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## *Editorial Board*

- Dr. Pradip Chakrabarti
- Soumita Chowdhury
- Partha Sanyal
- Ipsita Roy
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- Jitesh Kayal
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## *From the Desk of the Director*

### **✚ Weaving Innovation, Cultivating Impact**

- **Bamboo Slicing Revolution**  
"From labor-heavy to lightning-fast—IJIRA's bamboo slicer is slicing costs and unlocking green growth!"
- **Smart Retting Breakthrough**  
"Autoclaves + Enzymes = Cleaner jute in just 7 days—rethinking retting for a sustainable future!"
- **Roller Drafting Disruption**  
"High-speed. High-precision. IJIRA's next-gen drafting tech is mill-ready and industry-approved."
- **Roll-Former with a Brain**  
"Pneumatic roll-former with live sliver sensing—tech so smart it's already drawing mill attention."
- **Agromulch Field Win**  
"Jute:wool mulch boosts brinjal yield by 44%—cleaner soil, greener farms, and a tastier harvest!"
- **Morrah Magic**  
"Precision weighing cuts yarn variation and costs—IJIRA's protocol is spinning quality at scale."

*Come, explore the threads of transformation...*

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

## Technology No. 1:

### Innovation Spotlight: Next-Gen Bamboo Slicing Machine

*Revolutionizing bamboo fiber extraction—IJIRA's new slicing machine delivers faster output, lower costs, and a game-changing boost to rural green tech.*

IJIRA is revolutionizing bamboo processing with its near-complete, automation-enhanced bamboo slicing machine—designed for speed, precision, and efficiency. By slashing manpower, energy use, and production costs, this breakthrough will drastically lower bamboo fibre prices and unlock scalable, sustainable growth for India's green fibre economy.



*Heavy Duty Bamboo Splitting Machine*



*Bamboo Splitting Machine in Action*

## Technology No. 2:

### Smart Retting Revolution (Lab): Cleaner Jute, Faster & Greener

As directed by HMoT, IJIRA has initiated a promising hybrid retting process combining autoclave-assisted bark loosening with targeted enzymatic retting. This method gently separates bark without damaging the core and rapidly produces cleaner, brighter fibres in just 7–10 days—minimizing water use and avoiding traditional retting inconsistencies. These preliminary encouraging lab results will now be extended during the upcoming green jute season to validate performance in pilot scale as well as field-scale conditions. A bold step toward next-gen, sustainable jute processing.



*From Stick to Fiber Faster: A Modern Hybrid Approach to Jute Retting*

Experiment	Retting Type	Retting time	Fiber Tenacity (gm/Tex)	Fineness (Tex)
1	Enzyme/ Microbial Retting	12 hr	18.86	4.79
2	Enzyme/ Microbial Retting	48hr	13.65	4.52
3	Enzyme/ Microbial Retting	240hr	14.99	4.8
4	Mechanical	-	13.65	3.74
5	Lime Water Retting	6 hr	14.18	4.76

From a preliminary lab experiments, it appears that 12-hour enzyme-based retting might delivered the highest fiber strength with acceptable fineness, showcasing promising potential for rapid and efficient industrial jute retting.

### *Technology No. 3:*

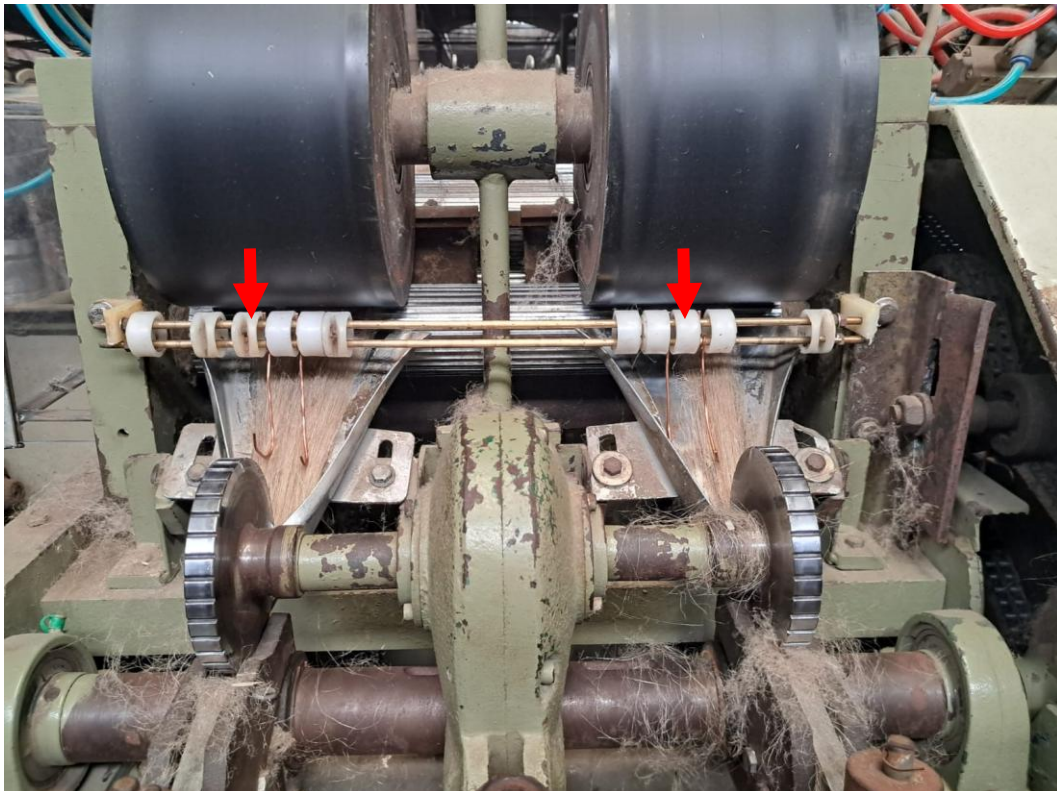
## Roller Drafting Innovation Nearing Industry Launch

IJIRA's high-speed Roller Drafting Finisher Drawing Frame is now in its final stage of development, featuring a cutting-edge electro-mechanical stop-motion sensor to instantly halt operations during lapping—ensuring safety without compromising speed.

*Coming upgrades include:*

- ❖ Suction/blower system for smoother drafting & reduced dust buildup
- ❖ Advanced selvage guide for superior sliver uniformity

In collaboration with mill partners, IJIRA is set to run a full-scale, month-long sliver production trial—building confidence for this game-changing leap in jute processing



*Development of electro-mechanical sensor for Jute roller drafting frame*

## Technology No. 4:

### Roll Former Innovation Nears Commercial Launch

IJIRA's latest pneumatic-controlled roll-former, featuring real-time sliver weight and moisture detection, has sparked commercial interest—Birla Corporation Ltd. (Birla Jute Mill) is already on board! Simultaneously, trials with larger 34" carding rolls in North & South 24 Parganas mills have shown promising gains in efficiency and sliver quality. This marks another lab-to-industry leap by IJIRA—bridging the "valley of death" in innovation and generating tangible value and royalty for the institute.



*Commercial rollout and field evaluation of advanced sliver monitoring roll-former and enlarged carding roll*

### Technology No. 5:

## Bio-Agromulch Boosts Brinjal Yields in Field Trials

Sustained success! Recent field trials at Sargachi, West Bengal using IJIRA's jute:wool bio-agromulch in brinjal cultivation recorded a 44.3% higher yield vs. no mulch and 18.4% over plastic mulch. The results reaffirm the consistent, sustainable advantage of natural fiber mulch—promising cleaner soil, healthier crops, and greener farming. Detail work on Soil Health Advancement, Agronomic Stress Scenarios, Pest & Disease Impact Evaluation will be planned soon.



*Bio-agromulch proves consistent, boosting brinjal yield by 44.3% over control and 18.4% over polymulch*

### *Technology No. 6:*

## Innovation in Action: IJIRA's Morrah Weight Protocol Boosts Yarn Quality

Consistent Morrah weight control (during Morah preparation at Jute Selection Area) & Monitoring System, pioneered by IJIRA, has proven to maintain average Morah weight, range of Morah weight and significantly reduce CV%, directly enhancing yarn quality, weaving efficiency and cutting production costs. With mills now adopting this process at scale, it's another testament to IJIRA's power in turning lab innovations into industry impact.



*Morah weight control and monitoring system*

## Skill Initiatives

### *Ongoing Skilling Programmes under NTTM*

- Skilling programmes are currently being conducted at IJIRA, Kolkata and Bowreah Jute Mills, Howrah, under the NTTM
- Total 60 candidates are undertaking Training at Bowreah Jute Mills, Howrah.



*Address by Shri Arindam Sinha Roy, President, Bowreah Jute Mill, regarding benefits of Skilling Program under the NTTM*



*Skill programme for TG 2 under NTTM (Skilling) at Bowreah Jute Mills – Theory & Practical*

## IJIRA Conducts 3-Day Training for JCI Inspectors

IJIRA has conducted 3-Day training program for newly recruited inspectors of JCI on demand. A comprehensive training has been completed under Smt. Soumita Chowdhury, Scientist (Departmental Head, Physical Testing).



### Testing / Consultancy Services

Performance of service departments:-

	Physical Testing	Chemical Testing
Sample tested	27	85 (Non-FGJP)
Moisture Meter calibrated	17	-
FGJP Lot inspected & tested	-	08
FGJP Interim audit	-	in 2 mills
No. of bales of B.Twill/ A.Twill bags inspected	1,46,174+	

## Events

- ✚ Shri Biju R B, Senior, General Manager and Shri Shambhoo Singh, Asst. General Manager (R&D) of Supreme Treon Pvt. Ltd, visited IJIRA on 25th November 2025 to discuss on development of (i) Unidirectional (UD) Jute / Jute-Blended Tape for automotive Composite and ii) Development of UV- resistance Jute / Jute-Blended Nonwoven Felt for Composite Applications Smt. Soumita Choudhury, Scientist, IJIRA visited Kelvin Jute mill for implementation of Morah Weight and Control System on 10/10/2025.



- ✚ Dr. Pradip Chakrabarti & Shri Partha Sanyal visited Empire Jute Mill on 18.11.2025 for discussion on modification of roller drafting jute finisher drawing frame
- ✚ Ms. Soumita Chowdhury visited Bowreah Jute Mill to conduct training on SQC and Process Control under NTTM Skilling on 27.11.2025.
- ✚ Shri Gopal Mukhopadhyay conducted a Technical Feasibility Study of Mono-Head and Draft-o-Matic Drawing Frames at Ludlow Jute & Specialities Ltd. from 14.11.2025 to 20.11.2025.
- ✚ Director, IJIRA gave presentation to the Secretary Textiles on IJIRA's current innovations in Udyog Bhawan on 19.11.2025.
- ✚ Director, IJIRA attended Industry Meet on Technical Textile Apparel Manufacturing Industry Bodies and EPCs on 26.11. 2025.
- ✚ Director IJIRA accompanied PS, HMoT in a meeting on bamboo fibers with JICA in Delhi on 27.11.2025

Innovating Natural Fibre  
  
for  
Sustainable Future

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