

IJIRA

NEWSLETTER

Oct., 2025/Vol.13, Issue 10



From the Desk of the Director

✚ **Weaving Innovation, Cultivating Impact**

A glimpse of what's weaving the future at IJIRA...

- **Eco-Engineered Jute Geotextiles:**
"Turning hills green again – IJIRA's new jute geotextiles are redefining sustainable slope protection."
- **Smart Roll Former Upgrade:**
"Precision meets intelligence – real-time digital control brings jute processing into the smart age."
- **Breakthrough in Bamboo Processing:**
"One machine. Three functions. Infinite impact – IJIRA's bamboo innovation is reshaping eco-efficiency."
- **"Innovation that breathes sustainability:** "Our new hybrid chemico-mechanico-enzymatic process transforms raw Ramie into lustrous, high-value fiber – redefining eco-textile excellence."
- **NTTM Skilling Initiatives:**
"Empowering hands, enriching futures – IJIRA's skilling drives are weaving opportunity into innovation."

In this Issue

- New Technologies
- Patent Application
- Skill Initiatives
- Testing/Consultancy Services
- Events

Editorial Board

- Dr. Pradip Chakrabarti
- Soumita Chowdhury
- Partha Sanyal
- Ipsita Roy
- Apsara Nath
- Jitesh Kayal
- Kuntal Chakraborty

Come, explore the threads of transformation...

-- Dr. A. K. Sharma
Director, IJIRA

Technology No. 1:

IJIRA's Jute Geotextiles Strengthen India's Slopes

IJIRA has developed two eco-engineered Open-Weave Jute Geotextiles (OWJGTs) – 1200 GSM and 600 GSM – under a BIS-sponsored project for soil erosion control and slope stabilization in hilly and high-rainfall zones. Field trials, supervised were conducted at a National Highway site in Hnahthial, Mizoram (Aizawl–Tuipang NH-54), covering slopes of 18 m and 6 m.

These natural-fiber geotextiles offer a sustainable, cost-effective alternative to synthetics – reinforcing IJIRA's mission to weave green, resilient infrastructure for India.

“Jute for the Nation – Nature for the Future.”



Before JGT application



Laying of 1200gsm open weave JGT



Laying of 600gsm open weave JGT

Technology No. 2:

Smarter Roll Former, Sharper Control

IJIRA has upgraded its Pneumatically Controlled Roll Former by adding a sliver length measurement unit and a mobile app for real-time data monitoring – a leap toward smart jute processing.

The enhancement was developed following mill feedback during the live demo on 25th June 2025 and showcased successfully on 18th September 2025 at the IJIRA Pilot Plant before industry technologists.

With this, online detection of sliver weight and moisture regain (%) technology is ready for adoption by industry, reinforcing its drive toward automation, precision, and intelligent fiber manufacturing.

Innovation in Motion – Powered by IJIRA



Demonstration of sliver length measurement on Pneumatically Controlled Roll Former

Technology No. 3:

Breakthrough in Bamboo Processing Technology

IJIRA's R&D team has achieved a major milestone with the development of an advanced bamboo stripping machine prototype, now over 60% complete.

This next-generation system seamlessly integrates outer layer removal, depithing, and slicing—processes traditionally done on multiple machines—into a single high-performance unit. **The result: faster production, lower manpower and energy costs, and a sustainable edge for the bamboo industry.**

Once finalized, this innovation will redefine automation, efficiency, and eco-friendly manufacturing in bamboo processing—another stride in IJIRA's mission to engineer the future of natural fiber technology.

Innovation, Integration, Impact



Multi-cutter bamboo stripping machine

Technology No. 4:

Eco-Friendly Hybrid Process Revolutionizes Ramie Fiber Degumming

IJIRA has achieved a breakthrough in sustainable fiber technology with the development of an economically viable innovative Hybrid Chemico-Mechanico-Enzymatic Process for degumming raw ramie (*Boehmeria nivea*).

This green technology blends selective enzymes—pectinase, amylase, and hemicellulase—with gentle mechanical fibrillation, efficiently removing gum while preserving fiber strength. Operating at room temperature (25–30°C) and neutral pH (6–8), the process achieves residual gum below 5% without using harsh chemicals.

The method cuts water and chemical use by over 70%, slashes costs, and yields lustrous, fine fibers—ideal for apparel, home textiles, and eco-products.

In the next phase, IJIRA is designing customized degumming units—including fiber washing systems, oiling/softening units, and fiber-parallelizing machines—to enhance fiber handle, appearance, and process efficiency, paving the way for a new generation of sustainable premium ramie fabrics.

A Made-in-India innovation redefining green fiber processing under the Ministry of Textiles, Govt.

Smart, Sustainable, Scalable



Cage for Scouring



Fiber Separation Machine



Washing Machine



Machine for Parallelization



Patent Application

A patent “Enzymatic Mechanical Process for Fine Jute Yarn Production” (Application No. 202531102991 dated 25.10.2025) has been applied.

A patent “A Hybrid Chemico-Mechanico-Enzymatic Process for Degumming Raw Ramie Fiber for Production of Fine and High-Quality Textile Grade Fibers” (Application No. 202531103517 dated 27.10.2025) has been applied.

Skill Initiatives

Ongoing Skilling Programmes under NTTM

- A new batch of 30 candidates (Batch ID: 04IJIRA2025TG2) commenced on 15th October, 2025 at IJIRA, Kolkata.
- Another batch of 30 candidates (Batch ID: 03IJIRA2025TG2) commenced on 28th October, 2025 at the Training Centre – Bowreah Jute Mills, Howrah.
- The Final Assessment for Batch ID: 01IJIRA2025TG2 was conducted on 14th October, 2025 at Nafarchand Jute Mills, North 24 Parganas, under the NTTM (Skilling) initiative.



Address by Shri Ashok Malhotra, Mission Director, NTTM, to review the fee structure under the NTTM Skill Development Scheme



Skill programme for Target Group (TG 2) under NTTM (Skilling) at Bowreah Jute Mills (under IJIRA TP)

Testing / Consultancy Services

Performance of service departments:-

	Physical Testing	Chemical Testing
Sample tested	15	50 (Non-FGJP)
Moisture Meter calibrated	21	-
FGJP Lot inspected & tested	-	09
No. of bales of B.Twill/A.Twill bags inspected	1,26,052 +	

Events

- ❖ Dr. Pradip Chakrabarti, Head-HRD & CD, IJIRA along with Shri Partha Sanyal, Scientist, IJIRA & Shri Gopal Mukhopadhyay, Technical Officer visited Eskay International to explore the technology for waste jute processing on 14/10/2025.
- ❖ The Director, IJIRA visited the Ministry of Textiles on 17/10/2025 to hold a meeting with the Joint Secretary (Fiber), Managing Director, NTTM, Director (TRA), Economic Advisor & PS to HMoT. The discussions focused on seeking the Ministry's continued support for various ongoing and upcoming activities of IJIRA.
- ❖ Smt. Soumita Choudhury, Scientist, IJIRA visited Kelvin Jute mill for implementation of Morah Weight and Control System on 10/10/2025.
- ❖ Smt. Soumita Choudhury attended a Seminar organized by BIS, Kolkata on "World Standard Day" (*i.e.*14/10/2025).
- ❖ Shri K.N. Singh, Technical Officer, IJIRA visited "Landmark Material Testing and Research Laboratory" at Jaipur, Rajasthan under BIS Project 0273 from 12/10/2025 to 14/10/2025.
- ❖ Mr. Partha Sanyal delivered a presentation on Agrotextiles during the 20th EMC Meeting of the National Jute Board, held on 27th October 2025.
- ❖ On 28/10/2025, IJIRA hosted Ms. Martha "Patty" Torres (OFI, USA) and Ms. Arulmary Shobana (OFI India) for an insightful visit to its MOSH-MOAH Analysis Laboratory, showcasing IJIRA's advanced testing capabilities for food-grade jute packaging. The visit fostered meaningful discussions on MOSH-MOAH compliance, sustainable packaging and future research collaborations between IJIRA and OFI.
- ❖ 229th Council Meeting of IJIRA council of management took place on 31/10/2025.
- ❖ Annual action plan *w.r.t* National Centre for Innovation & vision document of IJIRA was submitted to MoT as per directives of Economic Advisor, MoT

Innovating Natural Fibre

for
Sustainable Future

INDIAN JUTE INDUSTRIES' RESEARCH ASSOCIATION

17, Taratala Road, Kolkata – 700 088

Telephone: (033) 6626 9200 * Fax: (033) 6626 9204 * E-mail: ijiraweb@ijira.org.in *

Website: www.ijira.org.in