

NITRA NEWS

...with industry always



Issue: Oct. - Dec. 2023

Insight

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FROM DIRECTOR GENERAL'S DESK



Dear Patrons,

To begin this last quarter edition of NITRA News 2023, I want to wish you a happy new year 2024 which is already underway. Hope you were hale and hearty the year through.

In this eventful quarter NITRA had enjoyed a moment of great pride. Confederation of Indian Industry (CII), the biggest industry association of India recognized NITRA as one of Top 5 Innovative Institutes in India for the year 2023, based on its innovations and transfer of technologies to industry. Last year also NITRA was recognized by CII as one of the topmost innovative institutes. During this quarter, NITRA also participated in 61st Joint Technological Conference (JTC), an annual event of four prime TRAs ATIRA, BTRA, SITRA and NITRA, International Conference on Technical Textiles held at IIT, Delhi and National Jute Development Program, organized by National Jute Board. This year NITRA scientists presented five industry oriented research papers that were well acclaimed by delegates.

In addition to above, during this quarter NITRA had completed 3 products development, applied for 4 patents, and provided technical assistance to BIS for framing draft specification for Textiles. NITRA also framed specifications, Alpine Tent and Wader Suit, both for ITBP. As many as 4 MoU was signed with industries during this quarter.

As for NITRA's academic wing NITRA Technical Campus (NTC), our students of B.Tech-Textile Technology branch secured Gold and Bronze Medal and received degree from Hon'ble Governor of UP during 21st AKTU Convocation. This is for the seventh consecutive time NTC pass out students top the AKTU chart. Besides, big companies like Raymond, Trident Group, Vardhman Textiles, Reliance Retail, and RSWM recruited NTC students even before they are passed out.

To conclude this last issue of 2023, I solicit your invaluable suggestions in order to make the future issues more informative and user-friendly. Enjoy reading NITRA News.

Regards,

Dr. Arindam Basu
Director General

Editorial Structure

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R&D SPECTRUM

Presently, NITRA is working on ten Government sponsored projects.

Government Sponsored Projects - Completed:

- Development of molten metal splash resistant unique jute blend work-wear for steel industry workers (sponsored by NJB, GOI)

Government Sponsored Projects - On-going:

- Development of Jute composite for automotive acoustic insulation and other uses (sponsored by NJB, GOI)
- 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 Ceramic and UHMWPE Textile Based Hybrid Polymer Composite Armor (Sponsored by NTTM, 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)
- Pollution Prevention and Effective waste Management of Panipat Textile Cluster

Proposed Project – Submitted to NTTM, MoT, GoI

- Development of Indigenous State-of-the-art Instruments for Protective Textiles

RESEARCH PAPER PUBLISHED/PRESENTED

S. No.	Title	Author(s)	Publication/Place	Date
1.	Development of fabrics for adsorbing carbon-dioxide & other pollutants from indoor air	Arindam Basu, Pankaj Kumar, M.S. Parmar & R.K. Gaur.	Indian Journal of Fibre & Textile Research, Vol. 48, p338-395	December 2023
2.	Developing faded denim using surface-modified disperse dye dyeable cotton yarn	M S Parmar, Durgesh Raj Maurya & Nidhi Sisodia	Indian Journal of Fibre & Textile Research, Vol. 48, pp. 432-441	December 2023
3.	Comfort Properties of Protective Textiles	Arindam Basu	Annual Technical Volume of Textile Engineering Division, The Institution of Engineers (India), Vol. V, pp. 100-105	December 2023
4.	Trends, challenges and opportunities in Functional Textile and Clothing	P. Khude & Arindam Basu	Annual Technical Volume of Textile Engineering Division, The Institution of Engineers (India), Vol. V, pp. 161-199	December 2023

5.	Development of natural fibre composite for automotives having acoustic properties	Neha Kapil, Arindam Basu, Preeti Kaur Sachdeva and Mahadeb Dutta	61 st Joint Technological Conference, organized by ATIRA, BTRA, NITRA and SITRA at Mumbai.	December 14 & 15, 2023
6.	Enhancing impact protection in sports: Optimization of Shear thickening fluid application on 3 D knitted fabrics	Arindam Basu & Archana Gangwar	-do-	December 14 & 15, 2023
7.	Development of mulch mat & carop cover fabrics using bio-degradable natural material: Sunhemp & Banana fibres	Nidhi Sisodia, A.K. Pandey and Arindam Basu	-do-	December 14 & 15, 2023
8.	Study on the development of molten metal splash resistant jute cotton union fabrics	M.S. Parmar, Shweta Saxena, Swami Sharan and Mahadeb Datta	-do-	December 14 & 15, 2023
9.	Development of an aluminized outer layer of specialized fire fighter suit	M.S. Parmar, Nidhi Sisodia & Swami Sharan	-do-	December 14 & 15, 2023
10.	Development of Molten Metal Splash resistant jute-cotton based union fabric	M.S. Parmar, Khuswinder Singh Dhillon & Shweta Saxena	7 th International Conference on Technical Textiles and Nonwoven (ICTN-2023), IIT, Delhi	December 13 & 14, 2023
11.	Advancing Impact protection in Sports Textile: Microgel Integration on 3D knitted fabrics for enhanced Athlete Safety	Arindam Basu, Archana Gangwar & P. Khude	-do-	December 13 & 14, 2023
12.	Development and Evaluation of Mosquito Repellent and Antibacterial Microcapsules Containing Catnip Essential Oil Using Complex Coacervation Approach	Rupali Kakaria, Neha Singh and M.S. Parmar	-do-	December 12 & 14, 2023
13.	Effect of Finishing Treatment on Micro Polyester for Chemical Resistant Work Wear	Sahni Sugandha , Tita Kant & M.S. Parmar	Journal of the Textile Association, 84/3 (171-176)	Sept-Oct. 2023

CONSULTANCY CORNER

Inspection: T-shirt Disruptive (1 unit), Jersey Woolen (5 units), Coat Combat (1 unit), Shirting Angola Cloth (5 units), Rain Cape (1unit), Blanket (3 units), Cloth Serge dress (2 units), Cloth Gabardine (1 unit), Cotton Terry Towel (1 unit), Round-neck full sleeve vest (1unit), Sleeping bag (1 unit), Full-body Protector (1 unit), Ergonomically designed Back Pack -70 L(1 unit).

Energy Audit: Energy Audit conducted in 5 units

Benefits to Industry:

1. Consultancy provided to 4 units of a very renowned conglomerate on Manpower assessment and rationalization. All units have been able to optimize man power and could save huge amounts.
2. Consultancy provided to another big textile giant on Plant/machine health & ageing. Company is now able to renovate the whole plant consisting of spinning, weaving, processing and engineering & utilities.

HRD FOCUS

Training Program/Workshop/Seminar organised by NITRA staff

In order to observe **National Energy Conservation Day** on 14th December 2023, Mr. Sourabh Jain, Asst. Professor and Certified energy Auditor, BEE, and Dr. Palak Bansal Sr. Scientific Officer (Environment) delivered lectures to the students of NITRA Technical Campus on the topic “*Awareness towards Energy Savings*” and “**Energy Conservation: Where do We Stand?**”.

TESTING ZONE

During the period, total 1553 samples were tested in all the labs as par following table:

S. No.	Lab Name	No. of samples tested
1	Physical Quality Evaluation Lab	600
2	Chemical Quality Evaluation Lab	750
3	Heat & Flame/Microbiology Lab	
4	Polymer & Technical Textiles Lab	133
5	Eco Lab	70
6	Environment Lab	

Total No of Fabric Defect Analysis under taken during the period: 05 Nos

GLIMPSES

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

Confederation of Indian Industries (CII), biggest industry association of India recognized Northern India

Textile Research Association (NITRA) as one of the Top 5 Innovative Institutes in India for the year 2023, based on its innovations & transfer of technologies to the Industry. Last year also NITRA was recognized by CII as one of the topmost Innovative Institutes.



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

Joint Technological Conference (JTC) is an annual event of India's leading textile research associations ATIRA, BTRA, NITRA and SITRA. This year the 61st version of the conference held at BTRA, Mumbai during December 14 and 15, 2023. NITRA Scientists presented 5 research papers in 61st JTC:



- Development of natural fibre composite for automotives having acoustic properties - Neha Kapil, Arindam Basu, Preeti Kaur Sachdeva and Mahadeb Dutta
- ε ● Enhancing impact protection in sports: Optimization of Shear thickening fluid application on 3 D knitted fabrics - Arindam Basu & Archana Gangwar
- ε ● Development of mulch mat & carop cover fabrics using bio-degradable natural material: Sunhemp & Banana fibres - Nidhi Sisodia, A.K. Pandey and Arindam Basu
- ε ● Study on the development of molten metal splash resistant jute cotton union fabrics - M.S. Parmar, Shweta Saxena, Swami Sharan and Mahadeb Dutta
- ε ● Development of an aluminized outer layer of specialized fire fighter suit - M.S. Parmar, Nidhi Sisodia & Swami Sharan.

NITRA scientists present research papers in 7th International Conference on Technical Textiles and Nonwoven (ICTN-2023), IIT, Delhi on December 13, 2024

- Dr. M.S. Parmar presented research paper on “Development of Molten Metal Splash resistant jute-cotton based union fabric”
- ε ● Ms. Archana Gangwar presented research paper on “Advancing Impact protection in Sports Textile: Microgel Integration on 3D knitted fabrics for enhanced Athlete Safety”



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



Memorandum of Understanding (MoU) signed

*On December 21, 2023 with M/s. JCT Limited, Phagwara on the transfer of technology of NITRA's developed Molten Metal splash resistance fabric.



*On December 21, 2023 with M/s. RFM Automotives Pvt. Ltd., Gurgaon on the transfer of technology of NITRA's developed Roof liner and Parcel Tray.



*MoU & Non-disclosure Agreement signed on November 4, 2023 with Polygiene Group at Styrmansgatan, Sweden with an aim to develop next generation eco-friendly antimicrobial technology. It was mutually decided to start working on this project entitled “Citron”.

*MoU & Non-disclosure Agreement was signed on November 24, 2023 with Chlorohemp with the objectives to work jointly on mutually agreed textile projects on sustainable fibres for their extraction / regeneration, processing and product development activities as project associate / industry partner.



Recent Product Development

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

Recent Specification Framing by NITRA

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

Placement Activities (B. Tech) at NITRA Technical Campus

S. No.	Recruiting Company	Branch	Student's Name
1.	Vardhman Textiles Ltd.	TT	Shivam Maharaj, Shivangi Nath and Md. Adil
2.	RSWM	TT	Abhishek Gupta
3.	Trident Group	TT	Naushin Naz and Aditi Gupta
4.	Raymond	TT	Raj Rajput and Amarnath Sharma
5.	Reliance Retail	TT	Karan Singh
6.	ANR Software Pvt. Ltd.	CSE	Ashish Singh and Shreya Tripathi
7.	Accentuate Business Solutions Pvt. Ltd.	CSE	Satyam Dubey
8.	RTDS	CSE	Arya Singh

New Books Added to NITRA Library during October-December 2023

1. General Financial Rules, 2017: Incorporating compendium of rules on ADVANCES to central government servants (Incorporating order received upto August, 2022), 33rd ed. by Muthuswamy, Brinda, Sanjeev.
2. Let Us Python, 6th ed. by Yashwant Kanetkar, Aditya Kanetkar.
3. Artificial Intelligence: A Modern approach, 4th ed. by Stuart J Russel and Peter Noving.
4. PROLOG: Programming for artificial intelligence, 3rd ed. by Ivan Bratko.
5. Artificial Intelligence: Foundations of computational agents, 3rd ed. by David Poole and Alan K Mackworth.
6. Artificial Intelligence: A systems approach by M Tim Jones.
7. Technical Communication: Effective Communication skill by Dr Ritu Soryan.

Patents filed

- ? An Automotive component and process for manufacturing thereof from waste jute blends for automotive application, patent application No. 202311082687 dated 5.12.2023
- ? Method of manufacturing jute based fabric for protection against Molten Metal Splash, patent application No. 202311082688 dated 5.12.2023
- ? IOT based smart milk pan, patent application no. 202311067403 dated 7.10.2023
- Blockchain based authentication system for IOT networks, patent application No. 202341066014 dated 2.10.2023

Hon'ble Governor of UP Honours NITRA Technical Campus Students

Congratulate Ms. Nikita Agrahari & Ms. Varsha Singh (Textile Technology) for Clinching Gold Medal & Bronze Medal in AKTU B. Tech Exams 2023 respectively.



Program on “Fundamentals of Launching a Startup”

NITRA Technical Campus, Ghaziabad organized a program on Fundamentals of launching a startup for its 2nd year & 3rd and B.Tech students and faculty members. The program was conducted by Mr. Gaurav Srivastava, founder of The Catlysts Lab and InnerSoul Wellbeing Pvt Ltd.



NITRA Technical Campus Organises Expert Lecture on Knitting

Prof. V.K Malhotra, Guest Speaker, deliberated very interactive session in a program on Knitting on October 10, 2023. Program was attended by B.Tech Textile Technology Students and faculties.



NITRA Technical Campus Organizes Program on Entrepreneurship and Startups

NITRA Technical Campus, Ghaziabad organized a program on Entrepreneurship and Start ups for its 3rd and final year B.Tech students and faculty members. The program was conducted by Dr. Ashutosh Sahi, Associate Professor, NIFT Delhi and Chief Operating Officer, NIFT Foundation Design Innovation Centre, Dr. Namrata Sahi, Director and Mr. Sandeep Sen CEO of the successful startup “Sahifab Private Limited”, New Delhi. It is proud to mention that their startup company is working on non-conventional natural fibres in the incubation centre of NITRA, Ghaziabad.

NTC Organizes Fresher's Party 2023

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



NTC Organizes 9th Techno-Science Quiz 2023

NITRA Technical Campus (NTC) organized the 9th Techno-Science Quiz on 2nd December, 2023 for 12th Standard science-stream students. This is an annual event of NTC to encourage young scientific minds. This year 125 students from 20 reputed schools in and around Ghaziabad took part in the event. Satyam Singh from Green Field Public School emerged the winner of the contest. Gaurav Nagi from Indrapuram Public School and Navya Rawat from Everest Public School secured the 2nd and 3rd positions respectively. Dr. Arindam Basu, Director General, NITRA & Director NTC and Dr. M.S.Parmar, Director, NITRA along with other faculty members rewarded the winners with cash prize and certificate. In addition to toppers two consolation prizes and certificate was also awarded to all participants.



Recent Technology Transfer by NITRA

- ε ● Technology of NITRA's developed Molten Metal splash resistance fabric is transferred to M/s. JCT Limited, Phagwara on December 21, 2023.
- ε ● Technology of NITRA's developed Roof liner and Parcel Tray is transferred to M/s. RFM Automotives Pvt. Ltd., Gurgaon on December 21, 2023.
- ε ● Technology to process raw banana fibre' is transferred to Gencrest Bio Products Private limited, Mumbai.
- ε ● Flash resistance hood for Indian Navy'- Technology transferred to M/s Aero Garment.
- ε ● Improved version of body protector for riots control'- Technology transferred to M/s. G. M. Trading and Applied Systems.
- ε ● Coat combat disruptive'- Technology transferred to Kusumgar Corporates Pvt. Ltd. and Radnik Exports.
- ε ● Reusable sanitary pads and diapers'- Technology transferred to Kaytent Industries.



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