



ANNUAL REPORT 2019-20

NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION

(Linked to Ministry of Textiles, Govt. of India)

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CONTENTS

PAGE No.

1.	Message from the Chairman, Council of Administration	1
2.	From the Director General's Desk	3
3.	NITRA's Services to its Clients - At a Glance	8
4.	Organisation : Financial Performance and Membership	9
5.	Research & Development Activities	10
6.	Consultancy Services	28
7.	Testing Services	29
8.	Training Services	34
9.	Library and Information Services	37
10.	Important Events and Happenings during 2019-20	39
11.	Powerloom Service Centres	43
12.	Annexes:	
1)	Members of the Council of Administration	45
2)	Members of the Finance & Administrative Sub-Committee	50
3)	Members of the Research Advisory Committee	53
4)	List of Member Units	57
5)	Staff Members	60
6)	Research Papers Published and Presented	68
7)	Training Programs, Workshops and Seminars Conducted	72
8)	Consultancies Provided	74
9)	Staff Participation in HRD Programs	76
10)	Additional Services to NITRA Members	79
11)	Journals Subscribed by NITRA Library	80
12)	Journals Received on Complementary Basis	81
13)	Placement of Students of NITRA Technical Campus	82
13.	Auditor's Report & Balance Sheet	86

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. Furthermore, year-on-year the organization is growing at a steady pace. NITRA's esteemed patrons, valued clientele and efficient workforce deserve immense credibility for this.

Friends, I feel happy to inform that during the reported period NITRA scientists have carried out 10 R&D projects out of which 4 is completed and 6 in the pipeline. In addition to this, 4 need-based projects are also proposed to various GoI agencies. As many as 30 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, and manpower training have also been quite satisfactory during the last one year. In addition to this, the CoE for Protective Textiles & Automotive Textiles at NITRA is doing excellently in developing niche products using innovative technologies. The highly sophisticated Focus Incubation Center (FIC) at our premises is also fully operational now for providing technical support to budding entrepreneurs interested in making innovative technical textiles products.

It is also worth mentioning that during this fiscal NITRA has made its foray into Third Party Inspection (TPI) in a big way and is being accredited by NABCB for ISO 17020. A large number of agencies including paramilitary forces have hired highly-skilled NITRA technocrats for providing quality inspection services. We are also proud that during this period, Bureau of Indian Standards (BIS) has empanelled NITRA as one of the BIS recognized laboratories under GROUP-2 category - a lab of national repute and eminence, facilities of which is being utilized by BIS. NITRA has also modernized the lab with required equipment to test PPE Kits and Masks which has become now necessity due to Covid-19 pandemic. NITRA is already testing PPE Kits from HLL Lifecare Ltd.

Taking into consideration safety of environment, NITRA plans to further modernize their lab in due course for getting ZDHC Certification. After getting this certification NITRA plans to approach Govts. of NCR, Delhi NGT and Ministry of Environment to nominate NITRA as the main testing lab for discharged water and flue gases from factories.

NITRA's academic wing **NITRA Technical Campus**, established in 2011-12, has done well during the reported period and successfully conducting two 4-year B. Tech programs on Textile Technology and Computer Science & Engineering. The institute is affiliated to AKTU, Lucknow and approved by AICTE. This is also accredited by the Engineering Council of India and is an ISO 9001 facility. The first four batches of students have passed out with excellent results and are placed in renowned textiles and IT companies pan India. We are also happy that for the third consecutive year our students featured in university top ten for textile category and won gold and silver medals. To top it all, this year four students have clinched merit scholarship and certificate by competing a 'Talent Incentive Scheme' launched by AKTU.

Before concluding, I thank the textile and garment industries, Ministry of Textiles, Government of India, 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 better in the coming days.

S. K. KAPOOR

FROM THE DIRECTOR GENERAL'S DESK



During the financial year 2019-20, NITRA has done commendable work to support the Indian textiles & garment industry. Following are the highlights:

Activities at a glance (2019-20)

R&D		Clientele	
Projects completed	04	Clients served	1241
Projects ongoing	06	New clients inducted	225
Research papers	30	PLSCs	
Consultancy services		Technical assistance/consultancies	41
Technical consultancies	152	Design developed	41
Technical opinions & defect analysis	38	Liaison visits/Survey carried out (No. of units covered)	3140
Testing services		Sample tested	2693
Quality evaluation in NITRA labs	8019	Persons trained	585
Training services		Exhibitions/seminars organized	62
Manpower training programs	24	Clients served	520
Personnel trained by NITRA	586	New clients added	55

1. Chemical & Quality Evaluation Division

Govt. Sponsored Completed Projects:

- Development of protective work wear for cement porters
- Development of multi layered flame & thermal resistant fabric for fire-fighter clothing

Govt. Agencies Sponsored On-going Projects:

- New approaches to reduce water consumption in textile wet processing
- Development of value added products from different fibres in Himalayan region along with Mechanical Processing (Spg. & Wvg.) Division
- Development of air cleaner home textiles to reduce indoor air pollution

Industry Sponsored Completed Project:

- Development of improved version of body protector used for riots control

Industry Sponsored On-going Projects:

- Development of coat combat disruptive
- Development of technical textile products in the field of feminine hygiene

Proposed Projects submitted to Govt. Agencies:

- Development of Stab, Impact and Puncture Testing Instrument for Body Protector (submitted to DST, Govt. of India)
- To initiate a process for making rural women economically self-reliant by engaging them to convert agriculture bio mass waste in to useful products (submitted to DST, Govt. of India)
- To develop protective work-wear for sewage and sanitary workers (submitted to DST, Govt. of India)
- Development of protective work wear for fire safety of women working in fire hazard areas such as kitchen, match sticks manufacturing, brick firing & fire work industry (submitted to DST, Govt. of India)

Publications: 22 (1 each jointly with CQE, PTTD and Marketing & Publications)

Technical Consultancy: 78 (including with other division)

Training Programs: 04 (including with other division)

2. Engineering Division

Publications: 02 (1 jointly with CQE)

Technical Consultancy: 18

Training Program: 01

3. Environmental Engineering Division

Ongoing Project:

- Setting up of Common Effluent Treatment Plant (CETP) - 150 KLD at Ajrakhpur, Bhuj (Sponsored by Ministry of Textiles, Govt. of India)

Technical Consultancy: 07

4. Garment Centre

Completed Project:

- Development of an Android-based Mobile Application “APPRISE” for Garment Industry for Instant Information Access and Quick Decision Making

Technical Consultancy: 03 (including with other division)

Training Programs: 15 (including with other division)

5. Marketing & Publication Division

Publications: 02 (1 jointly with CQE)

Technical Consultancy: 01 (with other division)

Training Programs: 08 (including with other division)

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

Ongoing Project:

- Development of value added product from different fibres in Himalayan region (along with Chemical & Quality Evaluation Division)

Publications: 03

Technical Consultancy: 111 (including with other division)

Training Programs: 08 (including with other division)

7. Physics & Quality Evaluation Division

Technical Consultancy: 102 (including with other division)

Training Program: 01 (including with other division)

8. Polymer & Technical Textile Division

Publication: 01 (including with other division)

Technical Consultancy: 04 (including with other division)

9. Software Development Centre

Publications: 03

Training Program: 01

Quality Evaluation at NITRA Laboratories

Altogether 8,019 samples were tested at NITRA's NABL accredited laboratories during 2019-20. Following is the laboratory-wise break up for the same:

Physical Quality Evaluation Laboratory	-	3420 samples
Chemical Quality Evaluation Laboratory	}	3231 samples
Heat & Flame Testing Laboratory		
Polymer & Technical Textiles Laboratory	-	1096 samples
Environment Laboratory & Eco Laboratory	-	272 samples

In addition to above, 38 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, 30 research & technical papers are published/presented in technical journals and forums. One booklet “Latest Developments in Textile Machines – Review of ITMA 2019” has been published during the year. (For details refer chapter Library and Information Services).

Memorandum of Understanding Signed

- NITRA has signed MoU on August 29, 2019 with one of the textile units for the development of technical textile products in the field of feminine hygiene.
- NITRA has also signed MoU on July 23, 2019 with BIS for collaboration in the areas of Standardization and Conformity Assessment.

Technology Transfer

- Technology on “Development of stab and impact resistant material for anti riots body protector” was transferred to M/s. Applied Systems.
- Technology of development of “Multi Layered Flame & Thermal Resistance Fabric for Fire Fighter Clothing” was transferred to two of the leading textile manufacturing units i.e. Arvind Ltd. and Aeronav Industrial Safety Appliances.

Inspection Services Accreditation

NITRA inspection services got accredited against ISO/IEC 17020:2012 on February 28, 2020 by NABCB, New Delhi.

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).

Patents

Following patents were filed during the year:

- Patent Application No. 201911015524 dt. 18.04.2019 for “A water saving hank dyeing machine for dyeing textile yarns”
- Patent Application No. 201911016309 dt. 24.04.2019 for “A stretchable composite embroidery thread”
- Patent Application No. 201911016310 dt. 24.04.2019 for “A compressed air monitoring system to optimize energy consumption in a textile mill”
- Patent Application No. 201911030134 dt. 25.07.2019 for “Method of preparing flexible impact and stab resistance material”

Important Events and Happenings during 2019-20*

- Senior Scientists from NITRA visit ITMA Fair at Barcelona, Spain
- NITRA releases booklet “Latest Developments in Textile Machines – Review of ITMA 2019”
- Mr. Amino Bello Masari “His Excellency the Governor of Katsina State of Nigeria” along with a 16 member delegation visits NITRA
- NITRA participates at Technotex 2019, Mumbai
- Vice Chairman, NITRA and MD, Zonac Knitting Machines Pvt. Ltd. visits NITRA stall at Technotex 2019, Mumbai
- NITRA signs MoU with Kay Tent at Technotex 2019, Mumbai
- MD, Tarasafe International Pvt. Ltd., visits NITRA stall at Technotex 2019, Mumbai
- Vice President & Unit Head - Ginni Filament Ltd. delivers a guest lecture on Non-Woven Textiles
- NITRA observes 16th Convocation cum Award Ceremony
- NITRA officers awarded certificate by Bureau of Energy Efficiency (BEE)
- Divisional Commissioner, Leh (Ladakh) visits NITRA
- NITRA organizes Research Advisory Committee Meeting
- Bureau of Indian Standard (BIS) nominates DG NITRA as Chairman of its Textiles Division Council
- DG NITRA chairs the session at Textiles Division Council, BIS
- BIS recognizes NITRA labs
- NITRA signs MoU with BIS for collaboration in the areas of Standardization and Conformity Assessment
- NITRA Technical Campus (NTC) students participate in Art of Living Program
- Six NITRA Technical Campus students secure position among top 10 university rankers
- Parichaya – The Fresher’s Party 2019
- NITRA Technical Campus (NTC) students participate in SMART TEXTILE HACKATHON – 2019
- NITRA Technical Campus hosts Intra-college debate competition My Voice 2020
- AKTU Honours NITRA Technical Campus Students

**For details please refer chapter Important Events and Happenings during 2019-20.*

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 2019-20.

Total clients served	: 1241
New Clients added	: 225

Approx. 23% of the clients at NITRA have availed services 5 times or more during the year.

- **Units availed services more than 100 times**

Unit	No. of Services
Arihant Spinning Mills, Malerkotla	127
Tuv Sud South Asia Pvt. Ltd., Gurgaon	121

- **Units availed services more than 50 and less than or up to 100 times**

Unit	No. of Services
G.M. Trading Co., Haridwar	89
Ordnance Equipment Factory, Kanpur	66
Guruparv Enterprises, New Delhi	64
Mahavir Spinfab (P) Ltd., Kanpur	52

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

Unit	No. of Services
Ordnance Clothing Factory, Shahjahanpur	49
Sunil Industries Limited, Mumbai	49
Uniproducs India Limited, Rewari	49
Zonac Knitting Machines Pvt. Ltd., Greater Noida	46
Derpa Industrial Polymers Pvt. Ltd., Ghaziabad	45
K.K.K. Mills, Ludhiana	42
Bhasin Industries Ltd., Ludhiana	39
Pilkhuwa Water Proofing Co. Pvt. Ltd., Ghaziabad	39
U.S. Industries, Delhi	38

- **Total No. of services availed by clients at NITRA**

Testing	3177
Consultancy/ Training etc.	221
Total Services availed	3398

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.130 lacs towards recurring expenditure. NITRA have received grant of Rs.122 lacs from Office of the Textile Commissioner, Mumbai for continuing the activities of Power Loom Service Centres at Tanda, Meerut, Ludhiana, Kanpur, Gorakhpur, Panipat, Bhilwara & Varanasi.

NITRA received Rs.14.60 lacs grant for a project namely Setting up of Common Effluent Treatment Plant at Ajrakhpur, Bhuj, Gujarat from Handicraft Mega Cluster Mission, New Delhi.

Council of Administration

The management of the association is entrusted to the Governing Council. At the 43rd Annual General Meeting of the Association held on 21st September 2019, 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 Dec. 14, 2019 at NITRA, Ghaziabad. 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 2020, 132 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 2019-20, NITRA worked on ten projects. Out of which four have been successfully completed during the period whilst work is in progress for the six projects.

Work done in the area of R&D during the year 2019-2020 is categorized as below:

1. GOVERNMENT SPONSORED PROJECTS

1.1 Completed projects

- (i) **Project title** : Development of protective work wear for cement porters (Sponsored by Ministry of Textiles, Govt. of India)
- Objectives** :
- To determine the magnitude of occupational health hazards among cement porters
 - To design and standardize dustproof and comfortable material such as gloves, socks and workwear for cement porters which can suit the climatic and working conditions
 - To evaluate effectiveness of the developed material in actual practice and standardization of test methods
- Research Outcome** :
- Fabric samples were developed after intensive survey of cement user/ manufacturers
 - Fabric dust proof property analyzer has been fabricated and a patent has been filed
 - Cement work wear is developed and commercialized
 - Project is completed and technology has been transferred to M/s. Arvind Ltd., Ahmedabad.
 - Brief details of experimental work carried out are given here:

Under "Development of protective work wear for cement porters" project, four fabric samples coded as 'A', 'B', 'C', and 'D' were developed and tested for various properties including cement dust resistance property. The results of this study are shown in the Table-1. Out of four fabric samples, Sample C found to be better than others as it has low lower mass, higher tear and tensile strength, lower UV exposure effect, better water vapour permeability than others. Other properties like air permeability, acid and alkali resistant of all the samples were similar. The dust resistance property is shown in the Fig.-1. This test is

carried out on NITRA's developed Fabric dust resistance tester (Fig.2). It is explicit from the figure that dust resistance property of Sample-C is better than other three samples at different air jet pressure.

Table 1: Results of various properties

Property	Sample A	Sample B	Sample C	Sample D
Mass, g/m ²	185	182	135	182
Fabric Thickness (5 kPa), mm	0.40	0.44	0.38	0.32
Tear strength, Newton Warp wise Weft wise	52 48	56 49	63 53	19.5 18.5
Tensile Strength, Newton Warp wise Weft wise	428.9 527.8	431.8 551.2	653 478	563 435
Tensile strength after UV exposure-60 hrs, Newton Warp wise Weft wise	380.7 269.3	389.5 242.2	547 283	221 202
Water Vapour Permeability, mg/cm ² /hour	5.16	4.58	5.74	5.53
Air Permeability, cc/sec/cm ²	0	0	0	0
Taber Abrasion Resistance, Load: 250 grams, CS- 10, No. of cycles till the first thread breaks	100	300	≥1000	≥1000
Chemical resistance test i) NaOH (10% Con.) - Penetration, % - Repellency, % ii) H ₂ SO ₄ (30% Con.) - Penetration, % - Repellency, %	0 92.7 0 97.3	0 96.6 0 93.5	0 92 0 96	0 96 0 94

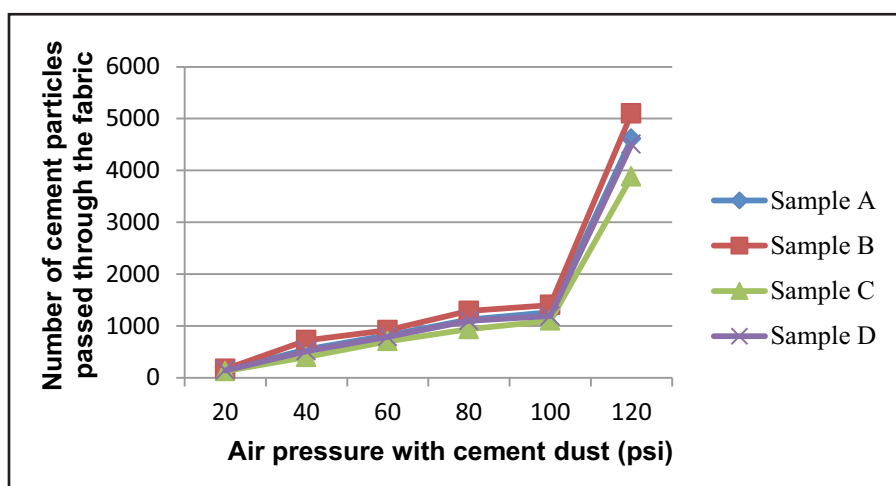


Fig. 1 : Dust resistance property of fabric samples



Fig.2: NITRA - Fabric dust resistance tester
(Indian Patent application no. 201711002704)

- (ii) **Project title** : Development of multi layered flame & thermal resistant fabric for fire-fighter clothing (Sponsored by Ministry of Textiles, Govt. of India)
- Objectives** :
- To study existing fire fighter clothing/suit being used in India for their suitability related to safety and other physiochemical properties
 - To study fire fighter/clothing suit used in developed country for their safety and physiochemical properties
 - To identify gaps in the existing fire fighter suits being used in Indian fire fighters in comparison to fire fighter suits of developed country
 - Development of multilayered fabrics using various weaves structure, fibres composition and finishing applications in the manufacturing of fibre fighter suit

- To evaluate multilayered fabrics for its performance for safety and other physiochemical properties as per standard
- Development of fire fighter clothing/suit

Research Outcome :

- Fire fighter suits were procured and their physiochemical properties were evaluated
Gaps were identified
- Multilayered fabric for fire fighter suit is developed
- Evaluation of developed material is carried out
- Provisional patent has been filed for thermal layer
- Fire fighter suit is fabricated
- Product is completed and technology has been transferred to M/s. Arvind Ltd. and M/s. Aeronav Industrial Safety Appliances
- Brief details of experimental work carried out are given here:

NITRA has developed fire fighter suit (Fig.3) under this project. A new type of thermal layer (Patent application no. 201711010197 dated 23.03.2017) was used for the development of this fire fighter suit. The developed fire fighter suit meets the requirements of EN 469 and IS 16890 as shown in the following Table-2.

Table 2: Performance of fire fighter suit developed by NITRA

S.No.	Properties	Requirement	Results	Observation
1.	Flame resistance as per IS 15758 :Protection against heat & flame- Method of test for limited flame spread	i) No Specimen shall have flaming to top or either side edge ii) No specimen shall have hole formation in any layer iii) No specimen shall have flaming or molten debris iv) The mean value of after flame time shall be ≤ 2 sec. v) The mean value of afterglow time shall be ≤ 2 sec.	i) Nil ii) Nil iii)No flaming/ molten debris iv) Nil v) Nil	Pass
2.	Heat Transfer (Flame Exposure) as per IS 15758 (Part 1)	Heat transmission index (I_Q) of $I_{Q.24} \geq 13$ $(I_{Q.24} - I_{Q.12}) \geq 4$	T12= 8.2 T24=13.7 T24-T12 = 5.5	Pass

S.No.	Properties	Requirement	Results	Observation
3.	Heat Transfer (Radiant Exposure) as per IS 15758 (Part 2) Heat flux: 40 kW/m ²	i) Mean Heat Transmission Index (HTI ₂₄) t ₂ ≥ 22sec ii) (t ₂ – t ₁)HTI ₂₄ -HTI ₁₂ ≥ 6sec	i) (HTI ₂₄) t ₂ = 24.3sec HTI ₁₂ = 15.3 sec ii) (t ₂ – t ₁) or HTI ₂₄ -HTI ₁₂ = 9 sec Qc = 7.392 sec TF= 0.184	Pass
4.	Residual Strength of material when exposed to 10 kW/m ² (IS 15758 part-2) radiant heat As per IS 1969 (Part 1)	Tensile strength ≥ 450 N	>450 N in both direction	Pass
5.	Heat Resistance as per ISO 17493 at temperature 180±5°C using hot air circulating oven	shall not melt, drip, separate, or ignite, & shall not shrink more than 5% in both directions	Shrinkage: Weft wise: 0.8% Warp wise: 0% Melting, dripping, Ignition: No	Pass
6.	Tensile strength as per IS 1969 Part 1	Tensile strength ≥ 450 N	Warp wise: 1056 N Weft wise: 987 N	Pass
7.	IS 6489 Tear strength (Outer Layer)	Tensile strength ≥ 25 N	Warp wise: 38.6 Weft wise: 44.9	Pass
8.	Surface wetting ISO 4920 Spray test for Outer material	Spray rating ≥ 4	5	Pass
9.	ISO 5077 Cleaning- shrinkage resistance	Dimension Change ≤ 3%	Weft wise : 0.6% Warp wise : 1.0%	Pass
10.	ISO 6530:2005 IS 15758 Liquid – Chemical Penetration Resistance Protection against liquid chemicals -Resistance of material to penetration by liquids	Shall have greater than 80% run-off & no penetration to the innermost surface i.e. Penetration= 0% & Repellency > 80% Resistance to Penetration: 1. 40% NaOH 2. 36% HCL 3. 30 % Sulphuric acid 4. White spirit	No penetration Repellency > 80%	Pass
11.	Water-penetration resistance as per ISO 811 at 7kPa Water Penetration Resistance for 5 min	Shall not show appearance of water drops	No water penetration	Pass
12.	ISO 11092 Measurement of thermal & water -vapor resistance under steady-state conditions (sweating guarded-hotplate test)	Ret ≤ 30m ² Pa/W	27.7m ² Pa/W	Pass



Fig. 3: Fire fighter suit developed by NITRA

1.2 Ongoing projects

- (i) **Project title** : New Approaches to Reduce Water Consumption in Textile Wet Processing (Sponsored by Ministry of Textiles, Govt. of India)
- Objectives** :
- To conduct preliminary trials to test suitability for various dyes, used for textile material
 - Designing and fabrication of equipment for dyeing and standardization
 - Conducting dyeing trial on various types of textile materials

- To compare dyed material out of new approach and conventional dyeing method in terms of quality and consumption of water

Progress of work :

- Water conservation/consumption study has been carried out in various mills
- Designing work of equipment for dyeing is in progress
- Various approaches of dyeing are being tested to conserve water
- Brief of approaches adopted are given below:

Approach-1: Exploring Possibilities of Dyeing Cotton Hank Using Soft Flow Dyeing Machine

Cotton dyeing is one of the most water consuming processes in dyeing industry; major load on ETP is only due to cotton treatment. Conventional cabinet Hank dyeing machine consume water in the range of 1:15 to 1:20 MLR. The salt, soda and other chemicals auxiliaries are used as per the MLR of machine. If MLR is high, the consumption of chemicals will also be on higher side. It was thought to use soft flow dyeing machine for dyeing cotton hank so the MLR can be reduce to 1:6 to 1:10. It will not only reduce consumption of water but also reduce chemical auxiliaries consumption and load on ETP. Also provide an option to the dyer having soft flow dyeing machine to dye yarn in hank form. Some of the dyeing trials taken using soft flow dyeing machine to dye cotton yarn in hank form are given below:

Table 3 : Result of some of the in table 3 Dyeing trial :

Trial	Material to liquor ratio	Total water consumption (liter/kg)	Observation
Trial 1	1:15	161	Even shade, high entanglement
Trial 2	1:10	107	Even shade, high entanglement
Trial 3	1:8	88.5	Achieved even dyeing
Trial 4	1:7	77.5	Due to poor liquor circulation dyeing was uneven, entanglement

This study shows (Trial 3) that cotton hank can be dyed in soft flow dyeing machine using 1:8 MLR. Shown in Fig. 4 and Fig. 5 below :



Fig. 4: Soft flow dyeing machine used for cotton hank dyeing.



Fig. 5: Dyed Cotton hanks

Approach-2: Dyeing Cotton Fabric in Solid Shade Using Disperse Dye

To dye cotton fabric, reactive dye is one of the best suitable methods. It also gives good fastness properties as required. For cotton dyeing with reactive dye requires 5 to 6 washes after dyeing to remove the unfixed dye. Due to high colour discharge and chemical in effluent it increases the load on ETP and cost of treatment. In this approach we have tried to develop a solid shade using disperse dye on cotton fabric.

In disperse dyeing the amount of color and chemical in effluent is comparatively less than reactive dye. It also saves time during dyeing and require less number of washes to remove unfix dye. The lab trials results are shown in Fig. 6 below :



Fig. 6 : Cotton Fabrics dyed in solid shades using disperse dye

Approach-3: Creating Denim Effect using Disperse Dye on Cotton Fabric

Denim industry is one of the most water consuming industry. Mostly vat and sulphur dyes are used to produce denim fabric. It has a limitation to produce different shades. In this approach we use **Pad-Cure-Dyeing** method to Produce denim effect using **Disperse dye** on different twill fabric. Result are shown in Fig. 7 below:



Fig. 7 : Cotton Fabrics having denim effect created by using disperse dye

(ii) **Project title** : Development of value added product from different Fibres in Himalayan Region (Sponsored by Ministry of Textiles, Govt. of India)

Objectives :

- To standardize a method for extraction of fibers from Pine Needles, Indian Flax, Nettle etc.
- Development of machines for extraction of fibres
- To produce yarn with pure fibres and blends by optimizing mechanical parameters
- To develop various kinds of fabric utilizing those yarns
- To develop final value added products / home textile using these fabrics

Progress of work :

- Cultivation of flax fibres has been done
- Extraction of fibre from Pine leaves has been standardized
- Machinery manufacturer has been identified and purchase process has been completed
- A patent has been filed regarding extraction of textile grade fibre from pine needles
- Products have been developed (Refer Fig. 8)



Fig. 8 : Some of the value added products developed

Background:

High level of poverty in hills persists due to low employment opportunities. Average monthly income of agricultural households in Uttarakhand is around Rs.4,700/- per month as compared to around Rs.8,800/- per month in neighboring Himachal Pradesh.

Considerable migration of people from hills to plains in search of livelihood affecting development of hills. As per report of Economic Times (06.05.2018) approx 4 lakh people have migrated in past 10 years from their native villages of Uttarakhand. Problem is that opportunities available in this region is not exploited.

The fact is that Himalayan region has been bestowed with enormous nature's fibre wealth, including pine needles. These have been used by the locals for their needs. These natural fibres can be exploited to improve the livelihood of hill people. But on the other hand the most negative and damaging impact is that many times, pine needles (perul), lying in the Himalayan region in abundance, catch fire and become highly

combustible after these get dry. And this leads to a forest fire causing huge losses to the people living in the region. So its better to exploit the use of natural fibres to bring the happiness to the hill people by upbringing their livelihood and earnings. Considering this need, NITRA got involved in development of value added products using the fibres extracted from Pine needles and from different other fibrous plants, which are available or can be grown in Himalayan region such as Ramie (*Boehmeria nivea*), Flax (*Linum usitatissimum*) and Hemp (*Cannabis sativa*), pine needle etc. It has been observed that the products developed from these fibres have very high domestic and export demand. Indigenous flax fibres have very good probability of replacing flax fibres which are imported from European countries. Huge demand of high value garments produced from flax fibres can be a boost for the local people of Himalayan region.

Experiments were carried out for exploring the possibilities of using natural fibres abundantly available in Himalayan region. Brief details of experiments are given below:

Experimental work:

The pine needles were collected from the ground of Almora, Uttarakhand and neighbouring areas where Pine forests are abundantly available. Those needles were brought to NITRA, Ghaziabad and extraction of fibres was attempted. Various chemical combinations were tried to get the best textile grade fibres. Sodium hydroxide (NaOH) solution was used for preliminary treatment and then Aluminium chloride (AlCl_3) solution was used for final treatment. After a number of trials, optimum time, temperature and concentration(gpl) were finalised. Then the fibres were extracted by mechanically rubbing the treated leaves and dried.

For producing Indian Flax proper seeds were required. It was observed that Central Research Institute for Jute & Allied Fibres (CRIJAF) under ICAR had undertaken some trials and they have developed a variety of JRF2 which gives good result in Indian atmosphere. But large scale trials were not been taken for commercialization. NITRA procured seeds from them and planted in around 7 acres of land during 2017-18. Five acres of land was at G.B. Pant University of Agriculture & Technology, Pantnagar, Uttarakhand and around 2 acres of land was at NITRA, Ghaziabad. The sowing time was November end to beginning December 2017 and the plants were harvested during April, 2018. Fibres were extracted after retting and scutching was done.

Results & Discussion:

The properties of the extracted pine needle fibres were assessed. These are shown in Table-4 "Physical properties of Pine needle fibres". As the fibres have low tenacity value it was blended with cotton fibre and yarns were spun. The SEM photographs of the cross section of the pine needle fibres and longitudinal structure have been shown in Fig.9 to Fig.12. Both Fig.9 and Fig.10 show the cross-sectional view of pine needle fibres at different magnifications. The figures show a hollow structure which is different from conventional natural fibres used in common. The Fig.11 and Fig.12 show the longitudinal view of pine needle fibres which are not fully cylindrical and somehow looks rough. It was observed that it has high moisture regain value (around 12%). It is expected that this hollow structure will result in products with high thermal resistance value and good water absorbency.

Table 4: Physical Properties of Pine needle fibres

Parameters	Pine needles
Tenacity (g/den)	1.10
Min.	0.32
Max.	3.63
Average	1.10
CV%	66.80
Elongation%	5.94
Min.	0.80
Max.	10.10
Average	5.94
CV%	41.25
Count (Denier/Ne)	87.69/60.61
Bundle strength (g/tex)	5.64
Elongation%	6.9

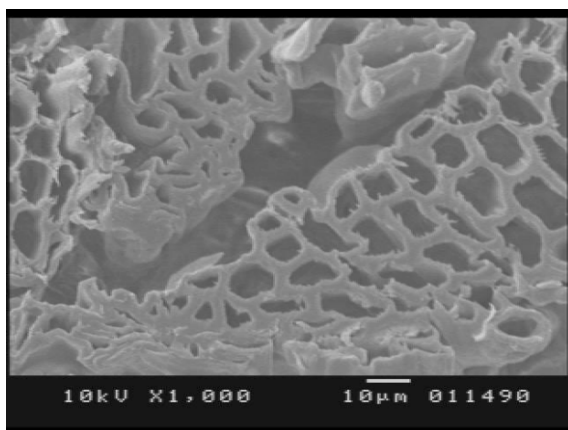


Fig. - 9

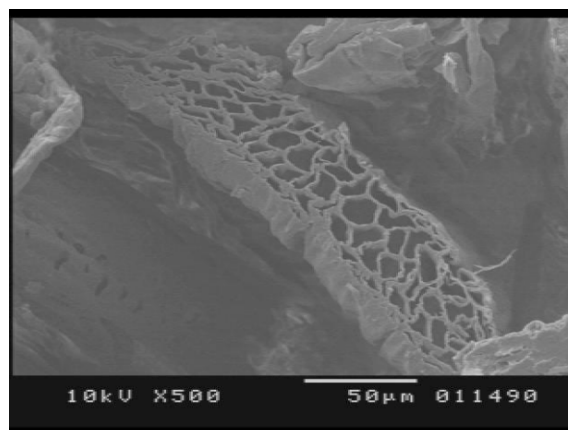


Fig. - 10

Fig.9 and Fig.10 show the cross-sectional view of pine needle fibres at different magnifications.

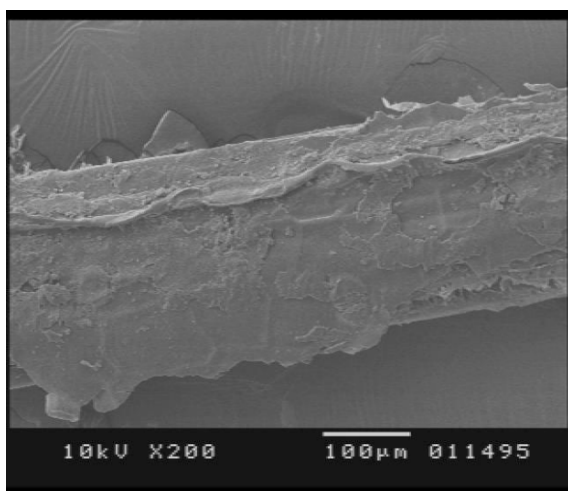


Fig. - 11

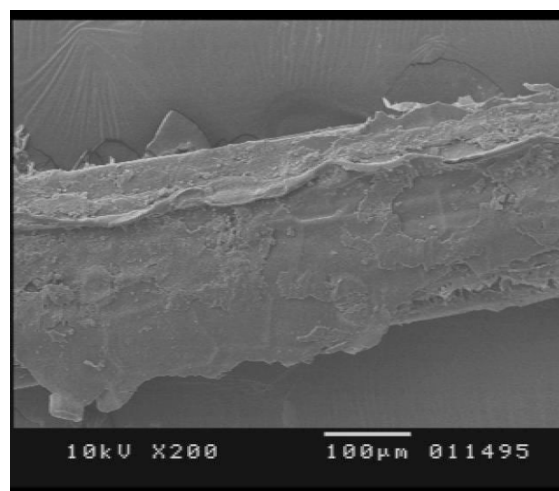


Fig. - 12

Fig.11 and Fig.12 show the longitudinal view of pine needle fibres.

The flax fibres, produced in India, were assessed for their various properties and the same were compared with the some of the European flax, sourced from a commercial fabric manufacturer. The SEM photographs of the flax fibres are shown in Fig. 13 to 16. Both Fig. 13 and Fig. 14 show the cross sectional view of the flax fibres and different magnification. It can be seen that the fibres are mature and similar to available fibres elsewhere. The Fig. 15 and Fig. 16 show the longitudinal view of Indigenous flax fibres at different magnifications. The properties are shown in Table-5. It can be seen from the Table that there is no significant difference in properties of these fibres. However, single fibre tenacity of Indian flax is lower than imported fibre, but the bundle strength of Indian fibre is higher. The appearance shows small difference and the Indian variety looks little harsher. This may be the reason for having higher bundle strength as compared to the bundle strength of imported fibres.

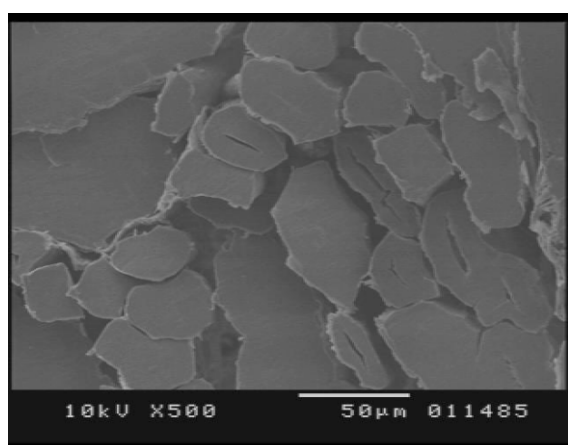


Fig. - 13

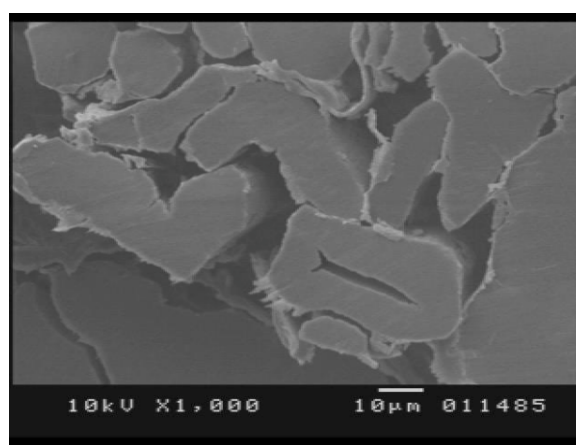


Fig. - 14

Fig.13 and Fig.14 show the cross sectional view of the flax fibres and different magnification.

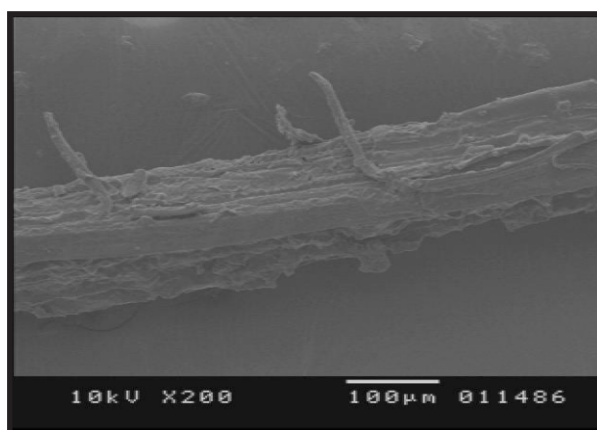


Figure - 15

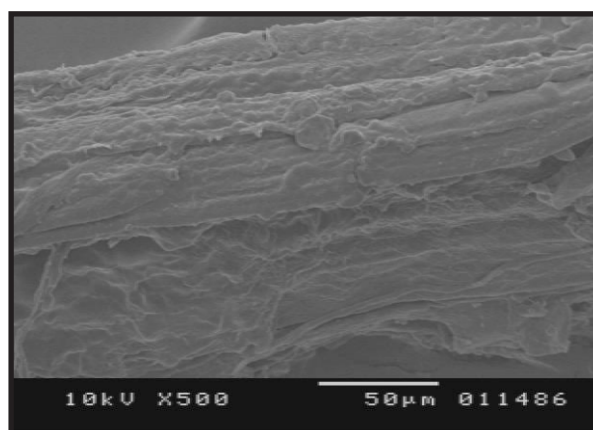


Figure - 16

Fig.15 and Fig.16 show the longitudinal view of Indigenous flax fibres at different magnifications.

Table 5: Physical Properties of Flax fibres

Parameters	Indian flax	Imported flax
Tenacity (g/den)	3.43	4.18
Min.	0.56	0.86
Max.	7.34	7.19
Average	3.43	4.18
CV%	48.77	42.05
Elongation%	2.11	2.26
Min.	0.70	0.70
Max.	4.50	4.40
Average	2.11	2.26
CV%	41.38	35.12
Count (Denier/Ne)	40.81/130.24	38.52/137.98
Bundle strength (g/tex)	63.49	40.82
Elongation%	0.61	0.75

The pine needle fibres (PNF) have been blended with cotton in different ratios and it was found difficult to spin yarn as the percentage of PNF fibres increases. Also it is observed that there is preferential loss of PNF in carding, resulting in less PNF percentage in resultant yarn. The yarns with 70:30 Cotton: PNF (actual in yarn stage) was successfully spun and yarns were sized and woven into fabrics using loom. The fabrics have unique look and it will be useful to produce home textiles and apparels.

The Indian flax fibres were processed in very small scale in a commercial company in Eastern India which is the leader in flax processing. The fabric produced in small scale was found as good as that of produced from imported flax fibre. This preliminary small scale trial showed that yield is much lower (to the extent of 50%) during spinning operation. This is due to improper extraction of fibre and scutching of Indian flax fibre. The scutching was done using crude manual method which needs to be improved to get better yield of yarn from fibre.

Findings of experiment:

The results show that there is a very good possibility of producing high value textile products using Pine needles which are abundantly available as plant waste and can help improve the economy of Himalayan region. Also it will help in reduction of forest fire which is the cause of huge loss of human and animal life.

Flax fibre produced in India can replace the use of imported flax fibre, thereby, reducing import and generating income for the people living in the Himalayan region.

(iii) Project title : Development of air cleaner home textiles to reduce Indoor air pollution (Sponsored by Ministry of Textiles, Govt. of India)

Objectives :

- Understanding nature of air pollutions in the indoor places using primary and secondary data and preparing research design
- To evaluate various finishing chemicals/materials having characteristics to absorb/reduce air pollution
- To select suitable fabrics and apply selected finishing chemicals using various techniques
- To evaluate finished fabrics for various physico-chemical and performance properties
- To take field trial of developed fabric in actual practice and modify, if required

Progress of work :

- Collecting details of air pollutants present in indoor air using primary and secondary data has been done
- Identification of finishing chemicals required to reduce indoor pollution are going on through available sources
- Procurement of some finishing chemicals has been done
- Application of various finishing chemicals on fabric has been done
- Preliminary testing has been done using different methods
- Fabrication of testing instrument for pollution absorbing textile has been completed (Refer Fig. 17)
- Air quality monitoring system has been procured
- Design of pollution absorption box (a part of instrument) finalized and ordered for fabrication

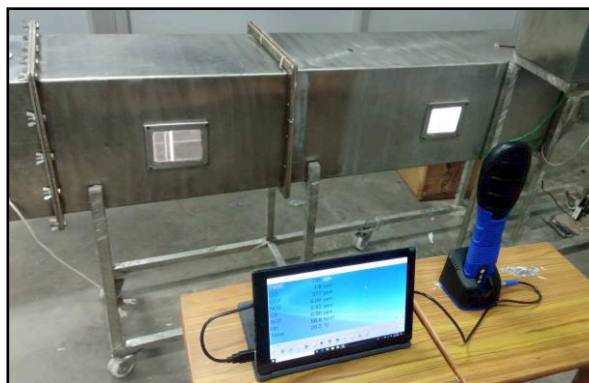


Fig. 17 : Fabricated Testing Instrument

(iv) **Project title** : Setting up of Common Effluent Treatment Plant (CETP) -150 KLD at Ajrakhpur, Bhuj (Sponsored by Ministry of Textiles, Govt. of India)

Objectives :

- Environment protection
- Ground water saving
- Energy conservation through reduction in ground water lifting
- To increase investment opportunity
- Creation of employment opportunities through overall business growth

Scope of work :

- Preparation of DPR with detailed BOQ
- Preparation of drawings, tendering & tender evaluation
- Supply, construction, installation of all civil units as per the design and drawing
- Supply & installation of electro-mechanical equipment as per the design and specification
- Piping work and Hydraulic testing
- Setting-up of testing lab
- Commissioning of CETP and performance analysis
- Training of manpower
- 6 months hand holding

The foundation stone of the Common Effluent Treatment Plant (CETP) was laid on March 18, 2017 by Union Textile Minister Smt. Smriti Zubin Irani.

Progress of work :

- Detailed project report (DPR) has been prepared, contract awarded through tendering
- Prepared environmental impact assessment report
- Environmental clearance (EC) obtained
- Consent to Establish (CTE) has been granted by the Gujarat Pollution Control Board
- Fabrication of MS tanks is partly completed
- Civil work is underway

2. IN-HOUSE PROJECT

2.1 Completed Project

(i) **Project title** : Development of an Android-based Mobile Application for garment industry for Instant Information Access and Quick Decision Making

Objectives : Indian Garment Industry, especially exports, mainly comprises of small and medium size manufacturing units. Most of SME's do not have any MIS such as ERP due to reasons such as very high cost, customization and maintenance issues due to which the top management is unable to access correct information at the right time. Keeping these factors in mind, NITRA planned to develop a Mobile App that would address most of these issues. The App will have following modules: (Shown in Fig. 18 given below)

- Fabric Re-conciliation
- Cutting
- Sewing
- Finishing
- Packing
- Cut to Pack Status



Fig. 18 : Modules of App

Research outcome :

- Survey was conducted in garment units to understand top management requirements and usefulness of the APP
- Visits to garment units were undertaken to understand prevailing methods of information gathering
- All the above-mentioned modules are now ready
- Internal testing of the App is in process
- After completing the internal testing, the APP will be launched commercially
- The App is named as “**APPRISE (Apparel Production Information System for Enterprises)**”
- Brief details of each module of the App are given below:

Fabric Re-conciliation: Fabric Reconciliation is an important activity in garment industry as fabric cost is almost 50-60 percent of total garment cost. The activity includes analysis of quantity of fabric purchased by a unit for each job order, quantity of fabric actually used according to order quantity, quantity of fabric left after shipment and how much fabric is lost as wastage in the process.

In the Fabric Reconciliation module of the App, we can see buyer-wise monthly Fabric reconciliation report for all job numbers. This App helps us to keep a check on fabric consumption as per planned and actual cutting average. It also gives us utilization percentage for each job number.

Cutting: In this module of the App, we can check the status of any order buyer wise/ style wise. All the details of a particular job order like fabric, color and cut quantity and balance to be cut can be verified easily. This will help the garment unit to do cutting room planning more efficiently so that input from cutting to sewing remains uninterrupted.

Sewing: Sewing means attachment of different parts of the cut panels together as per design. It is the most important process in garment manufacturing and generally involves highest number of manpower.

In this module of the App, one can check total pieces issued, total pieces received and balanced quantity for a particular job number, which will further help us to plan our production floor in better and effective manner.

Finishing: The App help us to check the current finishing status of every job number.

Packing: The App helps us to check the current packing status of every job number.

Cut to Pack Status: Under this section, one would be able to see the complete status of every order starting from cutting to packing.

The App is very user friendly and also has features like sharing, print and download and a very easy data input system. APRRISE provides a complete end-to-end solution to the user.

3. INDUSTRY SPONSORED PROJECTS

3.1 Completed Project:

- (i) Development of Improved version of body protector used for riots control

3.2 On-going Projects:

- (i) Development of coat combat disruptive
- (ii) Development of technical textile products in the field of feminine hygiene

4. PROPOSED PROJECTS

(i) **Project title** : Development of stab, impact and puncture testing instrument for body protector

Sponsoring Agency : Department of Science & Technology, Govt. of India

(ii) **Project title** : To initiate a process for making rural women economically self-reliance by engaging them to convert agriculture bio mass waste in to useful products

Sponsoring Agency : Department of Science & Technology, Govt. of India

(iii) **Project title** : To develop protective work-wear for sewage and sanitary workers

Sponsoring Agency : Department of Science & Technology, Govt. of India

(iv) **Project title** : Development of protective work wear for fire safety of women working in fire hazard areas such as kitchen, matchsticks manufacturing, brick firing & fire work industry

Sponsoring Agency : Department of Science & Technology, Govt. of India

CONSULTANCY SERVICES

Technical consultancy is 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 third party inspection, feasibility study, system certification, infrastructure set up, valuations, manpower rationalization, energy audits, water audit, inspection and product/process & design development etc.

Major areas of consultancy services offered during the period 2019-20 are given below:

Areas of Consultancies

- Machinery maintenance audit
- Third party inspection of blankets, T-shirts, Gabardine, Coat combat, Serge/BD Serge, Cotton Tape Newar, Wool comforter, Jersey, Thermal vest, Shorts, Coat parka, Angola shirtings, Poly carbonate shields, Ergonomically designed Back pack, Cloth disruptive polyester cotton, Cloth Gabardine disruptive, Woolen jersey, Jersey woolen ribbed, Terry Towel, Sleeping Bag, Half-sleeve round neck vest, Rain cape, Twill weave wool fabric serge, Twill weave wool fabric 50/50, Vest cotton, Under pant thermal, Cap comforter woolen uniform, Serge 50/50, Woolen blanket, Bag kit universal, Kit Bag, Plastic bottle, Water bottle with cover and Short sleeve vest etc.
- Development/improvement of systems and processes
- Infrastructure requirements for setting up of undergarment manufacturing unit
- Evaluation of assessment agencies for empanelment
- Energy audit
- Power factor and Power quality audit
- Diagnostic studies of CETP
- Upgradation of CETP
- Setting up of Common Effluent Treatment Plant (CETP)
- DPR for Upgradation of CETP
- Adequacy Report of ETP
- Performance Assessment of ETP

*Consultancy projects undertaken in the year 2019-20 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 six laboratories i.e. Physical lab, Chemical lab, Heat & Flame Testing lab, Polymer & Technical Textiles lab, Eco lab and Environment 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: 3420

In addition to this, around 100 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 Garments, Trousers, 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, Geo-textiles 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/Bias, 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 etc.

New Clients Added:

Shri Shyam Enterprises, Durg; MNIT, Allahabad; Chahal Enterprises, Ludhiana; RHT Fashion, Amritsar; Gian Chand Sushil Kumar & Sons, Ludhiana; Geosys India Infrastructure P. Ltd., Noida; Ashwin Khadi Gramoudyog Samiti, Modinagar; Rizwan Handloom, Shamli; Ibrahim Wool Trading Co., Shamli; ATC Global Logistics Pvt. Ltd., Mumbai; ALH Enterprises, Kishanganj; Home Trends, Panipat; Office of Commissioner of Custom, Tuticorin; Naresh Textiles, Sonapat; Jeet Narrow Fab., New Delhi; Panchal

Sewa Sansthan, Shaharanpur; Ugranarayan Khadi Gramoudyog Ashram, Darbhanga; AS Textile, Meerut; JL Chawla International, Karnal; Ajit Nath Enterprises, Ahmedabad; Hari Wire India Ltd., New Delhi; Right Wash Garment Processing, Delhi; Wild Lion Technologies Pvt. Ltd., New Delhi; Expo Combine, New Delhi; Pooja Enterprises, Delhi; Adinath Enterprises, Ahmedabad; Ocean Nonwovens P. Ltd., Jhajjar; Goel Textiles, Bhiwani; Dolphin Floats P. Ltd., Pune; Majoj Enterprises, Delhi; Zila Basic shiksha Adhikari, Bareilly; Kambal Factory (U.P. Khadi Gramoudyog), Bhadoi; Home Soul Textiles P. Ltd., Sonapat; Ambika Resham Khadi Silks, East Bardhwan; The Rajlakshmi Cotton Mills P. Ltd., Noida; J.K. Fabrics, Mumbai; Madhuwan, Durg; Eurofins Product Testing India Pvt. Ltd., Gurgaon; Prakash Motors, Ahmedabad; Hula Global Fashions P. Ltd., Noida; Ajiveena Exports Ltd., Bahadurgarh; Shingora Textile Ltd., Ludhiana; Gupta Threads Ltd., Samna, Patiala; DPI Exim Pvt. Ltd., Sonapat; AYM Syntex Limited, Silvassa; Govindam Textile Company, Ajmer; Hansmukh Infrastructure Technology India Pvt. Ltd., Sudama Nagar; Kaur Sain Spinners, Ludhiana; Stalwart Overseas, Gurgaon; Esspal International, Bhilwara; Gimatex Ind. P. Ltd., Ahmedabad; Harikrit Industries P. Ltd., Mumbai; Ganga Aerowools Ltd., Ludhiana; TBN Group, Delhi; Jyoti Green, Jalesar, Firozabad; Kashi Collection, Delhi; Fab King India International Trade P. Ltd., Delhi; Sukhjot Enterprises, Ambala Cantt.; Divya Jyoti Jagriti Sansthan, Delhi; Bangar Business Venture P. Ltd., Kanpur; R.K. Rayon P. Ltd., Ludhiana; A.S. Enterprises, Ghaziabad; Euro Safety Footwear (India) P. Ltd., Agra; Achilesh Enterprises, Delhi; Jindo Chemical Solutions P. Ltd., Chennai; Hansmukh Infrastructure & Technology Pvt. Ltd., New Delhi; Import and Export worldwide, Delhi; Airchroma India P. Ltd., Thane; Sumeet Knitwears, Ludhiana; Relco International, New Delhi; K.R. Sons, New Delhi; Strange Exports P. Ltd., Noida; Sabs Exports, Noida; Rajshree Fabrics, Kalamab; Kukreja Engineers, Panchkula; Singhai Enterprises, Odisha; Aadi Rishabh Military Suppliers, Nuapada; Kodel Uniquoters Pvt. Ltd., Morbi; Abhishek Textiles, Bangalore; SPS International, Delhi; Engineers & Traders, Aligarh; YCD Industries, Lalru.

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

No. of Commercial Samples Tested: 3231

In addition to this, around 200 R&D samples were also tested.

Type of Samples received:

CQE: Fibres, Yarns, Fabrics, Garments, Technical Textiles (Protech, Nonwoven, Automotive etc.), Dyes & Chemical Auxiliaries

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

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

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 & Crib test, Oxygen index, Smoke visibility test, Toxicity index, Fire resistance test, Methanamine table test, Hot metal nut test, Vertically oriented specimen etc.

New Clients Added in CQE and H&F Labs:

New Variety Decorators Pvt. Ltd., New Delhi; Deen Dayal & Sons, Pune; Lady Bamford Foundation, Jaipur; Rajshree Fabrics, Sirmour; Singhai Enterprises, Odisha; Jis Singh Anand & Sons, Dehradun; Doon Valley Knitting Mills, Dehradun; Process Controls (India), Roorkee; Belle Laboratory Pvt. Ltd., Shahdara; Sky Industry Ltd., Mumbai; Harris & Menum Chemicals Pvt. Ltd., Chennai; Siddhi Network Solution, Meerut; Gupta Fabrics, Delhi; Shiv Naresh Sports Pvt. Ltd., New Delhi; N.N. Industries, Kanpur; Nirmal Texprint Pvt. Ltd., Ahmedabad; Chemrow India Pvt. Ltd., New Delhi; Super Threads, New Delhi; Minitre Systems, New Delhi; Science & Security System, Ambala Cantt.; Standard Woollen Mills, Ludhiana; Shree Shyam Sales, Delhi; ABP Sales, Delhi; Engineers & Traders, Aligarh; Abhinav Associates, Lucknow; North India Exports, Noida; Brisk Solution, New Delhi; The Wood White India, Surat; Quadrant Televentures Ltd., Mohali; Krishna Industries, Meerut; Alfa India, New Delhi

POLYMER & TECHNICAL TEXTILES LABORATORY

No. of Commercial Samples Tested: 1096

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 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 etc.

New Clients Added:

Aakash Garments, Delhi; Arka Solutions Pvt. Ltd., Ghaziabad; Chattisgarh Police; Eco Polypack, Noida; Gago Industries, Haryana; Eurofins Product Testing India Pvt. Ltd.; Pratap Industries, Delhi; Priyanka India Private Limited, New Delhi; Rising Sun Enterprises, New Delhi; S.S. Sales Corporation, Delhi

ECO LABORATORY

Number of samples analyzed: 121

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

New Clients Added:

Providence Textiles, Ludhiana; Swadeshi Woolen Mills, Ludhiana; Classic Silvocraft, Jodhpur; Krishi Sarin, New Delhi; Geeta Interfab Pvt. Ltd., Sonapat; Maha Laxmi Agency, Delhi; Jyoti Woollen Mills, Ludhiana; U. S. Industries, Delhi; VJM Industries, Delhi; Siddhi Network Solutions, Meerut; Gupta Fabrics, Delhi; Harshita Private Limited, Guwahati; Home and Floor, Panipat; Jasch Industries Limited, Sonapat; O/o Development commissioner (for handlooms), Delhi; R P Autostyles, Dehradun; Himani Verma, Pant Nagar; SCA Fibres, Panipat; Adient Arvind Automotive Fabrics India Pvt. Ltd., Gandhinagar; Kansin Import Export Pvt. Ltd., New Delhi

ENVIRONMENT LABORATORY

Number of samples analyzed: 151

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 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.

New Clients Added:

Enviro Infra Engineers Pvt. Ltd., Sonipat; Orden Platz (India) Pvt. Ltd., Ghaziabad; Madni Textile Mills Pvt. Ltd., Sonipat; Delhi Agricultural Marketing Board, Delhi; Skylark Dyeing Pvt. Ltd., G.B. Nagar; Pragati Infra Promoters (Pvt.) Ltd., Lucknow; Home Trends, Panipat; Grand Organics Pvt. Ltd., Bicholim; ESIC Hospital, Ghaziabad; Yash Pakka Limited, Ayodhya; Nano Tech Chemical Brothers Pvt. Ltd., Ludhiana; Bodycare International Ltd., Delhi; Shiv Polymers, Panipat; Super Threads, New Delhi; Ghaziabad Polymers (Pvt.) Ltd, Ghaziabad; Goldtex Furnishing Industries, Sonipat

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

- Global PT Provider (P) Ltd.
- SASMIRA, Mumbai
- TRADC, Bharuch
- NITRA, Ghaziabad

TRAINING SERVICES

Keeping in view the growing need of trained manpower in textile and garment industry, NITRA offered various training programs throughout the year to meet the manpower requirement of textile and apparel industry. In addition to in-plant training programmes for working professionals, NITRA also offers job-oriented programs for young graduates and 12th pass aspirants to make their career in the textile and garment industry. These programs cater to meet the needs of different departments such as Production, Quality Control, Merchandising and Industrial Engg departments.

Job-Oriented short term programs:

Since 2002, NITRA is conducting job-oriented professional training programs for the textile and apparel sector. During the year 2019-20, following full time programs were offered. A total of 86 students were admitted in these programs. Details are given below:

S. No.	Program Title	Min. Qualification	Duration	No. of students trained
1	Apparel Manufacturing and Merchandising (AMM)	Graduation/ Diploma	12 months	35
2	Apparel Design and Quality Control (ADQC)	12 th Pass	12 months	23
3	Apparel Production and Industrial Engg. (APIE)	12 th Pass	12 months	28

Distance Learning Programs for Working Executives:

Since 2003, NITRA is conducting distance learning programs for the working executives of textile and apparel sector. During the year 2019-20, following distance learning programs were offered:

S. No.	Name of the Program	Duration	No. of persons trained
1	Textile Technology & Management (TTM-DLP)	12 months	32
2	Apparel Manufacturing and Merchandising (AMM-DLP)	12 months	12
3	Quality Evaluation of Textiles & Garments (QETG-DLP)	12 months	21

Contact sessions are conducted twice in a month on alternate Sundays in NITRA campus. A total of 65 working professionals were trained in above programs.

Summer Training Programs:

Every year, NITRA conducts one month summer training programs for the students of textile universities, colleges and polytechnic colleges who are pursuing Post Graduation/ Graduation/Diploma level courses. During the year 2019-20, summer training programs were offered in following areas:

S. No.	Title	No. of participants
1	Textile Manufacturing and Testing	11
2	Apparel Designing and Merchandising	04
3	Weaving Technology	07
4	Textile Manufacturing and Testing	35
5	Weaving and Testing	07

A total of 64 students from following institutes were trained in the above programs.

S. No.	Name of the Institute
1	CET, Bhubneshwar
2	NIFT, Kangra
3	Banasthali University
4	YWCA, New Delhi
5	Govt. Polytechnic, Debai
6	Govt. Polytechnic, Hindalpur
7	Institute of Fine Arts, Modi Nagar
8	Panipat Institute of Engg. & Technology, Panipat
9	Aryabhata Polytechnic, New Delhi
10	GKFTTI, Noida
11	Satyam Fashion Institute, Noida

NITRA Technical Campus: The Academic Wing to Support Training Activities

NITRA Technical Campus was established during 2011-12 for conducting AICTE, MHRD 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 fourth batch of B.Tech. students of NITRA Technical Campus has been very impressive. Till 31st March 2020, 83 students of Textile Technology, Textile Chemistry and Computer Science & Engg. branches have been placed in renowned companies like Winsome Yarns Ltd.; Vardhman Textiles Ltd.; Trident Group Ltd.; Alok Industries Ltd.; Nahar Industrial Enterprises Ltd.; Rajasthan Spg. & Wvg. Mills Ltd.; Star Safety Hub; Mahima Fibres Pvt. Ltd.; Sangam India Ltd.; Satyam Polyknits; Raksha Textiles; Continuum Global; EINN Software Pvt. Ltd.; AVL India Pvt. Ltd.; Infosys; Tech Mahindra; HCL Technologies; Capgemini IT India Pvt. Ltd.; NIIT Technologies; Tata Consultancy Services Ltd.; IBM, Bangalore; App Squadz Technologies Pvt. Ltd.; Thoughts2Binary Consulting and Solutions LLP; Tata Consultancy Services Ltd.; Joulesto Watts Business Solutions Pvt Ltd.; Moody's Analytics Knowledge Services; Magnon Eg+; NTT Data Information Processing Services Pvt. Ltd.; Cyber Cure Technologies Pvt. Ltd.; Nivesh Global; and Ambition Technology.

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, with 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	9390
Journals	39
(For list of journals refer Annex-11&12)	
Project reports	253
Thesis (M.Sc./Ph.D., B.Tech - CSE/TT/TC)	173
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

NITRA Publication:

- Latest Developments in Textile machines – Review of ITMA 2019

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

- Apparel Merchandising by R. Rathinamoo, R Surjit
- Industrial Engineering in Apparel Production by V Rameshbabu
- Quality Characterisation of Apparel by Subrata Das
- High Performance Technical Textiles Ed. by Roshan Paul
- Hand Book of Fire Resistant Textiles Ed. by F Selcen Kilins
- Functional Textiles for Improved Performance, Protection & Health by N Pan and G Sun
- Artificial Intelligence and Intelligent System by N P Padhy
- Cloud Application Architectures by George Reese
- Cloud Computing : A practical Approach by Anthony Velte (et al)
- Neural Networks and Learning Machines by Simon Haykin
- Neural Networks : A classroom approach by Satish Kumar
- A Text Book of Engineering Mathematics - I, 2nd Ed. by N P Bali and Manish Goyal
- Applied Physics for Engineers by Neeraj Mehta
- Engineering Physics by H K Malik, A K Singh
- Engineering Physics by B K Pandey, S Chaturvedi
- The Indian Textile Journal's All India Textile Directory by ASAP Info Global
- A Textbook of Optics Ed. by N Subramanyan (et al)
- NFPA-701, Standard methods of Fire Tests for Flame
- Advanced Textile Engineering Materials, Edited by Shahid-ul-Islam
- Shape Memory Polymers and Textiles by Jinlian HU
- Structure and Mechanics of Textile Fibre Assemblies Edited by P Schwartz
- Textile Advances in the Automotive Industry, Edited by R Shishoo
- A Text Book of Engineering Mathematics - II, 12th Ed. by N P Bali and Dr. Manish Goyal
- Introduction to Engineering Mathematics - II, by H K das (et al)
- Introduction to Engineering Mathematics - IV, by H K das (et al)

IMPORTANT EVENTS AND HAPPENINGS DURING 2019-20

Senior Scientists from NITRA visit ITMA Fair at Barcelona, Spain

Dr. Arindam Basu, Director General, Mr. Abhijit Pal, Officiating Director and Dr. M. S. Parmar, Joint Director (A) attended the ITMA 2019, during 20-26 June 2019, at Barcelona, Spain 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 objectives 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.

NITRA releases booklet “Latest Developments in Textile Machines – Review of ITMA 2019”

Dr. Arindam Basu, Director General, Mr. Abhijit Pal, Officiating Director and Dr. M. S. Parmar, Joint Director (A) attended the recently concluded 18th ITMA in Fira Barcelona, Spain. The team has recently penned down a review report on 18th ITMA namely Latest Developments in Textile Machines – Review of ITMA 2019 wherein their observations on the main areas of textile industry i.e. spinning, weaving & knitting, wet processing and quality & process control are discussed at length and analyzed incisively. A limited no. of copies are now available with NITRA library at a subsidized price of Rs.100/- per book.

Mr. Amino Bello Masari “His Excellency the Governor of Katsina State of Nigeria” along with a 16 member delegation visits NITRA

Delegates from Nigeria led by Mr Amino Bello Masari “His Excellency the Governor of Katsina State of Nigeria” along with a 16 member delegation visited NITRA, Ghaziabad on 22nd July 2019.

Dr. Arindam Basu, DG NITRA made a presentation on latest developments in textiles and NITRA activities. Delegation also visited the facilities of NITRA particularly the pilot plant of spinning, weaving, processing, Focus Incubation Centre and laboratories. They had extensive discussions over the developments that NITRA have done in the field of protective textiles.

NITRA Participates at Technotex 2019, Mumbai

NITRA, a name in Protective and Automotive textiles research and related activities, showcased its prominent developments, publications, commercializations and several activities in the field of technical textiles thru its Stall at TECHNOTEX 2019, Goregaon, Mumbai. It was organized by Ministry of Textiles, Government of India & FICCI from August 29 to 31, 2019.

Vice Chairman, NITRA and MD, Zonac Knitting Machines Pvt. Ltd. visits NITRA stall at Technotex 2019, Mumbai

Sh. Raj Kumar Jain, Vice Chairman, NITRA and MD Zonac Knitting Machines Pvt. Ltd. visited NITRA stall at Technotex 2019, Mumbai on August 29, 2019 and encouraged NITRA for its immense work in the field of technical textiles particularly protective & automotive textiles.

NITRA signs MoU with Kay Tent at Technotex 2019, Mumbai

NITRA has one more feather in its cap by signing MoU with M/s. Kay Tent Industries, New Delhi on August 29, 2019 for the development of technical textile products in the field of feminine hygiene at Technotex 2019, Mumbai.

MD, Tarasafe International Pvt. Ltd., visits NITRA stall at Technotex 2019, Mumbai

Sh. Basant Lohia, MD Tarasafe International Pvt Ltd., visited NITRA stall on August 30, 2019 at Technotex 2019, Mumbai and discussed developments done by NITRA in the field of technical textiles and possible collaboration with NITRA for development of new products.

Vice President & Unit Head - Ginni Filament Ltd. delivers a guest lecture on Non-Woven Textiles

Mr. Ayan Chakaborty, Vice President & Unit Head at Ginni Filament Ltd. (Consumer Product Division-SIDCUL), Haridwar, has delivered a lecture on Non-Woven textiles to the B. Tech (Textile Technology & Textile Chemistry) 3rd & Final year students on 12th September 2019 at NITRA Technical Campus seminar hall. More than 80 students attended the lecture with keen interest and were extremely benefited by knowledge shared by Mr. Chakraborty on non-woven textiles.

NITRA observes 16th Convocation cum Award Ceremony

NITRA's 16th Convocation Ceremony was held on Saturday, 21st Sept.'19 at NITRA, Ghaziabad in presence of Dr. Arindam Basu, Director General, NITRA and Sh. Abhijit Pal, Officiating Director, NITRA. A total of 178 students were awarded certificates and medals in the convocation.

NITRA officers awarded certificate by Bureau of Energy Efficiency (BEE)

BEE has certified Mr. Vikas Sharma as Accredited Energy Auditor-Textile Sector on 29th October 2019. Mr. Sourabh Jain has qualified for Certified Energy Manager.

Divisional Commissioner, Leh (Ladakh) visits NITRA

Sh. Saugata Biswas IAS, Divisional Commissioner, Leh (Ladakh) along with Sh. R.K. Srivastava, Executive Director-NCDPD and Sh. Ranbir Singh, Director HMCM visited NITRA on December 13, 2019.

Dr. Arindam Basu, DG NITRA warmly welcomed them and Mr. A. Pal (Officiating Director) made presentation on NITRA activities, latest developments done by NITRA and also discussed in detail about the Pashmina project for Leh & Ladakh.

Team also visited the various facilities of NITRA particularly the pilot plants of spinning, weaving and textiles laboratories. They had extensive discussions over the developments that NITRA has done in the field of natural fibres.

NITRA organizes Research Advisory Committee Meeting

Research Advisory Committee (RAC) Meeting was held at NITRA on December 14, 2019. The meeting was chaired by Sh. Raj Kumar Jain, Chairman RAC & MD, Zonac Knitting Machines Pvt. Ltd. Dr. Arindam Basu, Director General welcomed the RAC Chairman, members and special invitees in the meeting and expressed thankfulness for their kind presence. He explained that NITRA has completed two projects and is currently working on eight on-going projects. NITRA has also proposed three projects to Government agencies. NITRA Scientists made presentations on these projects. Total 20 RAC Members & special invitees from industries and academia had an intensive interaction and gave fruitful suggestions on the research activities carried out by NITRA. Sh. Abhijit Pal, Officiating Director, NITRA offered the vote of thanks.

Bureau of Indian Standard (BIS) nominates DG NITRA as Chairman of its Textiles Division Council

In order to boost and give a new direction to national standardization efforts, Bureau of Indian Standard (BIS) nominated Dr. Arindam Basu, DG NITRA as Chairman of its Textiles Division Council.

DG NITRA chairs the session at Textiles Division Council, BIS

Dr. Arindam Basu, DG NITRA chaired the 21st Meeting of the Textiles Division Council at BIS, New Delhi on April 10, 2019.

BIS recognizes NITRA labs

Bureau of Indian Standards (BIS) has empanelled NITRA as one of the BIS recognized laboratories under the category GROUP-2 “Lab of National Repute and Eminence, facilities of which are being utilized by BIS”. Click the link and select the lab “Northern India Textile Research Association” for details <http://164.100.105.198:8096/bis.access/osldropdown.asp>

NITRA signs MoU with BIS on 23rd July 2019 for collaboration in the areas of Standardization and Conformity Assessment

Dr. Arindam Basu, Director General on behalf of NITRA and Smt. Surina Ranjan, IAS, Director General on behalf of BIS signed MoU for collaboration in the areas of “Standardization and Conformity Assessment” on 23rd July, 2019 at BIS, New Delhi. Prime aim is to establish cooperation in the areas of standardization & Conformity Assessment in the fields of textiles including technical textiles.

NITRA Technical Campus (NTC) students participate in Art of Living Program

NITRA Technical Campus students took part in the “5-day Student Excellence and Learning Program (SELP)” on The Art of Living with great enthusiasm during April 22-26, 2019. The objectives to hold this program was to clarify the idea of happiness, peace, emotional balance, confidence, health and equanimity to the student strata.

Six NITRA Technical Campus students secure position among top 10 university rankers

Repeating the success of last three years, the band of NITRA Technical Campus (NTC) students have brought laurels again. It is a matter of great delight that as many as six students of NITRA Technical Campus have secured positions among the top 10 AKTU rankers in Textile Group for the year 2019-20.

Parichaya – The Freshers’ Party 2019

Parichaya 2k19, the annual Freshers’ Party of NITRA Technical Campus (NTC) was held on 13th September, 2019 at NTC Campus, NITRA, Ghaziabad. The freshers’ meet opened with the 2nd year students presenting performing arts on several contemporary topics. Many of the 1st year students also joined them and made the event more entertaining.

NITRA Technical Campus (NTC) students participate in SMART TEXTILE HACKATHON – 2019

TT-3rd year students participated in SMART TEXTILE HACKATHON – 2019 held on September 27-28, 2019 at UPTTI, Kanpur. Team of students won first prize in Smart Model Exhibition category for a development of dual card concept in the spinning process.

NITRA Technical Campus Hosts Intra-college Debate Competition My Voice 2020

The Intra-college English Debate Competition My Voice 2020 was held on Saturday, 29th February 2020 at NITRA Technical Campus. Sixteen students participated in the first round and eight of them qualified for the final round. The trophies were presented by Dr. Arindam Basu, Director General, Sh. Abhijit Pal, Officiating Director and senior faculty members.

AKTU honours NITRA Technical Campus students

It is a matter of great delight that as many as four bright students from NITRA Technical Campus are awarded merit scholarship and appreciation certificate through talent incentive scheme launched by AKTU.

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 decentralised 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 decentralised power loom sector and make them aware of need and importance of testing required for meeting forthcoming changes in reference to the globalisation 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 decentralised power loom industry towards upgrading / modernising 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 2019-2020:

1. Liaison visits/survey carried out (no. of units covered)	-	3140
2. Technical assistance/consultations provided	-	41
3. Designs developed	-	41
4. Samples tested	-	2693
5. No. of persons trained	-	585
6. Exhibitions/seminars conducted	-	62

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	43	102	1263	986	299	2693

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	20	21	41

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

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

SOCIAL SECURITY RELATED ACTIVITIES

Power Loom Service Centres are also involved in insuring power loom workers under Group Insurance Scheme (previously known as Janshree Bima Yojana) towards their social security. During the year 2019-20 a total of 7,364 power loom workers were insured through NITRA Power loom Service Centres.



Dr. Arindam Basu (L), Director General and Sh. S. K. Kapoor (R), Chairman along with other officials at the 43rd AGM of NITRA



Dr. Arindam Basu, DG, NITRA and Smt. Surina Ranjan, IAS, DG, BIS sign MoU for collaboration in the areas of "Standardization and Conformity Assessment" on 23rd July 2019. Also seen (2nd from left) is Dr. M. S. Parmar, Jt. Director (A), NITRA



A 16-member delegation team headed by Mr. Amino Bello Masari, His Excellency the Governor of Katsina State of Nigeria, visits NITRA on 22nd July 2019



NITRA Pavilion at Technotex 2019, Mumbai: (L-R) Dr. M. S. Parmar, Jt. Director (A), Dr. Arindam Basu, Director General and Sh. Raj Kumar Jain, Vice Chairman, NITRA & Managing Director, Zonac Knitting Machines (P) Ltd.

ANNEXES

MEMBERS OF THE COUNCIL OF ADMINISTRATION 2019-2020

- | | | |
|----|---|--|
| 1. | Shri S.K. Kapoor
(Chairman) | Managing Director
Surya Processors Pvt. Ltd.
619, Bistrakh Road,
Village Chhapraulla,
Distt. Ghaziabad - 201 001 |
| 2. | Shri Dinesh Nolkha
(Deputy Chairman) | Managing Director
Nitin Spinners Ltd.
12, Badal Textile Market
Pur Road
Bhilwara - 311 001 (Raj.) |
| 3. | Shri Raj Kumar Jain
(Vice 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 |
| 4. | Shri Sanjay Kumar Jain | Managing Director
T.T. Ltd.
879, Master Prithvi Nath Marg
Opp. Ajmal Khan Park, Karol Bagh
New Delhi - 110 005 |
| 5. | 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 |
| 6. | Shri R.L. Nolkha | Chairman
Nitin Spinners Ltd.
16-17 KM Stone, Chittor Road
Hamirgarh – 311 025
Bhilwara (Rajasthan) |
| 7. | Shri H.M. Vashisth | Executive President
Sutlej Textiles & Industries Ltd.
(Unit: Rajasthan Textile Mills)
Pachpahar Road
Bhawanimandi - 326 502 (Raj.) |

8.	Shri Rajeev Jain	Business Head-Operations (Yarn Business) RSWM Limited Village – Kharigram Gulabpura – 311 021 (Bhilwara)
9.	Shri G. Balasubramanian	Secretary General NITMA PHD House, Sector 31-A Chandigarh – 160 031
10.	Shri P. Kasivishwanathan	Executive Director Picanol India Pvt. Ltd. DSM – 621 & 622, DLP Towers Block-IV, 15 Shivaji Marg New Moti Nagar New Delhi – 110 015
11.	Shri Aditya Sachan	Executive Director S.T. Cottex Exports (P) Ltd. Bxxx-891, Sherpur Road Ludhiana - 141009
12.	Dr. Anil Gupta	Director Finance NTC Ltd. Core IV, Scope Complex 7, Lodhi Road, New Delhi – 110 003
13.	Shri Sukumar	Chief General Manager NTC Ltd. Core IV, Scope Complex 7, Lodhi Road, New Delhi – 110 003
14.	Director General	Council of Scientific and Industrial Research Anusandhan Bhawan 2, Rafi Marg New Delhi – 110 002
15.	Addl. Secretary & Fin. Advisor	Ministry of Textiles Govt. of India Udyog Bhawan New Delhi – 110 011
16.	Joint Secretary (R&D)	Ministry of Textiles Govt. of India Udyog Bhawan New Delhi – 110 011

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| 17. | The Textile Commissioner | Ministry of Textiles
Office of the Textile Commissioner
(Powerloom Development Cell)
48, Vithaldas Thakarsee Marg
Nishta Bhawan (New C.G.O. Bldg.)
Mumbai – 400 020 |
| 18. | Shri Vallabh S. Thumar | Chairman, TMMA (I) &
Chairman & Managing Director
Weavetech Engineers Ltd.
195- Road No. 6 F
Udhna Udyog Nagar
New Industrial Estate
Udhna, Surat – 394 210 |
| 19. | Dr. Arindam Basu | Director General
NITRA
Sector 23, Raj Nagar
Ghaziabad – 201 002 |
| 20. | Shri Pragnesh Shah | Director
Ahmedabad Textile Industry's Research
Association
P.O. Ambawati Vistar
Ahmedabad – 380 015 (Gujarat) |
| 21. | Dr. Prakash Vasudevan | Director
The South India Textile Research
Association
13/37, Avanashi Road
Coimbatore – 641 014 |
| 22. | Dr. Anjan K. Mukhopadhyay | Director
The Bombay Textile Research Association
Lal Bahadur Shastri Marg
Ghatkopar (West)
Mumbai – 400 086 |
| 23. | Chairman/Addl. Secretary General | Apparel Export Promotion Council
Apparel House, Institutional Area
Sector 44
Gurgaon - 122 003 (Haryana) |
| 24. | Prof. Ashwini Agrawal | Professor & Head
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016 |

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|-----|----------------------|--|
| 25. | Dr. S. Sunanda | Secretary General
CITI, 6 th Floor, Narain Manzil
23, Barakhamba Road
New Delhi – 110 001 |
| 26. | Shri Ashish Bagrodia | Chairman & Managing Director
Winsome Textile Industries Ltd
SCO 191-192, Sector 34 A
Chandigarh – 160 022 |
| 27. | Shri Sandeep Hora | Partner/CEO
Aeronav Industrial Safety Appliances
C-36, 3 rd Floor, Panchsheel Enclave
New Delhi – 110 016 |
| 28. | Shri Vidit Jain | Jt. Managing Director
Pasupati Spg. & Wvg. Mills Ltd.
127, 128 Tribhuvan Complex
Nehru Place, Mathura Road
Ishwar Nagar
New Delhi - 110 065 |
| 29. | Shri Suresh Singhvi | Director (Finance)
Ginni Filaments Limited
D-196, Sector-63
Noida – 201 307 (U.P.) |
| 30. | Shri Sanjay Gulati | Managing Director
Growel Impex Pvt. Ltd.
E-16, Greater Kailash Part-II
New Delhi – 110 048 |
| 31. | Prof. Manjeet Jassal | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi – 110 016 |
| 32. | Dr. J.V. Rao | Former DG & Advisor - NITRA
F-1, Friends Apartments
Madhu Vihar, I.P. Extn.
Patparganj
New Delhi – 110 092 |
| 33. | Shri R.C. Kesar | PNC 024 The Pinnacle
DLF City Phase V
Sector 43
Gurgaon - 122 009 (Haryana) |

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|-----|---------------------------------|---|
| 34. | Prof. Ravishankar Chattopadhyay | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016 |
| 35. | Shri Dilip Gianchandani | Country Manager, India
The Wool Mark Company
806, 8th Floor, C wing, One BKC
Bandra Kurla Complex
Bandra East
Mumbai – 400 051 |
| 36. | Shri L.N. Jhunjhunwala | LNJ Bhilwara Group
Bhilwara Towers
A-12 Sector-1
Noida – 201 301 |
| 37. | Shri Sharad Jaipuria | Chairman & Managing Director
Ginni International Ltd.
2 nd Floor, Shanti Chamber
11/6B, Pusa Road
New Delhi – 110 005 |
| 38. | Shri Shishir Jaipuria | Managing Director
Ginni Filaments Ltd.
H-6, Sector-63
Noida – 201 301 |
| 39. | Dr. Rikhab Chand Jain | Chairman
T.T. Limited
879, Master Prithvi Nath Marg
Opp. Ajmal Khan Park,
Karol Bagh
New Delhi – 110 005 |
| 40. | Representative | Federation of Hosiery Manufacturers'
Association of India
Metro Towers, 8 th Floor
1, Ho Chi Minh Sarani
Kolkata – 700 071 |
| 41. | Dr. P. Alli Rani | Chairman-cum-MD
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 2019-2020

- | | | |
|----|--|---|
| 1. | Shri Dinesh Nolkha
(Chairman - FAC) | Managing Director
Nitin Spinners Ltd.
12, Badal Textile Market
Pur Road
Bhilwara - 311 001 (Raj.) |
| 2. | Shri S.K. Kapoor | Managing Director
Surya Processors Pvt. Ltd.
619, Bisrakh Road
Village Chapraula
Distt. Ghaziabad - 201 001 |
| 3. | Shri Raj Kumar Jain | Managing Director
Zonac Knitting Machines Pvt. Ltd.
D-1, D-2, Site B
Surajpur Industrial Area
Greater Noida – 201 306
Distt. Gautam Budh Nagar |
| 4. | Shri Sanjay Kumar Jain | Managing Director
T.T. Ltd.
879, Master Prithvi Nath Marg
Opp. Ajmal Khan Park, Karol Bagh
New Delhi - 110 005 |
| 5. | 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 |
| 6. | Shri R.L. Nolkha | Chairman
Nitin Spinners Ltd.
16-17 KM Stone, Chittor Road
Hamirgarh – 311 025
Bhilwara (Rajasthan) |
| 7. | Shri Shishir Jaipuria | Managing Director
Ginni Filaments Ltd.
H-6, Sector-63
Noida – 201 301 |

- | | | |
|-----|--------------------------|--|
| 8. | Dr. Rikhab Chand Jain | Chairman
T.T. Limited
879, Master Prithvi Nath Marg
Opp. Ajmal Khan Park, Karol Bagh
New Delhi – 110 005 |
| 9. | Secretary General | CITI, 6 th Floor, Narain Manzil
23, Barakhamba Road
New Delhi – 110 001 |
| 10. | Joint Secretary (R&D) | Ministry of Textiles, Govt. of India
Udyog Bhawan
New Delhi – 110 011 |
| 11. | The Textile Commissioner | Ministry of Textiles
Office of the Textile Commissioner
48, Vithaldas Thakarsee Marg
Nishta Bhawan (New C.G.O. Bldg.)
Mumbai – 400 020 |
| 12. | Shri Rajeev Jain | Business Head - Operations
(Yarn Business)
RSWM Limited
Vill. Kharigram
Gulabpura – 311 021
Distt. Bhilwara |
| 13. | Prof. Ashwini Agrawal | Professor & Head
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016 |
| 14. | Dr. Arindam Basu | Director General
NITRA
Sector 23, Raj Nagar
Ghaziabad – 201 002 |
| 15. | Dr. J.V. Rao | Former DG & Advisor - NITRA
F-1, Friends Apartments
Madhu Vihar, I.P. Extn.
Patparganj
New Delhi – 110 092 |
| 16. | Shri R.C. Kesar | PNC 024 The Pinnacle
DLF City Phase V
Sector 43
Gurgaon-122 009 (Haryana) |

- | | | |
|-----|---------------------------------|---|
| 17. | Dr. Anil Gupta | Director - Finance
NTC Ltd.
Core IV, Scope Complex
7, Lodhi Road
New Delhi – 110 003 |
| 18. | Prof. Ravishankar Chattopadhyay | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016 |
| 19. | Shri Suresh Singhvi | Director (Finance)
Ginni Filaments Ltd.
D-196, Sector-63
Noida – 201302 (U.P.) |
| 20. | Shri G. Balasubramanian | Secretary General
NITMA
PHD House, Sector 31-A
Chandigarh – 160 031 |
| 21. | Shri Sanjay Gulati | Managing Director
Growel Impex Pvt. Ltd.
E-16, Greater Kailash Part-II
New Delhi – 110 048 |

MEMBERS OF THE RESEARCH ADVISORY COMMITTEE 2019-2020

- | | | |
|----|---|---|
| 1. | Shri Raj Kumar Jain
(Chairman - RAC) | 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 S.K. Kapoor | Managing Director
Surya Processors Pvt. Ltd.
619, Bistrakh Road, Village Chhapraulla
Distt. Ghaziabad - 201 001 |
| 3. | Shri Dinesh Nolkha | Managing Director
Nitin Spinners Ltd.
12, Badal Textile Market
Pur Road
Bhilwara - 311 001 (Raj.) |
| 4. | Shri Sanjay Kumar Jain | Managing Director
T.T. Ltd.
879 Master Prithvi Nath Marg
Opp. Ajmal Khan Park, Karol Bagh
New Delhi - 110 005 |
| 5. | Dr. Arindam Basu | Director General
NITRA
Sector 23, Raj Nagar
Ghaziabad – 201 002 |
| 6. | Shri Abir Chakrabarti | Head (TRADC)
Textile Research & Application
Development Centre, Birla Dham
Kharach, Kosamba (R.S.)
Distt. Bharuch – 394 120 (Gujarat) |
| 7. | Dr. Anjan K. Mukhopadhyay | Director
BTRA
Lal Bahadur Shastri Marg
Ghatkopar (West)
Mumbai – 400 086 |
| 8. | Shri Ajay Sharma | General Manager (R&D)
(Rajasthan Spg. & Wvg. Mills Ltd.
Unit : Banswara), LNJ Bhilwara Group
Bhilwara Towers, A-12, Sector 1
Noida - 201 301 (U.P.) |

- | | | |
|-----|------------------------------|---|
| 9. | Shri Arvind Yadav | Chairman cum Managing Director
Arikav Textiles Ltd.
C-4, Site-IV, UPSIDC Indl. Area
Kasana Road, Greater Noida
Gautam Budh Nagar (U.P.) |
| 10. | Dr. Amit Rawal | Associate Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016 |
| 11. | Dr. Ashwini Kumar Agrawal | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016 |
| 12. | Dr. Abhijit Majumdar | Associate Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi - 110 016 |
| 13. | Commander Arun Samal (Retd.) | General Manager
Integrated Defence Products
140-141, Toy City, Ecotech III
Greater Noida – 201 306 (U.P.) |
| 14. | Dr. B.S. Butola | Associate Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi – 110 016 |
| 15. | Dr. B.S. Yadav | General Manager
Mahima Fibres Pvt. Ltd.
406, Corporate House, 4 th Floor
Opp. Jhabua Tower, 169 RNT Marg
Indore – 452 001 (M.P.) |
| 16. | Dr. Deepti Gupta | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi – 110 016 |

- | | | |
|-----|--------------------------|---|
| 17. | Dr. J.V. Rao | CEO
Textile Sector Skill Council
CITI
6 th Floor, Narain Manzil
23, Barakhamba Road
New Delhi – 110 001 |
| 18. | Textile Commissioner | Office of the Textile Commissioner
48, Vithaldas Thakarsee Marg
Nishta Bhawan (New C.G.O. Bldg.)
Mumbai – 400 020 |
| 19. | Dr. Mangala Joshi | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi – 110 016 |
| 20. | Dr. Manjeet Jassal | Professor
Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas
New Delhi – 110 016 |
| 21. | Dr. N.N. Mahapatra | Business Head Dyes
Shree Pushkar Chemicals and Fertilizer Ltd.
Atlanta Centre, Goregaon (East)
Mumbai |
| 22. | Shri Pragnesh Shah | Director
ATIRA
P.O. Ambawati Vistar
Ahmedabad – 380 015 (Gujarat) |
| 23. | Dr. Prakash Vasudevan | Director
SITRA
13/37, Avanashi Road
Coimbatore Aerodrome
Coimbatore – 641 014 (T.N.) |
| 24. | Shri Prasanta Kumar Deka | Vice President – Sales & Marketing
Rieter India Pvt. Ltd.
Karegaon Bhima, Pune |
| 25. | Shri Rajeev Jain | Business Head – Operations
(Yarn Business), RSWM Limited
Kharigram, Gulabpura
Distt. Bhilwara – 311 021 (Rajasthan) |

- | | | |
|-----|-------------------------------|---|
| 26. | Dr. R.S. Rengasamy | Professor, Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas, New Delhi – 110 016 |
| 27. | Dr. Ravishankar Chattopadhyay | Professor, Deptt. of Textile Technology
Indian Institute of Technology
Hauz Khas, New Delhi 110 016 |
| 28. | Shri R.C. Kesar | Director General
Okhla Garment and Textile Cluster
(OGTC), Y-29, Okhla Indl. Area
Phase-2, New Delhi-1110 020 |
| 29. | Shri Sanjay Gulati | Managing Director
Growel Impex Pvt. Ltd.
E-16, Greater Kailash, Part-II
New Delhi - 110 048 |
| 30. | Shri Sandeep Hora | C.E.O.
Aeronav Industrial Safety Appliances
E-24, Secor-7, Noida-201 301 |
| 31. | Shri S.M. Dwivedi | Managing Director
Sara Textiles Ltd.
Sara House, B-8, Sector-4
Noida, Distt. G.B. Nagar |
| 32. | Shri Tarashankar | Scientist 'G' / Sr. Director,
Head of Electronics System Development &
Application Division
Ministry of Electronics and Information
Technology
6, CGO Complex
New Delhi - 110 003 |

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

C. Units in U.P.

1. Alps Industries Ltd.
2. Awadh Textwood (P) Ltd.
3. Bureau Veritas Consumer Products Services (India) Pvt. Ltd.
4. Dewan Textiles
5. Ginni Filaments Ltd.
6. Gajroula Spinning Mills
7. J.K. Synthetics Ltd.
8. Pasupati Acrylon Ltd.
9. Pawan Exports Pvt. Ltd.
10. Pasupati Fabrics
11. Shamken Multifab Ltd.
12. Shamken Spinners Ltd.
13. Sai Electricals
14. Sarla Fabric Ltd.
15. Surya Processors Pvt. Ltd.
16. Mahavir Spinfab Pvt. Ltd.
17. Jayshree International
18. Orient Craft Limited
19. Sybly Industries Ltd.
20. Aeronav Industrial Safety Appliances
21. Radnik Auto Exports
22. Shahi Exports Pvt. Ltd.
23. Pilkhuwa Water Proofing Co. Pvt. Ltd.
24. Zonac Knitting Machine (I) Ltd.
25. Derpa Industrial Polymers (P) Ltd.
26. Icon Designs
27. Geosys India Infrastructures Pvt. Ltd.
28. Integrated Defence Products Pvt. Ltd.
29. Nexgen Fabrics Pvt. Ltd.
30. G.D. International

U.P.S.T.C. Ltd.

1. Jhansi Unit
2. Jaspur Unit
3. Kashipur Unit
4. Partapur Unit
5. Sandila Unit

N.T.C. Ltd.

1. Swadeshi Cotton Mills (Naini)
2. Swadeshi Cotton Mills (Mau)

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. Shades of India Craft Pvt. Ltd.
8. Growel Impex Pvt. Ltd.
9. Kay Tent Industries

E. Units in Punjab

1. Abhishek Industries Ltd.
2. Adhinath Dyg. & Fsg. Mills
3. Abhinav Cotspin Ltd.
4. Bhandari Exports
5. J.C.T. Ltd.
6. Kharar Textile Mills
7. Malwa Cotton Spg. Mills Ltd.
8. Malwa Cotton Mills Ltd.
9. Nahar Fibres Ltd.
10. Nahar Industrial Enterprises Ltd.
11. Nahar Exports Ltd.
12. Nahar Fabric Ltd.
13. Oswal Cotton Spg. Mills Ltd.
14. Rishab Spg. Mills
15. Rainbow Denim
16. Suraj Textile Mills
17. Vardhman Textiles Ltd.
18. Eveline International
19. Superfine Knitters
20. Duke Fashions
21. Top Gear Fashions
22. Nahar Spinning Mills

F. Units in Himachal Pradesh

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

G. Units in J&K

1. Chenab Textile Mills
2. H.E.G. Ltd.

H. Units in Madhya Pradesh

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

I. Units in Maharashtra

1. Surya Lakshmi Cotton Mills
2. Alok Industries Ltd.
3. Kusumgar Corporate India Pvt. Ltd.
4. Sunil Industries Ltd.
5. Continental Surface Solutions India Pvt. Ltd.

J. Unit in Andhra Pradesh

1. Shree Manufacturing Co. Ltd.

K. Unit in West Bengal

1. Jayashree Textiles

L. Unit in Karnataka

1. Bhoruka Textile Ltd.

M. Units in Tamil Nadu

1. K.G. Denim
2. Shubh Swasan India Pvt. 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.

Total Member Units

State-wise:

Andhra Pradesh	-	01	Punjab	-	22
Delhi	-	09	Rajasthan	-	17
Gujarat	-	03	Tamil Nadu	-	02
Haryana	-	23	Uttar Pradesh	-	37
Himachal Pradesh	-	04	West Bengal	-	01
Jammu & Kashmir	-	02	Overseas:		
Karnataka	-	01	Thailand	-	01
Madhya Pradesh	-	04			
Maharashtra	-	05			

Total No. of Member Units = 132

STAFF MEMBERS

(As on 31.03.2020)

NAME	DESIGNATION	QUALIFICATION
Dr. Arindam Basu	Director General	B.Sc. Tech. (Text. Tech.), M.Text., Ph.D., PGDBIM, FIE, FSAB, FTA
Mechanical Processing Division (Spg. & Wvg.):		
Mr. Abhijit Pal	Officiating Director Head of Department	B.Sc.Tech. (Text. Tech.), MS (by Research), FIE, FIV
Mr. U.C. Sharma	Asstt. Director	B.Sc., AMIE (Text.), MS (by Research), MIE, FIV
Mr. R.S. Yadav	Asstt. Director	B.Tech.(Text.), MS (by Research), MIE
Mr. M.K. Bansal	S.S.O.	Dip. in Text. Tech., MBA
Mr. A.K. Pandey*	P.S.O.	B.Text. (Text. Tech.)
Mr. Vijay Shankar Khoiwal*	Scientific Officer	B.E. (Text. Tech.), M.Tech. (Text. Engg.)
Mr. Deepak Saini*	Scientific Officer	Dip. in Textile Design, B.Tech. (Text. Engg.), M.Tech. (Textile Engg.&Mgt.)
Mr. Satyanarayana V.	S.T.A.	SSC, ITI, ATA
Environmental Engineering Division:		
Dr. A.A. Ansari	Asstt. Director	M.Sc., M.Phil., Ph.D.
Mr. Rahul Srivastava*	Env. Engineer	B.Tech. (Env. Engg.)
Physics & Quality Evaluation Division:		
Mr. Sanjeev Shukla	P.S.O Head of Department	B.Sc., B.Text., M.Tech., PGDBM
Mr. R.K. Sharma	S.S.O	B.Sc., ATA

NAME	DESIGNATION	QUALIFICATION
Mrs. Seema Sharma	S.T.A.	M.Sc.
Mr. R.P. Tripathi	Sr. Investigator	B.A.
Mr. G.C. Bajpai	Sr. Investigator	B.Sc. (Chem.)
Mr. Deepak Jangra*	Technical Assistant	Dip. in Textile Design
Chemical & Quality Evaluation Division:		
Dr. M.S. Parmar	Jt. Director (Academics) Head of Department	M.Sc., Ph.D, PGDMM, DCPA
Mr. Maheshwar Singh	S.S.O.	B.Sc., Diploma in Tex.Chem.
Dr. Girendra Pal Singh*	S.S.O.	Dip. in Handloom Technology, B.Tech. (Textile Technology), M.Tech. (Fibres and Textile Processing Technology), Ph.D.
Mrs. Nidhi Sisodia*	Scientific Officer	M.Sc., M.Tech. (Text. Chem.)
Mr. Durgesh Raj Maurya*	Scientific Officer	B.Tech. (Carpet & Textile Tech.), M.Tech. (Textile Chemistry)
Ms. Ruvinder Kumari*	Scientific Officer	B.Tech. (Textile Chemistry), M.Tech. (Textile Engg. & Mgt.)
Mr. Kuldeep Singh	S.T.A.	M.Sc., PG Dip. in QC & ISO 9000, ATA
Mr. Swami Sharan	S.T.A.	M.Sc. (Chem.), ATA
Mr. Devendra Singh	Sr. Investigator	B.A.
Mr. Dushyant Kumar	Sr. Investigator	B.Sc.
Polymer & Technical Textiles Division:		
Mrs. Neha Kapil	S.S.O.	M.Sc. (Textile & Clothing)
Ms. Shweta Chauhan*	Scientific Officer	B.Tech. (Manmade Fibre Tech.), M.Tech. (Fibre Sc. & Tech.)
Mr. Yogesh Kumar	S.T.A.	M.Sc. (Chem.), ATA
Mrs. Anjula Sharma	Data Processor	B. Com (P)

NAME	DESIGNATION	QUALIFICATION
Mr. Prakash	Sr. Investigator	B.Sc., ITI
Mr. Harendra Singh	Sr. Investigator	M.Sc. (Chem.)
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. Vineet Tyagi*	Business Development Manager	B.Sc., PG Dip. in Retail Management
Mr. Partha Basu	Public Relations Officer	B. Com, PGD in Advtg. & Mktg. Mgmt.
Garment Centre:		
Mr. M.M.Tiwari*	Asstt. Director	B.Sc., Dip. in Text.
Mr. Vivek Agarwal	Asstt. Director	B.Tech, PGDBM, MS (by Research)
Mr. Neeraj Aggarwal	Asstt. Director	B.Text, MS (by Research)
Mrs. Shweta Saxena	S.S.O.	M.Sc. (Textile & Clothing)
Mr. Sanjay Gupta	J.S.O.	M.Sc.
Mr. Jaswant Singh	S.T.A.	Intermediate
Ms. Mona Chauhan*	Admission Coordinator	M.A., Dip. in Mass Communication
Mrs. Geeta Sharma*	Faculty	Dip. in Fashion Designing & Garment Tech., B.A., AMEIM
Engineering Division:		
Mr. Vikas Sharma	P.S.O. 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
Software Development Centre:		
Dr. B.K.Sharma	P.S.O. Head of Department	M.Sc., M.Tech., Ph.D., SMCSI, FIETE, MIAE, MCSTA, SMIACIT
Mr. Avnish Kumar Sharma	S.S.O.	M.Sc., PGD in Computer Programming, Diploma in Operations Management, MCA
Mr. Krishan Kumar Dewan	S.S.O.	B.A., BHM, e-Commerce, PGDBM, M.Sc. (Comp. Sc.)
Administration & Accounts:		
Mr. Atul Baijal*	Dy. Manager (Accounts) Head of Department	M.Com, L.L.B., MBA
Mr. Puneet Agrawal	Dy. Manager (Accounts)	B.Com., ACA
Mr. N. Govindaraj*	Data Processor	SSLC
Mr. S.A.A. Rizvi	Sr. Supervisor (Purchase)	B.Sc., PG Dip. in Computer Science & Application, MBA
Mr. Amit J. Singh	Sr. Supervisor (Accounts)	M.Com., MBA
Mr. Rajeev Singh Rawat	Sr. Supervisor (Accounts)	B. Com.
Mr. V.K. Singhal	Asstt. Accountant	M.Com.
Mr. P.K. Butola*	Store & Purchase Sup.	M.A.
Mrs. Saraswathi Devi*	Receptionist	B.A.
Library:		
Mr. Abbas Raza	Asstt. Librarian	B.Sc., M.A., DPA, PGDCA, MLISC
Directorate:		
Mr. Hari Om Sharma*	Steno-typist/ Data Processor	B.A., LL.B., PG Dip. in Pers. Mgt., Dip. in Stenography

NAME	DESIGNATION	QUALIFICATION
NITRA Technical Campus:		
Dr. Meghna Tyagi	Asstt. Prof. (Mathematics)	M.Sc., Ph.D.
Mr. R.C. Yadav	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. Nitin Kumar Sharma*	Asstt. Prof. (CSE)	B.Tech. (CSE), M.Tech. (CSE)
Mr. Sourabh Jain*	Asstt. Prof. (CSE)	B.E. (ECE), M.Tech. (Aerospace Engg.-D&C)

SUPPORTING STAFF (TECHNICAL)

Environmental Engineering Division

Jr. Investigator:

Mr. D. Chakraborty*

Physics & Quality Evaluation Division

Laboratory Assistant:

Ms. Shalini Singh*
Ms. Shweta Yadav*
Mr. Vipin Jindal*
Mr. Netrapal*

Peon:

Mr. Ranveer Singh

Trainee:

Mr. Mohd. Asif*
Mr. Mohd. Nazim*

Chemical & Quality Evaluation Division:

Jr. Investigator:

Mr. Umesh Pathak

Laboratory Instructor:

Mr. Sumit Kumar*

Lab Attendant:

Mr. Sandeep Kumar*

Polymer & Technical Textiles Division:

Laboratory Assistant:

Mr. Mohit Pandey*
Mr. Saurabh Dhar*
Mr. Kamal Raj*

Laboratory Attendant:

Mr. Om Pal Singh

Mechanical Processing Division (Spg. & Wvg.):

Weaver Helper:
Mr. V. Ramesh

Trainee:
Mr. Amit Kushwaha*

Garment Centre:

Trainer Apparel Manufacturing:
Mr. Asif Ali

Engineering Division

Electrician:
Mr. Sandeep Sharma*
Mr. Sachin Kumar*

NITRA Technical Campus:

Laboratory Instructor:
Mr. Madan Gopal Pal*
Mr. Rohitash Singh*

Laboratory Assistant:
Mr. Dharmendra Kumar*
Mr. Shiva Choudhary*
Mr. Vinay Pratap*

Lab cum Office Assistant:
Mr. Adarsh Agarwal*

Computer Maintenance Assistant:
Mr. Raju Yadav*

SUPPORTING STAFF (NON-TECHNICAL)

Administration

Sewing Machine Technician:
Mr. Mukesh Kumar Tomar

Driver:
Mr. Anil Kumar

Office Attendant:
Mr. Narender Singh

Peon:
Mr. Sukh Pal Sharma

.

Accounts

Accounts Assistant:
Mr. Manjeet Singh Sachdeva*

Trainee:
Mrs. Santoshi Rana*

Assistant:
Mr. Hemand Kumar*

Library:
Draughtsman:
Mr. M.K. Tomar

Directorate

Daftari:
Mr. Dharamveer Singh

Driver:
Mr. Ganesh Lal

Peon:
Mr. Ramveer Singh

Peon:
Mr. Dushyant Pandit*

NITRA Technical Campus:

Peon:
Mr. Rajpal Singh*

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

SENIOR OFFICERS AT POWER LOOM SERVICE CENTRES / TESTING LABORATORIES

NAME	STATUS	QUALIFICATION	DIVISION
Mr. Kushagra Prakash*	S.S.O.	B.Text. (Text. Tech.) M.F. Tech.	PLSC, Meerut
Mr. M.K.S. Rathore	Technical Officer	B.Sc., Dip. in Manmade Fibre	PLSC, Kanpur
Mr. Om Singh	Incharge	Intermediate	PLSC, Bhilwara
Mr. Abdul Ajjij*	T/F	ITI Fitter	PLSC, Gorakhpur
Mr. S.K. Pathania	T/F	High School	PLSC, Ludhiana
Mr. S. Ansari	Resident Manager	Dip. in Hand. Tech.	PLSC, Tanda
Mr. Jai Narain*	Resident Manager	M.Tech.	PLSC, Panipat
Dr. A.V. Agrawal	Deputy Director & Incharge	M.Text. (Text. Tech.), Ph.D., FIE, FIV	PLSC, Varanasi

*On contract

RESIGNATIONS/EXPIRY OF CONTRACT, RETIREMENT AND DEATH DURING THE PERIOD APRIL 2019 TO MARCH 2020

S.No.	NAME	DIVISION	DESIGNATION
A) Resignations / Expiry of contract:			
1.	Ms. Nashrah H. Kidwai*	MPD (Spg.&Wvg.)	Scientific Officer
2.	Mr. Mrinal Kanti Datta*	MPD (Spg.&Wvg.)	Sr. Scientific Officer
3.	Dr. Bhaskar Gupta*	NTC	Director - Academics
4.	Mr. Pushkal Kumar Shukla*	NTC	Asstt. Prof. (CSE)
5.	Mr. Umesh Joshi*	NTC	Project Officer
6.	Mr. Mahendra Sagar*	NTC	Laboratory Instructor
7.	Mr. Ram Milan Kumar*	NTC	Laboratory Assistant
8.	Mr. Ashish Kumar*	NTC	Laboratory Assistant
9.	Mr. Sushant Saurabh*	UPSDM Project	Master Trainer Core Skill
10.	Ms. Supriya Singh*	PQE	Laboratory Assistant
B) Retirement:			
1.	Mr. D.K. Rai	PLSC, Gorakhpur	Trainer-cum-Loom Fitter
C) Death:			
1.	Mr. Radhey Shyam	Directorate	Courier

*On contract

RESEARCH PAPERS PUBLISHED AND PRESENTED

S.No.	Title	Author(s)	Publication/Place	Date
1.	Increasing Water Use Efficiency in Industrial Sector	M.S. Parmar	Seminar by National Water Mission, Dept. of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, Gol at Scope Complex, New Delhi	5 th March 2020
2.	Application of Machine Learning Techniques in various Emerging Fields	Mohit Sharma, Archana Sharma & B.K. Sharma	International Journal of Engineering Research and Management Technology, Vol. No. 7, Issue-1	March, 2020
3.	Analytical Approach to Cross Project Defect Prediction	Vikas Suhag, Anchal Garg, S.K. Dubey & B.K. Sharma	Soft Computing: Theories and Applications, Advances in Intelligent System and Computing, Vol. No. 1053, pp713-736, Springer Journal, Singapore	11 th February, 2020
4.	Development of a Unique Stab and Impact Resistance Material for Anti Riot Body Protector	M.S.Parmar, Neha Kapil and Nidhi Sisodia	International conference on Functional Textiles & Clothing , at IIT, New Delhi	7 th to 9 th Feb. 2020
5.	FR protective Textiles: Fire Fighter Suit and Important test methods	M. S. Parmar	AICTE sponsored FDP on Recent Innovations in Textile & Garment Design & Development at TITS, Bhiwani	14 th Jan. 2020

S.No.	Title	Author(s)	Publication/Place	Date
6.	Study on various thermal resistance textile materials for the application in protective work wear	M.S. Parmar, Ruvinder Kumari and Swami Sharan	International Conference on Advances in Textile Material and Processes Organized by UPTTI, Kanpur	December 2-3, 2019
7.	Development of wall and floor tiles material using Agro waste fibres	Nidhi Sisodia and M.S. Parmar	-do-	December 2-3, 2019
8.	Development of wall and floor tiles material using Agro waste fibres	Nidhi Sisodia and M.S. Parmar	-do-	December 2-3, 2019
9.	Analysis of 50kWp Roof-top Photovoltaic Solar Power Plant	Ramesh Chandra Yadav, Saurabh Kumar Rajput	International Conference Rajkiya Engineering College-Conference 2019 organized by the Department of Electrical Engg., REC Ambedkar Nagar in Association with IEEE	November 28-29, 2019
10.	Development of Thermal Resistance Textile materials for protective work wear	M.S. Parmar, Ruvinder Kumari and Swami Sharan	International Conference on Emerging Trends In Traditional & Technical Textiles, Dr B.R. Ambedkar, NIT Jalandhar, India	November 1-3, 2019
11.	Development of Lining and Thermal Layer for Skier wear suit	Nidhi Sisodia, Shweta Chauhan and M.S. Parmar	-do-	November 1-3, 2019
12.	Services offered by COE(PROTECH), NITRA	Arindam Basu and M.S. Parmar	Textile Value Chain, p 22-23	November 2019
13.	Effect of Pretreatment on the Smoothness Behaviour of Cotton Fabric	Nidhi Sisodia, M.S. Parmar and Saurabh Jain	Fibres & Textiles in Eastern Europe 2019; 27, 5(137): 47-52	September 24, 2019

S.No.	Title	Author(s)	Publication/Place	Date
14.	Development of a Smoothness Tester for Fabrics	M. S. Parmar, Nidhi Sisodia and Maheshwar Singh	Functional Textiles and Clothing, Springer Nature Singapore Pte Ltd. 2019, p 307	September 14, 2019
15.	Developments and characterization: Sustainable Sanitary Pad/Napkin	M.S. Parmar	International conference on Menstrual Hygiene Management & Gender Equality, Organized by ASSOCHAM, The Le-Meridian, New Delhi	September 12, 2019
16.	ITMA Review: Weaving and knitting	Abhijit Pal	Asian Textile Journal	September 2019
17.	ITMA Review: Development in Wet processing	M.S. Parmar	Asian Textile Journal	August 2019
18.	ITMA Review: Spinning developments	Arindam Basu	Asian Textile Journal	August 2019
19.	ITMA Review: QC instruments and process control	Arindam Basu	Asian Textile Journal	August 2019
20.	Application of agricultural waste in composites and milkweed fibre in thermal wear	M.S. Parmar	BMD, Bhilwara Towers, NOIDA	July 30, 2019
21.	Innovation opportunity on personal protection equipment	M.S. Parmar	Conference on "Opportunities in high growth segments of technical textiles" organized by North India Section of The Textile Institute (NISTI) and ITTA at Silver Oak Room, India Habitat Center (IHC), New Delhi	July 12, 2019

S.No.	Title	Author(s)	Publication/Place	Date
22.	Development of smart textiles for medical care	Arindam Basu, S. Jain & V.S. Khoiwal	Conference proceeding, Springer Nature, Pages 101-106	2019
23.	Enhancing the mechanical toughness of epoxy-resin composites using natural corn stalk fibre as reinforcements	Saroj Devi, Charu Gupta, MS Parmar and Shankar Lal Jat	International Journal of Chemical Studies, 7(5): p 2017-2023	2019
24.	Conference reports - Fifty eight Joint Technological Conference of ATIRA, BTRA, SITRA and NITRA	R K Gaur, M.S. Parmar, A Basu	Indian Journal of Fibre & Textile Research, Vol. 44, pp. 253-255	June 2019
25.	Comfort Properties of Protective Textiles: Critical Review	Arindam Basu	Asian Textile Journal	June 2019
26.	Burning Behaviour of aramid and FR viscose blended fabrics	Noopur Sonee, Chitra Arora, M.S. Parmar	Indian Journal of Fibre & Textile Research, Vol. 44, pp. 238-243	June 2019
27.	Technical properties of reinforced polyester and epoxy composites of corn (Zea mays) stalk fibre	Saroj Devi, Charu Gupta, M.S. Parmar, Shankar Lal, Nidhi Sisodia and Neha Kapil	Indian Journal of Agriculture Science, 89 (5), 873-6	May 2019
28.	Difficulties faced by CAPFs in procuring BR Jacket, Helmet & BR Vehicles	M.S. Parmar	Panel discussion at CGO Complex, New Delhi	22 nd May 2019
29.	FR Textiles- Test Methods for Specific Requirements	M.S. Parmar	Bureau of Indian Standards, Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi-110002	22 nd May 2019
30.	Evaluation of Boiler Efficiency Through Machine Learning Techniques	B.K. Sharma	21 st Annual Conference on Modeling Optimization and Computing, SRM University, Modi Nagar	27 th April 2019

TRAINING PROGRAMS, WORKSHOPS AND SEMINARS CONDUCTED

S. No.	Nature of Program	Venue	Division	No. of batches	No. of trainees
1.	Training program on Awareness on ISO/IEC 17025:2017 and Internal Auditing	Reliance industries Ltd, Naroda, Ahmedabad	Marketing & Publications	01	11
2.	9-day Training of Trainers (ToT) program	NITRA, Ghaziabad	Mktg & Pub./ Garment Centre/MPD (Spg.&Wvg.)/ CQE	01	15
3.	Direct Assessment of Existing Trainers (ToT) Program	NITRA, Ghaziabad	Mktg & Pub./ Garment Centre	01	09
4.	Awareness Program for Training of Trainers (ToT)	NITRA, Ghaziabad	Mktg & Pub./ Garment Centre	01	07
5.	6 day Training of Assessors (TOA) program in association with Textile Sector Skill Council (TSC) New Delhi	NITRA, Ghaziabad	Mktg & Pub./ Garment Centre/MPD (Spg.&Wvg.)/ CQE	01	45
6.	Workshop on Rationalization/ validation of QPs related to weaving and knitting sub-sectors organized with TSC (Textile Sector Skill Council), New Delhi	Hotel A, Ludhiana	Mktg & Pub./ MPD (Spg.& Wvg.)	01	35
7.	10 day Training of Trainers program	NITRA, Ghaziabad	Mktg & Pub./ Garment Centre/MPD (Spg.&Wvg.)/ CQE	01	31
8.	Textile Manufacturing and Testing	NITRA, Ghaziabad	Garment Centre/PQE	01	11
9.	Apparel Designing and Merchandising	NITRA, Ghaziabad	Garment Centre	01	04

S. No.	Nature of Program	Venue	Division	No. of batches	No. of trainees
10.	Weaving Technology	NITRA, Ghaziabad	MPD (Spg. &Wvg.)	01	07
11.	Textile Manufacturing and Testing	NITRA, Ghaziabad	MPD (Spg. &Wvg.)/PQE	01	35
12.	Weaving and Testing	NITRA, Ghaziabad	MPD (Spg. &Wvg.)/PQE	01	07
13.	2 days training Industry Collaborative Project of BE (Electrical Engg) Final year students	Madhav Institute of Technology & Science, Gwalior, MP	Engineering	01	11
14.	Denim washing and finishing	NITRA, Ghaziabad	CQE	01	53
15.	Spinning Workforce (Trainers & Ring-frame workers)	CTM, Kathua	MPD (Spg. &Wvg.)	01	60
16.	Executive Development Program for Textile & Apparel Industry	NITRA, Ghaziabad	Mktg.&Pub./ Garment Centre	01	06
17.	Fashion Marketing and Merchandising	NITRA, Ghaziabad	Garment Centre	01	35
18.	Apparel Design and Quality Control	NITRA, Ghaziabad	Garment Centre	01	23
19.	Apparel Production and Industrial Engg.	NITRA, Ghaziabad	Garment Centre	01	28
20.	Textile Technology and Management (DLP)	NITRA, Ghaziabad	Garment Centre	01	32
21.	Apparel Manufacturing & Merchandising (DLP)	NITRA, Ghaziabad	Garment Centre	01	12
22.	Quality Evaluation of Textiles and Garments (DLP)	NITRA, Ghaziabad	Garment Centre	01	21
23.	Summer Training programs for College Students	NITRA, Ghaziabad	Garment Centre	01	64
24.	Summer Training programs for College Students	NITRA, Ghaziabad	SDC	01	24

CONSULTANCIES PROVIDED

S.No.	Type of Consultancy	Division	No. of Units
1.	Third Party Inspection of poly carbonate shields	PTTD	01
2.	Third Party Inspection of ergonomically designed backpack	PTTD/MPD (Spg.&Wvg.)	01
3.	Third Party Inspection of Cloth disruptive polyester cotton	PQE	01
4.	Third Party Inspection of Cloth Gabardine disruptive	PQE/MPD (Spg.&Wvg.)/CQE	15
5.	Third Party Inspection of Woolen Jersey	PQE/MPD (Spg.&Wvg.)/CQE	19
6.	Third Party Inspection of T-shirts	PQE/MPD (Spg.&Wvg.)	04
7.	Third Party Inspection of Angola Shirting	PQE/MPD (Spg.&Wvg.)/CQE	13
8.	Third Party Inspection of Coat combat	PQE/MPD (Spg.&Wvg.)	08
9.	Third Party Inspection of BD Serge /Serge (50/50)	CQE/MPD (Spg.&Wvg.)	04
10.	Third Party Inspection of Cotton Terry Towel	PQE/MPD (Spg.&Wvg.)/CQE	04
11.	Third Party Inspection of Sleeping bag	PQE/MPD (Spg.&Wvg.)/CQE	05
12.	Third Party Inspection of Half sleeve round neck vest	CQE	01
13.	Third Party Inspection of Cotton tape newar	PQE/MPD (Spg.&Wvg.)/CQE	08
14.	Third Party Inspection of Rain cape	MPD (Spg.&Wvg.)	02
15.	Third Party Inspection of Vest thermal/Vest cotton	PQE/MPD (Spg.&Wvg.)/CQE	08
16.	Third Party Inspection of Twill weave wool fabric serge	MPD (Spg.&Wvg.)/CQE	04
17.	Third Party Inspection of Under pant thermal	MPD (Spg.&Wvg.)/PQE	06
18.	Third Party Inspection of Cap comforter woolen uniform	MPD (Spg.&Wvg.)/CQE	02
19.	Third Party Inspection of Blanket	CQE/PQE	06

S.No.	Type of Consultancy	Division	No. of Units
20.	Third Party Inspection of Coat parka	MPD (Spg.& Wvg.)/CQE	01
21.	Third Party Inspection of Kit Bag	PQE	02
22.	Third Party Inspection of Plastic bottle	PQE/PTTD	02
23.	Third Party Inspection of Short sleeve vest	MPD (Spg.& Wvg.)/PQE	01
24.	Third Party Inspection of Ruck sack	MPD (Spg.&Wvg.)	01
25.	Development/Improvement of systems and processes	Garment Centre	01
26.	Infrastructure Requirement for Setting up Undergarment Manufacturing Unit	Garment Centre	01
27.	Machinery Maintenance Audit	MPD (Spg.&Wvg.)	05
28.	Preparation of DPR for upgradation of 21 MLD CETP (Ph-1)	Environment	01
29.	Preparation of Adequacy Report of ETP	Environment	04
30.	Study and preparation of Performance Assessment Report of ETP	Environment	01
31.	Energy Audits	Engineering	16
32.	Power Quality Audit	Engineering	01
33.	Power factor and power quality audit	Engineering	01
34.	Diagnostic study of 21 MLD CETP	Environment	01
35.	Evaluation of assessment agencies for empanelment by Textile Sector Council (TSC), New Delhi	Mktg.&Pub./ Garment Centre	01

STAFF PARTICIPATION IN HRD PROGRAMS

Sl. No.	Details of the program	Venue	Date	Participants status
1.	Stakeholders' Workshop appraising the changes in Approval Process Handbook 2020-21	AICTE HQ, New Delhi	12 th Feb. 2020	Mr. Avnish Kr Sharma Mr. Rohitash Singh (As delegates)
2.	National Conference on Energy Efficiency Solutions for Industries	Hotel Lalit, New Delhi	29 th Jan. 2020	Mr. R.C. Yadaw (As delegate)
3.	8 days FDP on Universal Human Value & Professional Ethics"	ABES Engg. College, Ghaziabad	12 th Jan.- 19 th Jan. 2020	Mr. R.C. Yadaw (As delegate)
4.	National Workshop on Energy Conservation Guidelines for MSMEs organized by BEE and TERI	Magnolia Hall, India Habitat Centre, Lodhi Road, New Delhi	December 10, 2019	Mr. Vikas Sharma, Mr. Sourabh Jain & Mr. R.C. Yadaw (As delegates)
5.	3 rd edition of National Public Procurement Conclave 2019 organized by CII and GeM	India Habitat Centre, New Delhi	December 5-6, 2019	Mr Vineet Tyagi (As delegate)
6.	Two day Capacity Building Workshop for establishing Trainer-Assessor Academies in India organized by National Skill Development Corporation and facilitated by Singapore Polytechnic International with assistance from Temasek Foundation, Singapore	India Habitat Centre, New Delhi.	December 4-5, 2019	Mr. R.K. Gaur (As delegate)
7.	International Conference on Advances in Textile Materials and Processes [ATMP-2019], Organised by UPTTI, Kanpur	UPTTI, Kanpur	December 2-3, 2019	Dr. M.S. Parmar (As Paper presenter and also Chairman of the session). Ms. Nidhi Sisodia (As Paper presenter)
8.	Techtextil 2019	NESCO Exhibition Centre Goregaon, Mumbai	Nov 20-22 , 2019	Mr. Vineet Tyagi & Mr. Mohit Pandey (As Exhibitors)

Sl. No.	Details of the program	Venue	Date	Participants status
9.	Workshop on Customer Relationship Management	Conference Hall, CII Office, Gurugram	November 19, 2019	Mr. Sanjeev Shukla, Ms. Neha Kapil Mr. Maheshwar Singh (As delegates)
10.	New Product Launch & JaNets by JUKI INDIA	Tivoli Royal Court, Okhla Indl. Area Phase – 1, New Delhi	Nov 15, 2019	Mr.Vivek Agarwal, Mrs.Shweta Saxena, Mrs.Geeta Sharma and Mr. J.S. Yadav (As delegates)
11.	4 days National Training Program on “Bio Gas Technology: Demonstration and its applications”	Sardar Swaran Singh National Institute of Bio Energy, Kapurthala	Nov 5-6, 2019	Mr. Vikas Sharma (As delegate)
12.	Examination reform workshop	UP Institute of Design (UPID), Noida	September 26, 2019	Dr. Bhaskar Gupta (As delegate)
13.	15 th International Conference on Apparels and Home Textiles	India Habitat Centre, New Delhi	September 7, 2019	Mr. Vivek Agarwal (As Special Invitee)
14.	Master strokes to lead your business	IMT, Ghaziabad	August 21, 2019	Mr. R.K. Gaur (As delegate)
15.	Incoterms 2010 & Import and Export Documentation & Procedures	PHD House, New Delhi	August 8, 2019	Mr. Vivek Agarwal & Mr. Partha Basu (As delegates)
16.	Latest weaving machines and operations particularly Rapier and Airjet looms	Surya Processors, Ghaziabad	June 24-26, 2019	Mr. Jai Narain (As participant)
17.	Latest weaving machines and operations particularly Rapier and Airjet looms	Surya Processors, Ghaziabad	June 20-29, 2019	Mr. Tej Pratap Mr. B.K. Talukdar Mr. Mohd. Mudainr Mr. V. Ramesh (As participants)
18.	5 days FDP on Sustainable green manufacturing & its applications’	Krishna Engineering College, Ghaziabad	June 17-21, 2019	Mr. R.C. Yadaw (As delegate)

Sl. No.	Details of the program	Venue	Date	Participants status
19.	Latest weaving machines and operations particularly Rapier and Airjet looms	FIC, NITRA, Ghaziabad	June 15-17, 2019	Mr. Jai Narain (As participant)
20.	Latest weaving machines and operations particularly Rapier and Airjet looms	FIC, NITRA, Ghaziabad	June 10-19, 2019	Mr. Tej Pratap Mr. B.K. Talukdar Mr. Mohd. Mudainr Mr. V. Ramesh (As participant)
21.	Accreditation: Addition of value to supply chains	Stein Hall, India Habitat Centre, New Delhi	June 10, 2019	Mr. R.K. Gaur Mr. Vineet Tyagi (As delegates)
22.	Latest garment processing & finishing machines and operations	TCNS, Noida	June 6-13, 2019	Mrs. Neha Kapil (As participant)
			June 6 & 14-21, 2019	Mrs. Shweta Chauhan (As participant)
			June 6-21, 2019	Mr. J.S. Yadav (As participant)
23.	Communications for Success	IMT, Ghaziabad	May 30, 2019	Mr. R.K. Gaur (As delegate)
24.	Recent Trends in Data Science and its Application	BBDIT, Ghaziabad.	May 10, 2019	Dr. B.K. Sharma (as Speaker)
25.	21 st Annual Conference on Modeling Optimization and Computing	SRM University, Modi Nagar	April 27, 2019	Dr. B.K. Sharma (as Speaker)

ADDITIONAL SERVICES TO NITRA MEMBERS

NITRA has been providing laudable services to member units since its inception in 1975. 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 intensify 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.	Computer Sanchar Soochna	Monthly
8.	Competition Success Reviews	Monthly
9.	CSI Communication	Monthly
10.	Express Computer	Monthly
11.	Digit	Monthly
12.	India Today (English)	Weekly
13.	Indian Journal of Fibre & Textile Research	Quarterly
14.	Indian Textile Journal	Monthly
15.	Journal of Textile Association	Monthly
16.	Journal of Textile Institute	Bi-monthly
17.	Textile Progress	Quarterly
18.	The Textile Magazine	Bi-monthly
19.	Textiles Magazine	Quarterly

JOURNALS RECEIVED ON COMPLEMENTARY BASIS

	Name of Journal	Frequency
1.	Apparel India	Monthly
2.	Apparel Views	Monthly
3.	BTRA Bulletin	Monthly
4.	BTRA Scan	Quarterly
5.	Banasthali News letter	Monthly
6.	DFU's Inside Fashion	Quarterly
7.	Fibre to Fashion	Monthly
8.	Garmentline	Monthly
9.	Garmex	Monthly
10.	Hosiery Times	Monthly
11.	OGTC News letter	Monthly
12.	PHD Chamber's News letter	Monthly
13.	SIMA Review	Monthly
14.	SITRA Focus	Bi-monthly
15.	SITRA News	Bi-monthly
16.	SITRA Trends	Quarterly
17.	Textile Excellence	Monthly
18.	Textile Mirror	Bi-monthly
19.	Textile Times	Monthly
20.	Textile Value Chain	Monthly

PLACEMENT OF STUDENTS OF NITRA TECHNICAL CAMPUS
(As on 31.03.2020)
Branch : Textile Technology

S.No.	Student Name	Name of Company
<u>2018-19</u>		
1.	Priya Kumari	Mahima Fibres Pvt. Ltd.
2.	Lakshyajit Gogoi	Mahima Fibres Pvt. Ltd.
3.	Madan Yadav	Mahima Fibres Pvt. Ltd.
4.	Sameer Sen	Sangam India Ltd.
5.	Suneel Kumar	Satyam Polyknits, Haryana
6.	Akshay Kochhar	Raksha Textiles
<u>2019-20</u>		
7.	Avinash Kumar	Winsome Yarns Ltd.
8.	Rituraj Sahu	Winsome Yarns Ltd.
9.	Mohammad Osama	Vardhman Textiles Ltd.
10.	Ankush Kumar	Trident Group Ltd.
11.	Premansh Sen	Alok Industries Ltd.
12.	Anuj Kumar	Alok Industries Ltd.
13.	Poornima Singh	Alok Industries Ltd.
14.	Aman Gupta	Nahar Industrial Enterprises Ltd.
15.	Sumit Kumar Singh	Nahar Industrial Enterprises Ltd.
16.	Mahak Dev Arora	Nahar Industrial Enterprises Ltd.
17.	Onkar Prashun	Nahar Industrial Enterprises Ltd.
18.	Varun Rana	Nahar Industrial Enterprises Ltd.
19.	Muskan Omar	Nahar Industrial Enterprises Ltd.
20.	Aafreen Fatma	Nahar Industrial Enterprises Ltd.
21.	Chandan Neog	Nahar Industrial Enterprises Ltd.
22.	Dharmesh Dubey	Nahar Industrial Enterprises Ltd.
23.	Darshita Gangwar	Rajasthan Spg. & Wvg. Mills Ltd.
24.	Ravi Singh Yadav	Rajasthan Spg. & Wvg. Mills Ltd.
25.	Hemant Kumar	Star Safety Hub, Faridabad
26.	Prakarsh Tiwari	Star Safety Hub, Faridabad
27.	Atul Mani Dubey	Star Safety Hub, Faridabad

Branch : Textile Chemistry

S.No.	Student Name	Name of Company
<u>2019-20</u>		
1.	Himanshi Raghuvarshi	Vardhman Textiles Ltd.
2.	Devendra Pratap Singh	Vardhman Textiles Ltd.
3.	Shubhangi Singh	Trident Group Ltd.
4.	Krishna Jaiswal	Alok Industries Ltd.
5.	Balkrishna Soni	Alok Industries Ltd.
6.	Jayant Sachan	Alok Industries Ltd.
7.	Shohit Sharma	Alok Industries Ltd.
8.	Sneha Joshi	Alok Industries Ltd.
9.	Shraddha Yadav	Nahar Industrial Enterprises Ltd.
10.	Shreya Pathak	Nahar Industrial Enterprises Ltd.
11.	Sonal Yadav	Nahar Industrial Enterprises Ltd.
12.	Vishal Kumar Gupta	Nahar Industrial Enterprises Ltd.
13.	Shivangi Mishra	Nahar Industrial Enterprises Ltd.
14.	Ravindra Patel	Rajasthan Spg. & Wvg. Mills Ltd.

Branch : Computer Science & Engineering

S.No.	Student Name	Name of Company
<u>2018-19</u>		
1.	Abhishek Verma	Joulesto Watts Business Solutions Pvt Ltd.
2.	Ayush Asthana	Moody's Analytics Knowledge Services, Gurugram
3.	Amar Singh	Moody's Analytics Knowledge Services, Gurugram
4.	Vinay Kumar Srivastava	Moody's Analytics Knowledge Services, Gurugram
5.	Diksha Chaudhary	Magnon Eg+, Noida
6.	Sandeep Kumar Gupta	Magnon Eg+, Noida
7.	Smriti Pandey	Magnon Eg+, Noida
8.	Anjali Upadhyay	NTT Data Information Processing Services Pvt. Ltd., Noida
9.	Sakshi Varshney	NTT Data Information Processing Services Pvt. Ltd., Noida
10.	Unnati Katiyar	NTT Data Information Processing Services Pvt. Ltd., Noida
11.	Mayank Pokhriyal	IBM, Bangalore
12.	Shiwani Raghav	Cyber Cure Technologies Pvt. Ltd., Ghaziabad
13.	Shivani Verma	Nivesh Global, New Delhi
14.	Raj Goswami	Ambition Technology, Noida
15.	Dheeraj Kumar	Bankedeg, Noida
<u>2019-20</u>		
16.	Nishtha Singh	Continum Global, Gurugram
17.	Sachin Srivastava	Continum Global, Gurugram
18.	Pragya Gupta	EINN Software Pvt. Ltd., Noida
19.	Shikha Gupta	EINN Software Pvt. Ltd., Noida
20.	Shresth Deep Gupta	EINN Software Pvt. Ltd., Noida
21.	Deepak Kumar Yadav	AVL India Pvt. Ltd.
22.	Satyendra Pal Singh	Nahar Industrial Enterprises Ltd., Larlu
23.	Shivam Rajput	Nahar Industrial Enterprises Ltd., Larlu
24.	Varun Gupta	Infosys, PAN India
25.	Riya Singhal	Infosys, PAN India

S.No.	Student Name	Name of Company
26.	G Aishwarya	Tech Mahindra, PAN India
27.	Abhishek Singh	Tech Mahindra, PAN India
28.	Vicky Maddheshiya	HCL Technologies ,PAN India
29.	Gaurisha Sharma	HCL Technologies ,PAN India
30.	Nikki Tiwari	HCL Technologies ,PAN India
31.	Suchitra Singh	EINN Software Pvt. Ltd., Noida
32.	Suvigya Jaiswal	Infosys, PAN India
33.	Gauri Singh	Capgemini IT India Pvt. Ltd., Gurugram
34.	Amit Singh Rawat	NIIT Technologies
35.	Sanket Tiwari	NTT Data
36.	Utkarsh Srivastava	Daffodil Software
37.	Yathish Mishra	Daffodil Software
38.	Arpit Kumar	Tata Consultancy Services Ltd.
39.	Deepak Singh	Tata Consultancy Services Ltd.
40.	Lucky Tyagi	App Squadz Technologies Pvt. Ltd.
41.	Divyanshi Chaudhary	App Squadz Technologies Pvt. Ltd.
42.	Amit Sahu	Thoughts2Binary Consulting and Solutions LLP



Dr. Arindam Basu (C), Director General being flanked by Sh. Abhijit Pal (L), Officiating Director and Dr. M. S. Parmar (R), Jt. Director (A) at ITMA Fair, Barcelona, Spain during the visit in June 2019



Dr. Arindam Basu, DG, NITRA, addresses a workshop on “Review & Rationalization of QPs in Weaving and Knitting Sub-sectors” at Ludhiana on 25th January 2020



MoU for transfer of technology on “Development of stab and impact resistant material for anti-riots body protector” at Technotex, Mumbai. Seen on the occasion are Dr. M. S. Parmar (2nd from left), Jt. Director (A), NITRA, Mr. Manoj Modi (centre), MD, Applied Systems and Dr. Arindam Basu (R), DG, NITRA



A section of NTC B.Tech. students seen with Dr. Arindam Basu, Director General, Sh. Abhijit Pal, Officiating Director and senior officials from Nahar Industrial Enterprises Ltd. after being placed with the group on 5th December 2019

**AUDITOR'S REPORT
&
BALANCE SHEET**

B.K. KAPUR & COMPANY

CHARTERED ACCOUNTANTS

17, NAVYUG MARKET, GHAZIABAD-201001
PHONE: 0120-2790947, 2790951

AUDITOR'S REPORT

1. We have audited the attached Balance Sheet of NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION, Ghaziabad as at 31st March, 2020 and Income and Expenditure Account for the year ending 31st March, 2020 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 require 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 explanations 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 case of balance sheet, of the state of Affairs of the Association as at 31st March, 2020, and
 - ii. In the case of Income and Expenditure A/c of the Excess of Income over Expenditure for Accounting year ending on that date.

For B.K. KAPUR & COMPANY
CHARTERED ACCOUNTANTS
FRN-000852C

Sd/-
(CA M.S. KAPUR)
PARTNER
M.NO. - 074615

UDIN – 20074615AAAADO1467

Place: Ghaziabad
Date : 7th August 2020

NORTHERN INDIA TEXTILE RESEARCH ASSOCIATION, GHAZIABAD
SOURCES OF FUNDS AND MANNER OF EMPLOYMENT AS AT 31ST MARCH 2020

(Amount in Rs.)

Sources of Funds	SCH. No.	As at 31.3.2020	As at 31.3.2019
Capital Funds:			
i) Corpus	1	83,27,219	82,82,219
ii) Assets created out of Grants	2	50,94,03,367	50,71,48,777
Reserves & Surplus	3	40,28,337	39,58,661
Depreciation Fund	4	10,12,40,308	9,82,71,566
R & D Reserve	5	4,01,61,589	3,81,61,589
Grants (receivable)/ pending utilization	6	(2,77,83,234)	(1,59,25,812)
Current Liabilities	7	1,81,71,994	1,70,70,989
Total :		65,35,49,580	65,69,67,989
Manner of Employment			
Fixed Assets	8	57,74,66,951	57,49,82,566
Investments against Earmarked fund.	9	1,52,31,731	1,90,00,000
Current Assets, Loans & Advances	10	6,08,50,898	6,29,85,423
Total:		65,35,49,580	65,69,67,989

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
 Place : Ghaziabad
 Date : 07/08/2020

STATEMENT OF INCOME GENERATION AND ITS UTILISATION

FOR THE YEAR ENDING 31ST MARCH, 2020

(Amount in Rs.)

INCOME GENERATION	SCH. No.	As at 31.3.2020	As at 31.3.2019
Grant-in-Aid to meet Recurring Expenditure (Non Plan)		1,30,00,000	1,00,00,000
Industry Contribution & Educational	11	6,63,39,933	6,68,82,624
Other Income	12	1,00,30,726	1,10,92,871
Grant-in-Aid to meet Expenditure on Projects	14	64,81,795	79,73,911
Grant-in-Aid to meet Expenditure at Powerloom Service Centres	15	1,37,79,545	1,56,94,290
Total :		10,96,31,999	11,16,43,696
Deficit adjusted from R&D Reserve		-	1,49,54,208
UTILISATION			
Expenditure of Establishment	13	6,12,20,972	6,31,84,333
Expenditure on Projects	14	70,62,660	87,02,896
Expenditure on Powerloom Service Centres	15	1,60,59,821	1,65,44,260
Expenditure on General Administration	16	2,02,50,128	3,48,20,198
Transfer to Depreciation Fund		29,68,742	33,46,217
Total :		10,75,62,323	12,65,97,904
Balance available for Appropriation		20,69,676	-
Transfer to R&D Reserve		20,00,000	-
Surplus transferred to Balance Sheet		69,676	-

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

Place : Ghaziabad

Date : 07/08/2020

SCHEDULE – 1

(Amount in:Rs.)

CAPITAL FUNDS	As at 31.3.2020	As at 31.3.2019
Capital		
Corpus		
Admission Fees (Members)- Balance at the beginning	24,66,779	24,01,779
For the current year	45,000	65,000
Sub Total:	25,11,779	24,66,779
b) Capital Contribution		
Balance at the beginning	34,13,530	34,13,530
Sub Total :	34,13,530	34,13,530
c) Donations		
Balance at the beginning	24,01,910	24,01,910
Sub Total :	24,01,910	24,01,910
Total :	83,27,219	82,82,219

SCHEDULE – 2
(Amount in Rs.)

CAPITAL FUND - ASSETS CREATED OUT OF GRANTS RECEIVED FROM GOVERNMENT AGENCIES	Balance As on 31.3.2019	Additions / Write-off during the year	Balance As on 31.3.2020
<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	6,50,97,322	3,56,832	6,54,,54,154
Sub Total :	6,50,97,322	3,56,832	6,54,54,154
<u>Capital Reserve : III</u>			
(Other Agencies) – National Jute Board DST	38,60,698	-	38,60,698
Sub Total :	38,60,698	-	38,60,698
<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>	5,14,175	-	5,14,175
Sub Total :	5,14,175	-	5,14,175
<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 31.3.2019	Additions / write-off during the year	Balance As on 31.3.2020
<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	1,32,11,870	18,97,758	1,51,09,628
Sub Total :	1,32,11,870	18,97,758	1,51,09,628
<u>Capital Reserve : X -</u> (CAD Tanda)	4,13,482	-	4,13,482
Sub Total :	4,13,482	-	4,13,482
<u>Capital Reserve ; XI -</u> (COE Protech)	15,59,39,236	-	15,59,39,236
Sub Total :	15,59,39,236	-	15,59,39,236
<u>Capital Reserve ; XII -</u> (ASIDE) (U.P. Govt. & Nitra)	8,43,87,200	-	8,43,87,200
<u>Capital Reserve ; XIII -</u> (ISDS)	11,88,31,627	-	11,88,31,627
<u>Capital Reserve ; XIV -</u> FIC (COE)	2,90,28,477	-	2,90,28,477
GRAND TOTAL:	50,71,48,777	22,54,590	50,94,03,367
Previous year	45,28,32,027	5,43,16,750	50,71,48,777

SCHEDULE-3*(Amount in Rs)*

RESERVES AND SURPLUS	As at 31.3.2020	As at 31.3.2019
Surplus accumulated: Excess of Income over Expenditure		
Balance at the beginning of Financial Year	39,58,661	39,58,661
Surplus for the year as per Account annexed	69,676	-
Total :	40,28,337	39,58,661

SCHEDULE – 4**(Amount in Rs.)**

DEPRECIATION FUND	As at 31.3.2020	As at 31.3.2019
Opening Balance	9,82,71,566	9,49,25,349
Depreciation for the year	29,68,742	33,46,217
Total :	10,12,40,308	9,82,71,566

SCHEDULE – 5

(Amount in Rs .)

R & D RESERVE	As at 31.3.2020	As at 31.3.2019
a) Opening Balance	3,81,61,589	5,31,15,797
+ Transfer from Statement of Income generation	20,00,000	-
- Deficit Adjusted	-	1,49,54,208
	4,01,61,589	3,81,61,589
b) Income from PLSCs' 15,79,545		-
(-) Spent under capex	-	-
Less : Adjustment during the year 15,79,545	-	-
Total :	4,01,61,589	3,81,61,589

SCHEDULE – 6

(Amount in Rs.)

S. No.	GRANTS (Receivable)/ PENDING UTILISATION	Balance at the beginning	Receipts During the year	Adjustment during the year	Utilised during the year		Balance carried forward
					Cap. Exp.	Rec. Exp.	
I.	NON-PLAN (Ministry of Textiles)						
	Non-plan (Ministry of Textiles)	-	1,30,00,000	-	-	1,30,00,000	-
	NON-PLAN Previous Year	-	1,00,00,000	-	-	1,00,00,000	-
II.	Plan (Ministry of Textiles & other Agencies)						
1.	Designing a compressed air monitoring system optimize energy consumption in a textile mill.	(14,59,245)	-	-	-	-	(14,59,245)
2.	Development of specialty embroidery yarn for application in stretchable fabric like knitted fabrics	(8,64,000)	-	-	-	-	(8,64,000)
3.	Study to Enhance Indian Apparel Exports	(13,38,750)	-	-	-	-	(13,38,750)
4.	Development of Electronic Drape Meter (DST) Based on Image Analysis Technique	(8,08,861)	5,93,989	2,14,872	-	-	-
5.	Development of Multi Layered Flame & Thermal Resistance Fabric for Fire Fighter Clothing	(13,85,444)	-	-	-	-	(13,85,444)
6.	Development of smart protective textiles for fire fighter soldier & old age people.	(27,161)	-	27,161	-	-	-

S. No.	GRANTS (Receivable)/ PENDING UTILISATION	Balance at the beginning	Receipts During the year	Adjustment during the year	Utilised during the year		Balance carried forward
					Cap. Exp.	Rec. Exp.	
7.	Development of Protective Work Wear for Cement Porters	(14,67,819)	-	-	-	-	(14,67,819)
8.	Development of Fabric Smoothness Tester	(9,67,382)	-	-	-	-	(9,67,382)
9.	New approaches to reduce water consumption in textile wet processing	(15,38,166)	7,38,400	-	7,10,970	9,23,854	(24,34,590)
10.	Development of value added product from different fibres produced in Himalayan Region (Basic research)	(1,57,74,388)	-	-	-	40,95,997	(1,98,70,385)
11.	Development of Air cleaner home textiles to reduce indoor air pollution	8,91,371	-	-	3,56,832	9,31,496	(3,96,957)
12.	Common Effluent Treatment Plant (CETP) Azrakpur, Bhuj	19,18,180	14,60,000	-	10,00,000	10,30,448	13,47,732
	Sub Total:	(2,28,21,665)	27,92,389	2,42,033	20,67,802	69,81,795	(2,88,36,840)
	Previous Year:	57,82,900	2,70,18,200	-	4,76,48,854	79,73,911	(2,28,21,665)

S. No.	GRANTS (Receivable)/ PENDING UTILISATION	Balance at the beginning	Receipts During the year	Adjustment during the year	Utilised during the year		Balance carried forward
					Cap. Exp.	Rec. Exp.	
III.	POWERLOOM SERVICE CENTRES						
1.	TANDA	-	12,00,000	1,60,400	-	13,60,400	-
2.	MEERUT	-	17,00,000	1,70,800	-	18,70,800	-
3.	LUDHIANA	-	15,00,000	1,62,060	-	16,62,060	-
4.	KANPUR	-	17,00,000	4,42,008	-	21,42,008	-
5.	GORAKHPUR	-	12,00,000	51,600	-	12,51,600	-
6.	PANIPAT	-	17,00,000	1,61,559	-	18,61,559	-
7.	BHILWARA	-	17,00,000	69,451	-	17,69,451	-
8.	VARANASI	-	15,00,000	3,61,667	-	18,61,667	-
	Sub Total:	-	1,22,00,000	15,79,545	-	1,37,79,545	-
	Previous Year:	(67,81,187)	1,22,00,000	99,18,405	-	1,53,37,218	-
IV	PLSC Varanasi	18,94,729	-	-	9,84,051	-	9,10,678
V	Swachh Bharat Abhiyan	1,42,928	-	-	-	-	1,42,928
VI.	ISDS						
	ISDS Project	48,58,196	-	48,58,196	-	-	-
	Grand Total:	(1,59,25,812)	2,79,92,389	(48,58,196) 18,21,578	30,51,853	3,37,61,340	(2,77,83,234)
	Previous Year:	1,00,33,495	4,92,18,200	56,127 1,52,93,952	5,67,47,131	3,36,68,201	(1,59,25,812)

SCHEDULE – 7**(Amount in Rs.)**

S.NO.	CURRENT LIABILITIES	As at 31.3.2020	As at 31.3.2019
1.	Sundry Creditors	15,05,913	16,84,003
2.	Outstanding Liabilities	65,73,384	61,85,272
3.	Security & other Deposits	1,00,92,697	92,01,714
Total :		1,81,71,994	1,70,70,989

SCHEDULE – 8

(Amount in Rs.)

S. No.	FIXED ASSETS	Total cost as on 31.3.2019	Additions during the Year	Total cost as on 31.3.2020
1.	Building*	2,62,99,861	-	2,62,99,861
2.	Air conditioning Plant & Room Air-Conditioners	4,02,015	-	4,02,015
3.	Furniture A/c	19,58,035	-	19,58,035
4.	Fixture & Fittings	14,12,105	14,880	14,26,985
5.	Office Equipments	79,62,286	47,912	80,10,198
6.	Cooler (Room & Water)	6,46,384	-	6,46,384
7.	Vehicles	20,03,390	-	20,03,390
8.	Fire Extinguisher	1,36,288	-	1,36,288
9.	Intercom, Telephones	2,84,542	-	2,84,542
	Machinery & Equipments:			
	A. In House R&D	2,18,95,044	1,52,928	2,20,47,972
	B. Sponsored Projects**	7,72,01,676	3,56,832	7,75,58,508
	C. CAD & Powerloom Service Centres**	2,94,26,715	19,11,833	3,13,38,548
	D. Testing Lab, Panipat Bhilwara & Meerut**	1,23,89,045	-	1,23,89,045
	E. Testing Lab, NITRA, Ghaziabad**	47,78,640	-	47,78,640
	F. Centre of Excellence Protech **	15,59,39,236	-	15,59,39,236
	G. Focus Incubation Centre (CoE) **	2,90,28,477	-	2,90,28,477
10.	ASIDE Govt. share **	5,77,20,000	-	5,77,20,000
	NITRA share	2,66,67,200	-	2,66,67,200
11.	ISDS Project **	11,88,31,627	-	11,88,31,627
	Grand Total :	57,49,82,566	24,84,385	57,74,66,951
	Previous Year:	52,00,75,176	5,49,07,390	57,49,82,566

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 – 9

(Amount in Rs.)

S. No.	Investments against Earmarked fund (FDR with Banks)	As at 31st March 2020	As at 31st March 2019
1.	FDR with Banks	1,52,31,731	1,90,00,000
Total :		1,52,31,731	1,90,00,000

SCHEDULE – 10

(Amount in Rs `)

S.No.	CURRENT ASSETS & LOANS AND ADVANCES	As at 31.3.2020	As at 31.3.2019
1.	Sundry Debtors	48,33,199	75,02,487
2.	Advance	3,91,442	3,44,203
3.	Sundry Deposits	17,68,894	16,34,818
4.	Prepaid Expenses	8,09,535	7,09,368
5. a)	Cash in Hand	71,162	1,22,798
b)	Balance with Banks	(97,183)	60,62,893
6.	Other Receivables	1,39,78,477	1,44,98,544
7.	FDR with Banks	3,77,22,791	3,03,14,605
8.	Accrued Income	13,72,581	17,95,707
Total :		6,08,50,898	6,29,85,423

SCHEDULE – 11

(Amount in Rs `)

S.No.	INDUSTRY CONTRIBUTION & EDUCATIONAL	Current Year	Previous Year
1.	Training & Consultancy		
a)	Foreign assignments 2,54,804		
b)	ISDS & other Educational / 68,80,895 Training Prog.		
c)	Other consultancy 1,36,83,083		
d)	NTC 2,65,50,898	4,73,69,680	5,35,95,346
2.	Sample Testing Fees	1,70,88,619	1,15,32,215
3.	Income Testing Lab Bhilwara, Panipat & Meerut	10,26,634	8,37,563
4.	Membership Subscription	8,55,000	9,17,500
Total :		6,63,39,933	6,68,82,624

SCHEDULE – 12

(Amount in Rs)

S.No.	OTHER INCOMES	Current Year	Previous Year
1.	Overhead Recovery on Projects	34,70,466	39,76,142
2.	NITRA Publications	3,83,444	57,079
3.	Income from Investments	33,54,520	48,03,184
4.	Waste field cotton & Yarn & Income from land utilization	8,23,962	7,56,033
5.	Application Forms	86,000	1,18,652
6.	Miscellaneous Income	19,12,334	13,81,781
Total :		1,00,30,726	1,10,92,871

SCHEDULE – 13

(Amount in Rs)

EXPENDITURE ON ESTABLISHMENT	Current Year	Previous Year
NITRA	6,79,44,273	6,96,97,182
Sub Total :	6,79,44,273	6,96,97,182
Less : Transferred to Expenditure on Projects	67,23,301	65,12,849
Total:	6,12,20,972	6,31,84,333

SCHEDULE – 14

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

(Amount in Rs)

Sl. No.	Name of the Sponsored Project	2019-2020		2018-2019	
		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 Multi layered flame & thermal resistance fabric for fire fighter clothing	-	-	3,71,022	2,59,715
2.	Development of protective work wear for cement porters	-	-	6,84,241	4,78,969
3.	New Approaches to Reduce Water Consumption in Textile Wet Processing.	6,05,506	4,23,854	13,74,687	9,62,281
4.	Development of value added product from different fibres produced in Himalayan Region (Basic research)	40,95,997	40,95,997	55,96,913	55,96,913
5.	Development of Air cleaner home textiles to reduce indoor air pollution	13,30,709	9,31,496	3,40,629	3,40,629
6.	Common Effluent Treatment Plant Azrakpur, Bhuj	10,30,448	10,30,448	3,35,404	3,35,404
	Total :	70,62,660	64,81,795	87,02,896	79,73,911

SCHEDULE-15

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

(Amount in Rs)

S.No	Place of the Centre	2019-2020		2018-2019	
		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	15,54,416	13,60,400	14,67,800	14,67,800
2.	MEERUT	20,97,906	18,70,800	23,75,677	23,75,677
3.	KANPUR	22,73,718	21,42,008	23,15,181	23,15,181
4.	LUDHIANA	18,45,049	16,62,060	18,64,450	18,64,450
5.	GORAKHPUR	14,70,921	12,51,600	13,46,192	13,46,192
6.	PANIPAT	20,44,075	18,61,559	23,37,986	20,98,516
7.	BHILWARA	20,19,285	17,69,451	20,77,813	18,17,313
8.	VARANASI	27,54,451	18,61,667	24,02,089	20,52,089
9.	Swach Bharat Abhiyan PLSCs	-	-	3,57,072	3,57,072
TOTAL :		1,60,59,821	1,37,79,545	1,65,44,260	1,56,94,290

SCHEDULE – 16*(Amount in Rs)*

EXPENDITURE ON GENERAL ADMINISTRATION	Current Year	Previous Year
Electricity Charges & DG Running	30,65,748	30,34,322
Traveling & Conveyance	12,51,206	17,70,185
Building Maintenance & Housekeeping	8,20,613	6,06,072
Repairs Plant & Machinery, Computer, Building & others	28,94,830	19,28,858
Legal & Professional Exps.	9,64,170	11,23,780
Security Arrangement	18,81,241	21,04,439
Books, Periodicals & Publication	3,18,620	2,80,031
Advertisement exps	6,97,277	11,79,748
Insurance	2,68,228	2,30,869
Cultivation / Horticulture Exps.	6,59,178	6,23,601
Postage & Telephone Exps.	4,88,323	4,64,676
Car Running & Maintenance	1,75,138	2,14,231
Printing & Stationery	9,58,751	9,75,450
Chemicals, Glassware and Spares Stores Consumed	6,25,297	6,90,725
Training & Seminar Exps.	5,89,248	4,96,841
Meeting Exps.	2,86,685	3,63,186
In House Project Exps.	6,45,666	5,66,979
Amount Write Off.	2,78,741	1,71,93,251
Audit fees	60,000	60,000
Testing lab exps., - Panipat, Bhilwara & Meerut	2,68,473	1,77,104
Previous Year Exps.	12,19,125	-
Other Expenses	7,21,844	7,08,479
Rates & Taxes	11,11,726	27,371
Total :	2,02,50,128	3,48,20,198

SCHEDULE – 17

Accounting Policies and Notes on 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	60,000.00	60,000.00