

# TESTING FACILITIES AT NITRA FOR WATER AND INDUSTRIAL EFFLUENTS

Appearance, Color, Odor, Turbidity,  
pH Value, Conductivity, Total Solids  
(TS), Total Dissolved Solid (TDS),  
Total Suspended Solids (TSS)  
with/without TS/TDS, Fixed Solids  
(FS), Volatile Solids (VS)  
with/without TS/FS, Settleable  
Solids

Biochemical Oxygen Demand (BOD),  
Chemical Oxygen Demand (COD), Oil  
and Grease (O/G), Organic Matter,  
Acidity (Total), Alkalinity  
(Phenolphthalein), Alkalinity  
(Total M.O.), Ammonical Nitrogen,  
Bicarbonates, Boron, Carbonates,  
Chlorides, Chlorine Residual,  
Dissolved Oxygen, Fluoride,  
Hardness [Total (TH)/Ca/Mg/  
Temporary/Permanent]  
Nitrate Nitrogen, Phosphate, Silica,  
Sulfate, Sulfide, Sulfite, Iron, Total  
(T.Fe), Chromium (VI)

**Heavy metals: Cd, Co, Cu, Cr, Pb, Hg, Ni, Zn**

**Other Metals: Na, K, Mn, Fe, MPN Coliform per 100 ml**



**Northern India Textile Research Association**

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

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## NITRA NEWS

...with industry always



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### Insight

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Dear Patrons,

The last quarter of this fiscal (Apr.22 – Mar.23) has come to an end now. While we look forward to the next one, we sincerely hope that all our esteemed patrons have had excellent performance in terms of business operations and achieving business goals during the fiscal gone by. Friends, this first quarter of 2023, have been very eventful for NITRA particularly for holding the annual Research Advisory Committee (RAC) Meeting. Sh. Sandeep Hora, MD Aeronav Safety

Appliances chaired the meet in presence of Ms. Roop Rashi, IA&AS, Textile Commissioner, MoT, GoI who also attended the meet along with other experts. Total 12 R&D projects were presented by NITRA scientists. RAC members and special invitees from academia & industry had very intensive interactions and came out with many suggestions and ideas. Chairman RAC and Textile Commissioner also gave fruitful inputs for the projects.

During this period NITRA also participated in many forums such as Global Investors Summit in Lucknow wherein discussion on investments in the "Textile sector" in the state of UP took place. On the 3rd Global Textile Conclave (GTC) organized by CITI in Jaipur, NITRA spoke on TRAs commendable work in research & developments in diversified fields and approach of having a vision of 5 years ahead. On another occasion, NITRA deliberated, as one of the panelists, on "Opportunities in Bamboo sector: exports, MSME and branding" in the National Workshop "Bamboo Sector Development and Bamboo Exhibition" organized by The National Bamboo Mission, Dep. of Agriculture and Farmers Welfare at PHD House, New Delhi. Besides the above events, a seminar on "Khadi and Handlooms for Sustainable Fashion" was organized by NISTI at IIT Delhi. NITRA was a knowledge partner in this program. A large number of delegates attended the program where NITRA spoke on the importance of quality control and usages of environment friendly wet processing that needs to be strengthened for making them sustainable both environmentally and economically.

In its continuous pursuit for excellence, NITRA, during this period signed a Memorandum of Understanding (MOU) with Govt. Polytechnic, Hisar (Haryana) for advising on implementation of quality education; better exposure to students; conducting industrial training for students and jointly organizing Seminars, Exhibitions, and Symbiosis etc. NITRA's academic wing NITRA TECHNICAL CAMPUS also hosted two important events, Parichay - the Freshers Party-23 and Sports Meet - 23 during this period.

NITRA is happy to inform that it has received the first instalments of the five R&D projects, which were approved by Ministry of Textiles under NTTM scheme and one R&D project, approved by DST. It will commence all these projects from the month of April 2023. We wish participation from the industry for these projects.

While I conclude, I wish you Enjoy reading NITRA News.

Regards,

**Dr. Arindam Basu**  
Director General

**Northern India Textile Research Association**

(Linked to Ministry of Textiles, Government of India)

Sector – 23, Raj Nagar, Ghaziabad – 201 002 (India)



## R&D SPECTRUM

Presently, NITRA is working on nine Government sponsored projects.

### Government Sponsored Projects - On-going:

- ❑ Development of molten metal splash resistant unique jute blend work-wear for steel industry workers
- ❑ Development of Jute composite for automotive acoustic insulation and other uses

### Recently Sanctioned Projects :

- ❑ Socio-economic development of SC/ST by providing training, technology and market to convert local resources to industrial products (Sponsored by DST, GoI)
- ❑ Development of Specialized Firefighting Suit (Sponsored by NTTM, GoI)
- ❑ Development of flame retardant Nylon 66 yarn/fibre indigenously (Sponsored by NTTM, GoI)
- ❑ Development of Crop Cover, mulch, soil protection fabrics and other products using Sunnhemp and Banana Fibre (Sponsored by NTTM, GoI)
- ❑ Development of 3D High Performance Knitted Sports Textiles with Thermo-Physiological Comfort and Impact Protective Properties (Sponsored by NTTM, GoI)
- ❑ Cellulose based indigenous high Clo value and low density surface modified natural fibre for developing thermal layers of extreme cold weather clothing (Sponsored by NTTM, GoI)
- ❑ Development of Ceramic and UHMWPE Textile based Hybrid Polymer Composite Armor jointly with MNIT, Jaipur (Sponsored by NTTM, GoI)

## RESEARCH PAPER PUBLISHED/PRESENTED

S. No.	Title	Author(s)	Publication/Place	Date
1	A Review on Mosquito Protective Finish on Textiles	Rupali Kakaria, Neha Singh & M.S. Parmar	Colourage, p 28-37	January 2023
2	Surface modification of cotton to reduce water consumption in wet processing	M.S. Parmar	6th National Conference, on Textile Recycling and Sustainable Apparel Design organized by Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore	March 3-4, 2023
3	Mosquito Repellent Textiles and their Evaluation: A Review	Rupali Kakaria, Neha Singh and M.S. Parmar	Journal of the Textile Association, Vol 83 No 4, p 237-243	Nov-Dec, 2022
4	Lightweight indigenously developed fire-fighter suit	M.S. Parmar & Nidhi Sisodia	3rd International conference on Functional Textiles & Clothing, IIT, Delhi, India	February 10-12, 2023
5	Microencapsulation of lantana camara essential oil for mosquito repellent and antimicrobial properties of cotton	Rupali Kakaria, Neha Singh and M.S. Parmar	3rd International conference on Functional Textiles & Clothing, IIT, Delhi, India	February 10-12, 2023

## Recent Technology Transfer by NITRA

- ❑ ‘Technology to process raw banana fibre is transferred to Gencrest Bio Products Private limited, Mumbai.
- ❑ ‘Flash resistance hood for Indian Navy’- Technology transferred to M/s Aero Garment.
- ❑ ‘Improved version of body protector for riots control’- Technology transferred to M/s. G. M.Trading and Applied Systems.
- ❑ ‘Coat combat disruptive’- Technology transferred to Kusumgar Corporates Pvt. Ltd. and Radnik Exports.
- ❑ ‘Reusable sanitary pads and diapers’- Technology transferred to Kaytent Industries.

## NITRA Developments Already Commercialized Through Technology Transfer

- ❑ Technology of “Synthetic blood penetration tester” to Asian Test Equipments, Ghaziabad
- ❑ Technology of “Development of improved stab and impact resistant material for anti riots body protector” to Applied Systems Mumbai.
- ❑ Technology of “Work wear for Cement Porters” to M/s. Arvind Ltd., Ahmedabad
- ❑ Technology of developing “Multi Layered Flame & Thermal Resistance Fabric for Fire Fighter Clothing” to Arvind Ltd. and Aeronav Industrial Safety Appliances.
- ❑ Technology of “NITRA Electronic Drape meter” to Dinu Technologies, Coimbatore
- ❑ Technology of “NITRA’s Fabric Smoothness Tester” to Multiflo Instruments Pvt. Ltd., Navi Mumbai.
- ❑ Technology to produce “Seamless low cost jute carry bags” to G. D. Industries, Kolkata
- ❑ Study material for “Fabric Defect Analysis” to Textile Sector Skill Council, New Delhi

## Memorandum of Understanding

A MoU was signed on March 4, 2023 with Govt. Polytechnic, Hisar (Haryana) for advising on implementation of quality education; better exposure to students; conducting industrial training for students and jointly organizing Seminars, Exhibitions, Symbiosis etc.

## New Books Added to NITRA Library during January~March 2023

1. Soft Skills (The Employable Skill for 21<sup>st</sup> Century): Including English Language Lab
2. Technical Communication : Principles and practices by Meenakshi Raman, Sangeeta Sharma
3. Sustainable Fibres for Fashion and Textile Manufacturing, Edited by Rajkishore Nayak



Additional Secretary Department of Defence Production, Ministry of Defence, GoI. NITRA management congratulates both of them for making the organization proud.

### Parichaya 2023 - the annual Fresher's Party of NITRA Technical Campus



Parichaya 2023, the annual Fresher's Party of NITRA Technical Campus (NTC) was held on 20<sup>th</sup> January, 2023 at NITRA, Ghaziabad. The fresher's meet opened with the 1<sup>st</sup> year students presenting performing arts such as solo & group song, solo & group dance, skits, poetry recitation, dramatics, poster presentations and a series of fun games. The program also included a colorful 'Ramp Walk' by the aspirants of Mr. and Ms. Fresher title amongst the students of 1<sup>st</sup> year. Dr. Arindam Basu, Director General, NITRA and Director, NTC, graced the occasion and distributed prizes along with other faculty members during the occasion.

### NITRA Technical Campus Organizes Annual Sports Meet 2023



NITRA Technical Campus (NTC) organized 3-day intra-college annual *Sports Meet 2023* during 7-9 February, 2023 at NTC Campus, Ghaziabad. Six disciplines of sports activities such as, cricket, football, table tennis, volleyball, badminton, and chess were included in this year's sports meet. About 350 students from various branches have participated with great enthusiasm in this meet. Dr. Arindam Basu, Director General, NITRA & Director, NTC, Dr. M. S. Parmar, Director, NITRA along with other faculty members distributed the prizes in the closing ceremony.

### Placement Activities (B. Tech) at NITRA Technical Campus

S. No.	Recruiting Company	Branch	Student's Name
1.	Arham Spinning Mills, Bhiwadi	TT	Gopal Shah, Tarun Kumar and Vaish Khan
2.	Symbiosys Technologies	CSE	Nadimuddin
3.	DiracERP Solutions	CSE	Shivam Tiwari and Rishabh Dev Singh

### CONSULTANCY CORNER

- ❖ Inspection: Full body Protector (1unit), Water bottle (1unit), Riot Control Helmet (1unit), Cloth Disruptive (1unit), Rain Poncho (1unit), Jersey Woolen (3 units), Coat Combat (2 units), T Shirt (6 units), Shirting Angola Cloth (2 units), Blanket (5 units), Terry Towel (3 units), Nyco Camouflage Cloth (1unit), Cap Balclava (2units), Cotton Tape Newar (1unit), and Backpack (1unit).
- ❖ Fabric Defect analysis (6 units)
- ❖ Poor Phenolic yellowing rating in acrylic yarn (1unit)
- ❖ Setting up ZLD plant (1unit)
- ❖ Pollution prevention and efficient water use in Panipat (1unit)
- ❖ Breaking and loop skipping problem in sewing thread used in terry towel (1unit)
- ❖ Consultancy on UP Govt. Textile Policy (1unit)

### HRD FOCUS

#### Training Program/Workshop/Seminar Conducted by NITRA staff

- Mr. R. K. Gaur and Mr. Lalit Giri Goswami conducted Training of Trainers program (23 participants) for M/s. Sangam India Limited, Sareri, Bhilwara during 21.03.23 to 24.03.23.

### TESTING ZONE

During the period, total 1782 samples were tested in all the labs as per following table:

S. No.	Lab Name	No. of samples tested
1	Physical Quality Evaluation Lab	665
2	Chemical Quality Evaluation Lab	937
3	Heat & Flame/Microbiology Lab	
4	Polymer & Technical Textiles Lab	123
5	Eco Lab	39
6	Environment Lab	18

Total no. of Fabric Defect Analysis under taken during the period: 6

### GLIMPSES

#### Research Advisory Committee (RAC) Meeting held at NITRA



Research Advisory Committee (RAC) Meeting was held at NITRA on January 14, 2023. It was chaired by Shri Sandeep Hora, Chairman RAC, Vice Chairman NITRA Council of Administration & MD Aeronav Safety Appliances, New Delhi. Ms. Roop



Rashi, IA&AS, Textile Commissioner, Ministry of Textiles, Govt. of India also attended the program. Dr. Arindam Basu, DG NITRA welcomed the Chairman RAC, Textile Commissioner and experts. Total 12 R&D projects were presented by NITRA scientists. As many as 16 RAC members & special invitees from Academia & industry had very intensive interactions and poured in good amount of suggestions and ideas. Chairman RAC and Textile Commissioner also gave fruitful inputs for the projects.



#### Global Investors Summit in Lucknow



Dr Arindam Basu, Director General, while representing NITRA in the Global Investors Summit in Lucknow on Feb 11, 2023 opined that Uttar Pradesh is a land of infinite textile opportunities. He stressed on adequate investments in the 'Technical Textile' sector in UP in order to make the state as one of the prosperous states in the country.

#### DG NITRA addresses at 3<sup>rd</sup> Global Textile Conclave (GTC) organized by CITI



Dr. Arindam Basu, Director General NITRA addressed at the 3<sup>rd</sup> Global Textile Conclave (GTC) organized by CITI held at Hotel Marriot, Jaipur during March 15-17, 2023. His views on TRAs commendable work in research & developments in diversified fields and approach of having a VISION OF 5 YEARS AHEAD were very much appreciated.

#### NITRA Partners NISTI in Seminar on Khadi and Handlooms for Sustainable Fashion



A seminar on "Khadi and Handlooms for Sustainable Fashion" was organized by NISTI on 4<sup>th</sup> Feb. 23 at IIT Delhi. NITRA was a Knowledge Partner in this program. DG NITRA addressed a large number of delegates. He mentioned about the quality control and usages of environment friendly wet processing that need to be strengthened for making them sustainable both environmentally and economically.

#### NITRA at Technotex 2023, Mumbai



NITRA, a name in Protective and Automotive textiles research and related activities, showcased its developments, publications, commercialization and several activities in the field of technical textiles at TECHNOTEX 2023, Goregaon, Mumbai. Technotex-23, organized by MoT and FICCI from February 22 to 24, 2023 is a flagship event on Technical Textiles comprises of an International exhibition, conference, and seminars. A common platform for participants, visitors and other key decision makers from a diverse cross section of the technical textile industry with a view to provide more innovative solutions, identify new business opportunities and create an environment congenial for growth.

#### DG NITRA deliberates in National Workshop on Bamboo Sector Development and Bamboo Exhibition



Dr. Basu deliberated on "Opportunities in Bamboo sector: exports, MSME and branding" in the National Workshop "Bamboo Sector Development and Bamboo Exhibition" organized by The National Bamboo Mission, Dep. of Agriculture and Farmers welfare on March 10, 2023 at PHD House, New Delhi. It was aimed to promote bamboo sector by adapting area based differentiated strategy hence promoting Bamboo cultivation and marketing of bamboo products.

#### NITRA Scientists Awarded Ph.D at the 41<sup>st</sup> Convocation of DEI, Agra



It is a matter of great pride for NITRA that Dr. Neha Kapil and Dr. Shweta Saxena, both Principal Scientific Officer in NITRA, was awarded Doctorate degree at the 41<sup>st</sup> Annual Convocation of Dayalbagh Educational Institute (Deemed University) Dayalbagh, Agra on 18<sup>th</sup> Feb 2023. The degree was awarded by the chief guest Shri Sanjay Jaju, IAS, Former