.

For B.K.KAPUR & Co.
Chartered Accountants
Firm Registration No. 000852C

Sd/-
(C.A. M.S. KAPUR)
Membership No. 074615
FRN : 000852C
UDIN No. 24074615BKAFYM9777

Place : Ghaziabad
Date : 20th August 2024

NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION, GHAZIABAD

SOURCES OF FUNDS AND MANNER OF EMPLOYMENT AS AT 31ST MARCH 2024

(Amount in Rs.)

Sources of Funds	SCH. No.	As at 31.3.2024	As at 31.3.2023
Capital Funds:			
i) Corpus	1	84,72,219	84,17,219
ii) Assets created out of Grants	2	53,96,95,042	52,24,60,626
Reserves & Surplus and General Reserve	3	2,80,60,633	1,11,91,866
R & D Reserve	4	10,30,61,589	7,80,61,589
Current Liabilities	6	11,90,25,058	2,13,97,336
Total :		79,83,14,541	64,15,28,636
Manner of Employment			
Grant Receivable's	5	1,90,81,987	1,88,89,471
Fixed Assets	7	51,35,42,864	48,51,13,192
Current Assets, Loans & Advances	8	26,56,89,690	13,75,25,973
Total:		79,83,14,541	64,15,28,636

Significant accounting policies & notes to the accounts – Schedule-15.

Sd/-
CHAIRMAN
Governing Council

Sd/-
CHAIRMAN
Finance & Adm
Committee

Sd/-
DIRECTOR
GENERAL

Sd/-
DY. MANAGER
ACCOUNTS

Subject to our report of even date.

For B.K.KAPUR & CO.
Chartered Accountants

Firm Registration No. 000852C

Sd/-
(C.A. M.S. KAPUR)
(PARTNER
Membership No. 074615
UDIN No. - 24074615BKAFYM9777

Place : GHAZIABAD

Date : 20th August 2024

**STATEMENT OF INCOME AND EXPENDITURE ACCOUNT
FOR THE YEAR ENDING 31ST MARCH, 2024**

(Amount in Rs.)

INCOME GENERATION	SCH. No.	As at 31.3.2024	As at 31.3.2023
Grant-in-Aid to meet Recurring Expenditure (Non Plan)		2,00,00,000	2,00,00,000
Industry Contribution (Testing, Training, Inspection, Consultancy, Membership Subscription) and Educational services	9	10,03,53,262	7,49,40,896
Other Income	10	1,61,29,267	87,03,564
Grant-in-Aid to meet Expenditure on Projects	12	1,87,69,752	54,98,181
Grant-in-Aid to meet Expenditure at Powerloom Service Centres	13	1,35,62,825	1,35,80,930
Total :		16,88,15,106	12,27,23,571
UTILISATION			
Expenditure of Establishment	11	5,87,87,105	5,57,71,722
Expenditure on Projects	12	1,87,69,752	54,98,181
Expenditure on Powerloom Service Centres	13	1,56,85,864	1,53,14,788
Expenditure on General Administration	14	2,83,93,707	2,62,77,006
Transfer to Depreciation Fund		53,09,911	28,77,343
Total :		12,69,46,339	10,57,39,040
Balance available for Appropriation		4,18,68,767	1,69,84,531
Transfer to R&D Reserve		2,50,00,000	1,00,00,000
Transfer to General Reserve		1,68,00,000	69,00,000
Surplus transferred to Balance Sheet		68,767	84,531

Significant accounting policies & notes to the accounts – Schedule-15.

**Sd/-
CHAIRMAN
Governing**

**Sd/-
CHAIRMAN
Council Finance & Adm
Committee**

**Sd/-
DIRECTOR
GENERAL**

**Sd/-
DY. MANAGER
ACCOUNTS**

**Subject to our report of even date
For B.K.KAPUR & CO.
Chartered Accountants**

Firm Registration No. 000852C

**Sd/-
(C.A. M.S. KAPUR)
(PARTNER)
Membership No. 074615
UDIN No. – 24074615BKAFYM9777
Place : GHAZIABAD
Date : 20th August 2024**

SCHEDULE – 1

(Amount in Rs.)

CAPITAL FUNDS	As at 31.3.2024	As at 31.3.2023
Capital		
Corpus		
a) Admission Fees (Members)	26,01,779	25,66,779
Balance at the beginning		
Receipts during the year	55,000	35,000
Sub Total:	26,56,779	26,01,779
b) Capital Contribution		
Balance at the beginning	34,13,530	34,13,530
Receipts during the year		-
Sub Total :	34,13,530	34,13,530
c) Donations		
Balance at the beginning	24,01,910	24,01,910
Receipts during the year		-
Sub Total :	24,01,910	24,01,910
Total :	84,72,219	84,17,219

SCHEDULE – 2

(Amount in Rs.)

CAPITAL FUND - ASSETS CREATED OUT OF GRANTS RECEIVED FROM GOVERNMENT AGENCIES	Balance As on 31.3.2023	Additions / Write-off during the year	Balance As on 31.3.2024
<u>Capital Reserve: I – (Non Plan)</u>	32,76,379	-	32,76,379
Sub Total :	32,76,379	-	32,76,379
<u>Capital Reserve : II</u> (Sponsored Projects) - MOT	7,85,10,407	1,53,58,637	9,38,69,044
Sub Total :	7,85,10,407	1,53,58,637	9,38,69,044
<u>Capital Reserve : III</u> (Other Agencies) – National Jute Board DST	38,60,698	18,75,779	57,36,477
Sub Total :	38,60,698	18,75,779	57,36,477
<u>Capital Reserve : IV</u> (Power Loom Service Centres)	78,50,034	-	78,50,034
Sub Total :	78,50,034	-	78,50,034
<u>Capital Reserve : V</u> <u>(PLSC's income)</u>	6,31,610	-	6,31,610
Sub Total :	6,31,610	-	6,31,610
<u>Capital Reserve : VI</u> Government of Rajasthan for Bhilwara Centre	3,51,052	-	3,51,052
Sub Total :	3,51,052	-	3,51,052

CAPITAL FUND - ASSETS CREATED OUT OF GRANTS RECEIVED FROM GOVERNMENT AGENCIES	Balance As on 31.3.2023	Additions / write-off during the year	Balance As on 31.3.2024
<u>Capital Reserve : VII</u>			
Testing Lab Bhilwara, Panipat, Meerut & NITRA, Ghaziabad.	1,71,60,660	-	1,71,60,660
Sub Total :	1,71,60,660	-	1,71,60,660
<u>Capital Reserve : VIII</u>			
(CAD Centres at Bhilwara, Panipat & NITRA Ghaziabad)	72,26,565	-	72,26,565
Sub Total :	72,26,565	-	72,26,565
<u>Capital Reserve : IX</u>			
Modernisation of PLSC's	1,51,09,628	-	1,51,09,628
Sub Total :	1,51,09,628	-	1,51,09,628
<u>Capital Reserve : X - (CAD Tanda)</u>	4,13,482	-	4,13,482
Sub Total :	4,13,482	-	4,13,482
<u>Capital Reserve ; XI - (COE Protech)</u>	15,59,39,236	-	15,59,39,236
Sub Total :	15,59,39,236	-	15,59,39,236
<u>Capital Reserve ; XII - (ASIDE) (U.P. Govt. & Nitra)</u>	8,43,87,200	-	8,43,87,200
<u>Capital Reserve ; XIII - (ISDS)</u>	11,87,15,198	-	11,87,15,198
<u>Capital Reserve ; XIV - FIC (COE)</u>	2,90,28,477	-	2,90,28,477
GRAND TOTAL:	52,24,60,626	1,72,34,416	53,96,95,042
Previous year	52,24,54,831	57,735 (51,940)	52,24,60,626

SCHEDULE-3

(Amount in Rs.)

RESERVES & SURPLUS AND GENERAL RESEARVE	As at 31.3.2024	As at 31.3.2023
(A) Surplus accumulated: Excess of Income over Expenditure		
Balance at the beginning of Financial Year	42,91,866	
Add:- Transferred from Income & Expenditure during the year <u>68,767</u>	43,60,633	42,91,866
(B) General Reserve		
Balance at the beginning of Financial Year	69,00,000	
Add:- Transferred from Income & Expenditure during the year <u>1,68,00,000</u>	2,37,00,000	69,00,000
Total :	2,80,60,633	1,11,91,866

SCHEDULE – 4*(Amount in Rs.)*

R & D RESERVE	As at 31.3.2024	As at 31.3.2023
a) Opening Balance	7,80,61,589	6,80,61,589
Add :- Transfer from Income & Expenditure during the year	2,50,00,000	1,00,00,000
Total :	10,30,61,589	7,80,61,589

SCHEDULE – 5

(Amount in Rs.)

S. No.	GRANTS PENDING UTILISATION / (Receivables)	Balance at the beginning	Receipts During the year	Adjustment/ Amount write off	Utilised during the year		Balance carried forward
					Cap. Exp.	Rec. Exp.	
I.	NON-PLAN (Ministry of Textiles)						
	Non-plan (Ministry of Textiles)	-	2,00,00,000	-	-	2,00,00,000	-
	NON-PLAN Previous Year	-	2,00,00,000	-	-	2,00,00,000	-
II.	Plan (Ministry of Textiles & other Agencies)						
1.	Development of Fabric Smoothness Tester	(9,95,484)					(9,95,484)
2.	Development of regenerated cellulosic fibre Indian Bamboo	(57,47,192)	39,82,000		-	-	(17,65,192)
3.	Development of Jute composite for automotive acoustic insulation & other uses	11,76,009	11,24,200			34,59,712	(11,59,503)
4.	Development of a molten metal splash resistance unique Jute blended workwear for steel foundry workers	(6,72,613)	21,67,000			24,82,509	(9,88,122)
5.	Development of Flame Retardant Nylon 66 yarn / fibre Indigenously.	-	1,24,37,966	-	1,15,66,715	14,98,582	(6,27,331)
6.	Development of Specialized Firefighting Suit.	-	7,87,67,460	-	7,72,37,722	16,71,951	(1,42,213)

S. No.	GRANTS PENDING UTILISATION / (Receivables)	Balance at the beginning	Receipts During the year	Adjustment/ Amount write off	Utilised during the year		Balance carried forward
					Cap. Exp.	Rec. Exp.	
7.	Development of ceramic and UHMWPE Textile Based Hybrid Polymer composite Armor with MNIT, Jaipur.	-	14,40,000	-	-	1,57,236	12,82,764
8.	Cellulose based indigenous high C/o value and low-density surface modified natural fibre for developing thermal layers of extreme cold climate clothing.	-	31,47,365	-	30,69,180	23,18,616	(22,40,431)
9.	Development of Crop cover, mulch, soil protection fabrics and other products using sunnhemp and Banana Fibre.	-	31,85,332	-	21,00,000	30,70,047	(19,84,715)
10.	Development of 3D High Performance Knitted Sports Textiles with Thermo-Physiological comfort and Impact Protective Properties.	-	72,75,197	-	51,83,740	26,87,812	(5,96,355)
11.	"Socio-economic development of SC/ST by providing training technology and market to convert local resources to industrial products (DST).	-	18,62,452	-	18,75,779	14,23,287	(14,36,614)
	Sub Total:	(62,39,280)	11,53,88,972	-	10,10,33,136	1,87,69,752	(1,06,53,196)
	Previous Year:	(4,04,06,776)	3,54,95,896	41,69,781	-	54,98,181	(62,39,280)

S. No.	GRANTS PENDING UTILISATION / (Receivables)	Balance at the beginning	Receipts During the year	Adjustment/ Amount write off	Utilised during the year		Balance carried forward
					Cap. Exp.	Rec. Exp.	
III. POWER LOOM SERVICE CENTRES							
1.	TANDA	12,00,000	12,00,000	1,03,400		13,03,400	12,00,000
2.	MEERUT	17,00,000	17,00,000	33,000		17,33,000	17,00,000
3.	LUDHIANA	15,00,000	15,00,000	58,300		15,58,300	15,00,000
4.	KANPUR	17,00,000	17,00,000	2,59,055		19,59,055	17,00,000
5.	GORAKHPUR	12,00,000	12,00,000	80,549		12,80,549	12,00,000
6.	PANIPAT	17,00,000	17,00,000	96,000		17,96,000	17,00,000
7.	BHILWARA	17,00,000	17,00,000	12,983		17,12,983	17,00,000
8.	VARANASI	19,50,191	15,00,000	4,00,938		19,00,938	19,50,191
	Sub Total:	(1,26,50,191)	1,22,00,000	10,44,225		1,32,44,225	1,26,50,191
	Previous Year:	(4,50,191)		13,80,930		1,35,80,930	1,26,50,191
	Chief Minister Handloom & Powerloom Training	-	45,40,000	-	-	3,18,600	42,21,400
	Grand Total:	(1,88,89,471)	15,21,28,972	10,44,225	10,10,33,136	5,23,32,577	(1,90,81,987)
	Previous Year:	(4,08,56,967)	5,54,95,896	55,50,711		3,90,79,111	(1,88,89,471)

NOTE :Capital expenditure utilised during the year includes a sum of Rs.83676000/- appearing as FDR with bank against letter of Credit under schedule 8 considered as spent for limited purpose as per F.No.3/(02)//pfms/2022dated 24.11.2023 issued by Department of Expenditure- MOF

SCHEDULE – 6*(Amount in Rs.)*

S.NO.	CURRENT LIABILITIES	As at 31.3.2024	As at 31.3.2023
1.	Sundry Creditors	57,52,736	26,09,775
2.	Outstanding Liabilities	50,17,660	35,26,605
3.	Security, Deposits & Advances received	1,82,21,501	1,52,60,956
4.	Letter of credit Agreement	8,36,76,000	-
5.	Bank Balance (Cr.)	63,57,161	-
	Total :	11,90,25,058	2,13,97,336

SCHEDULE – 7

(Amount in Rs.)

A. Assets owned by NITRA

S No.	Fixed Assets	Total cost as on 31.3.23	Adj. of Depreciation Reserve	WDV as on 31.3.23	Addition during the year 2023-24	Depreciation during the year	WDV as on 31.3.24
1	Building *	26299861	21232789	5067072	0	253354	4813718
	ASIDE Proj. Building (NITRA Share)	26667200	5635052	21032148	0	1051607	19980541
2	Air Conditioning Plant & Room AC	402015	379017	22998	0	3450	19548
3	Furniture	2591860	1864062	727798	0	72779	655019
4	Fixtures & Fittings	1513749	1006698	507051	513477	86989	933539
5	Office Equipments	8742011	8018568	723443	419985	136842	1006586
	Computers	471352	157230	314122	2363661	893323	1784460
6	Cooler (Room & Water)	646384	549702	96682	0	14502	82180
7	Vehicles	2003390	1329359	674031	0	101105	572926
8	Fire Extinguisher	136288	118415	17873	6250	3619	20504
9	Intercom & Telephones	284542	269197	15345	0	2302	13043
10	Machinery & Equipments (In House)	74619994	69307992	5312002	13201794	2690039	15823757
	SUB-TOTAL	144378646	109868081	34510565	16505167	5309911	45705821

B. Assets acquired under Projects

Machinery & Equipments:

A	Sponsored Projects**	50576048	-	-	17234416	-	67810464
B	CAD & Powerloom Service Centres**	26455983	-	-	0	-	26455983
C	Testing Lab, Panipat , Bhilwara & Meerut**	7389045	-	-	0	-	7389045
D	Testing Lab NITRA, Gzb**	4778640	-	-	0	-	4778640
E	Centre of Excellence Protech**	155939236	-	-	0	-	155939236
F	Focus Incubation Centre (CoE)**	29028477	-	-	0	-	29028477
G	ASIDE Govt. Share**	57720000	-	-	0	-	57720000
H	ISDS Project**	118715198	-	-	0	-	118715198
	SUB-TOTAL	450602627	0	0	17234416	0	467837043
	GRAND TOTAL	594981273	109868081	34510565	33739583	5309911	513542864

NOTE:

* The Building stands on leasehold land measuring 49.80 Acres from GDA for 90 years from 25.3.1980, the premium amounting to Rs. 47.15 lakhs was paid by the U.P. Government.

** No depreciation provided on items acquired in Powerloom Service Centres, CAD, Sponsored Projects, Testing Labs, COE, ASIDE & ISDS to the extent of the Grant given by the sponsor.

SCHEDULE – 8

(Amount in Rs.)

S.No.	CURRENT ASSETS & LOANS AND ADVANCES	As at 31.3.2024	As at 31.3.2023
1.	Sundry Debtors	66,25,928	51,34,690
2.	Advance	1,56,279	10,39,146
3.	Sundry Deposits	18,95,938	19,00,438
4.	Prepaid Expenses	4,91,880	6,21,113
5. a)	Cash in Hand	1,95,293	1,35,529
b)	Dr. Balance with Banks	58,49,223	88,10,354
6.	Other Receivables	2,74,91,894	2,07,71,142
7.	FDR with Banks (It includes earmarked deposits)	13,26,32,301	9,69,66,867
8.	FDR with Bank against L/c under NTTM Project	8,36,76,000	-
9.	Accrued Income	66,74,954	21,46,694
Total :		26,56,89,690	13,75,25,973

SCHEDULE – 9

(Amount in Rs.)

S.No.	INDUSTRY CONTRIBUTION & EDUCATIONAL	Current Year	Previous Year
1.	Training & Consultancy		
a)	Other Educational / Training Prog. 54,09,000		
b)	Inspection & Other Services 2,06,29,000		
c)	Other consultancy 83,05,242		
d)	NTC 4,02,94,640	7,46,37,882	5,12,66,062
2.	Sample Testing Fees (Include overseas testing Rs. 9,25,728/-)	2,31,33,230	2,12,57,534
3.	Income Testing Lab Bhilwara, Panipat & Meerut	17,29,650	15,34,800
4.	Membership Subscription	8,52,500	8,82,500
Total :		10,03,53,262	7,49,40,896

SCHEDULE – 10*(Amount in Rs.)*

S.No.	OTHER INCOMES	Current Year	Previous Year
1.	Overhead Recovery on R&D Projects	66,55,190	28,11,247
2.	NITRA Publications	35,865	27,645
3.	Income from Investments	69,08,822	40,16,420
4.	Waste field cotton & Yarn & Income from land utilization	7,75,330	10,65,704
5.	Application Forms	58,400	82,000
6.	Miscellaneous Income	4,37,042	95,149
7.	Balances write back	12,58,618	6,05,399
Total :		1,61,29,267	87,03,564

SCHEDULE – 11*(Amount in Rs.)*

EXPENDITURE ON ESTABLISHMENT	Current Year	Previous Year
NITRA	6,80,95,857	6,01,18,239
Sub Total :	6,80,95,857	6,01,18,239
Less : Transferred to Expenditure on Projects	93,08,752	43,46,517
Total:	5,87,87,105	5,57,71,722

SCHEDULE – 12

**SPONSORED PROJECTS EXPENDITURE AND GRANT-IN-AID
TO MEET THE EXPENDITURE**

(Amount Rs.)

Sl. No.	Name of the Sponsored Project	2023-2024		2022-2023	
		Recurring Expenditure	Amount Transferred from Grant-in-Aid A/c to meet sponsored Project Exp.	Recurring Expenditure	Amount Transferred from Grant-in-Aid A/c to meet sponsored Project Exp.
1.	Development of regenerated cellulosic fibre Indian Bamboo	-	-	19,93,267	19,93,267
2.	Development of Jute composite for automotive acoustic insulation & other uses	34,59,712	34,59,712	17,89,531	17,89,531
3.	Development of a molten metal splash resistance unique Jute blended workwear for steel foundary workers	24,82,509	24,82,509	17,15,383	17,15,383
4.	Development of Flame Retardant Nylon 66 yarn / fibre Indigenously.	14,98,582	14,98,582	-	-
5.	Development of Specialized Firefighting Suit.	16,71,951	16,71,951	-	-
6.	Development of ceramic and UHMWPE Textile Based Hybrid Polymer composite Armor with MNIT, Jaipur.	1,57,236	1,57,236	-	-
7.	Cellulose based indigenous high C/o value and low-density surface modified natural fibre for developing thermal layers of extreme cold climate clothing.	23,18,616	23,18,616	-	-
8.	Development of Crop cover, mulch, soil protection fabrics and other products using sunnhemp and Banana Fibre.	30,70,047	30,70,047	-	-

9.	Development of 3D High Performance Knitted Sports Textiles with Thermo-Physiological comfort and Impact Protective Properties.	26,87,812	26,87,812	-	-
10.	"Socio-economic development of SC/ST by providing training technology and market to convert local resources to industrial products (DST).	14,23,287	14,23,287	-	-
	Total:	1,87,69,752	1,87,69,752	54,98,181	54,98,181

SCHEDULE-13

**POWERLOOM SERVICE CENTRES EXPENDITURE AND GRANT-IN-AID
TO MEET THE EXPENDITURE**

(Amount in Rs.)

S.No	Place of the Centre	2023-2024		2022-2023	
		Recurring Expenditure	Amount Transferred from Grant-in-Aid A/c & income to meet PLSC exps.	Recurring Expenditure	Amount Transferred from Grant-in-Aid A/c to meet PLSC exps.
1.	TANDA	14,33,310	13,03,400	13,97,609	12,90,400
2.	MEERUT	23,10,214	17,33,000	23,65,882	19,24,165
3.	KANPUR	19,88,341	19,59,055	21,10,804	20,98,235
4.	LUDHIANA	18,10,423	15,58,300	16,73,816	15,82,900
5.	GORAKHPUR	13,92,324	12,80,549	13,02,927	12,00,000
6.	PANIPAT	20,41,172	17,96,000	19,26,816	17,60,000
7.	BHILWARA	23,45,897	17,12,983	24,82,678	17,34,000
8.	VARANASI	20,45,583	19,00,938	20,54,256	19,91,230
9.	Chief Minister Handloom & Power Loom Training	3,18,600	3,18,600	-	-
TOTAL :		1,56,85,864	1,35,62,825*	1,53,14,788	1,35,80,930

*Includes Rs. 10,44,225/- in respect of PLSC Income.

SCHEDULE – 14

(Amount in Rs.)

EXPENDITURE ON GENERAL ADMINISTRATION	Current Year	Previous Year
Electricity Charges & DG Running	35,00,463	33,63,973
Traveling & Conveyance	11,56,124	11,00,604
ITMA 2023	8,54,746	
Building Maintenance & Housekeeping	9,49,718	9,67,097
Repairs Plant & Machinery, Computer, Building & others	27,00,471	22,67,575
Legal & Professional Exps.	13,69,966	8,05,840
NABL Calliberation Exps.	10,42,600	7,70,303
Security Arrangement	18,51,651	19,25,098
Books, Periodicals & Publication	4,76,534	3,35,331
Advertisement exps	15,39,187	11,25,456
Insurance	4,06,150	4,05,134
Cultivation / Horticulture Exps.	8,51,602	8,01,379
Postage & Telephone Exps.	7,73,535	7,10,608
Car Running & Maintenance	3,65,061	3,91,931
Printing & Stationery	8,98,124	7,91,959
Chemicals, Glassware , Spares Stores Consumed	16,71,652	11,90,558
Training & Seminar Exps.	4,86,701	95,888
Meeting Exps.	3,30,390	2,94,863
In House Project Exps.	10,63,248	50,89,533
Amount Write Off.	15,76,577	85,500
Audit fees	1,00,000	80,000
Testing lab exps., - Panipat, Bhilwara & Meerut	73,672	86,342
Previous Year Exps.	1,73,671	1,23,716
Other Expenses	16,43,091	11,60,178
Rates & Taxes	25,38,773	23,08,140
Total :	2,83,93,707	2,62,77,006

SCHEDULE – 15

Significant Accounting Policies and Notes to the Accounts

A. BASIS OF ACCOUNTING

The Financial Statements are prepared on Historical cost convention and on Mercantile Accounting system.

B. FIXED ASSET

Depreciated Fixed Assets are stated at cost, which include expenditure incurred on acquisition of assets concerned such as freight, duties, Taxes and incidental expenses up to the installation of assets. Assets acquired in Power Loom Service Centre's, CAD, Sponsored Projects and Testing Labs are stated at Revalued amount.

C. DEPRECIATION

During the year the Society has charged depreciation on fixed assets on Written down Value method as per the rates & manner prescribed in the Income Tax Act 1961.

D. INVESTMENT

Investments are stated at cost.

E. FOREIGN CURRENCY TRANSACTION

Transactions in Foreign Currency are accounted at the exchange rate prevailing on the date of the transaction.

F. REVENUE RECOGNITION

(a) All incomes are accounted for on accrual basis except for membership subscription which has taken on receipt basis.

(b) Government grants are accounted on the basis of sanction letter from the government department.

NOTES ON ACCOUNTS:

1. Figures in Balance Sheet are rounded off to the nearest rupee.

Previous year figures have been regrouped or rearranged wherever considered necessary to make them comparable with those of Current year.

AUDITOR's REMUNERATION

	CURRENT YEAR	PREVIOUS YEAR
Audit Fees	1,00,000	80,000.00



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