



## EDITOR'S DESK



I hope this newsletter finds you in good health and high spirits. As we continue to forge ahead in our pursuit of excellence in science and technology, it gives me great pleasure to present the latest edition of our newsletter. This activity of publishing biannual newsletters has served as a platform to celebrate our achievements, share valuable insights, and highlight the remarkable progress we have made in the realm of technology upgradation over the years.

Over the past few months, our team at RuTAG IIT Delhi has been actively engaged in a wide array of activities. I am thrilled to announce that our collaboration with the Khadi and Village Industries Commission (KVIC) has resulted in the realization of the two new projects namely: Miniaturization of Carding Machine Project and Potter's Kiln. These projects are promised to be facilitating the improved and efficient techniques for the betterment of the society. Furthermore, our newsletter aims to provide you with a comprehensive overview of the ongoing projects, their progress, and the remarkable contributions made by our talented researchers, students, and support staff. I encourage you to explore the newsletter and delve into the stories that underscore our commitment to advancing science and technology for the betterment of society.

I would like to extend my heartfelt gratitude to each and every member of the RuTAG family for their unwavering dedication and relentless pursuit of excellence. It is through your passion, hard work, and commitment that we continue to make a lasting impact on society and contribute to the advancement of science and technology in rural areas. I urge you all to continue pushing the boundaries of knowledge, exploring new frontiers, and embracing interdisciplinary collaborations that will shape a brighter and more prosperous future.

Jai Hind!

Prof. S. K. Saha

## >>> DIC MEET

The 3rd All India Design Innovation Centre (DIC) meet was held on February 6, 2023, at the prestigious Dr. Ambedkar International Centre, organized by the Design Innovation Centre at the School of Planning and Architecture (SPA) in New Delhi. This event served as a platform for professionals and experts in the field of design innovation to collaborate, share ideas, and discuss the future of design initiatives in India.



*Fig. 1: Prof. S. K. Saha during the presentation at DIC Meet*

During the session on the synergy of DIC with other schemes, esteemed speaker Prof. S. K. Saha was invited to present his insights. Prof. Saha provided a comprehensive overview (Fig. 1) of the Rural Technology Action Group (RuTAG) and its collaborative efforts with other government initiatives. His presentation shed light on the potential for synergies between RuTAG and various other programs and policies, emphasizing the importance of interdisciplinary collaboration and innovation in addressing societal challenges.

The event was attended with a significant participation, with representatives from DIC Hub and Spoke institutions across the country attending. Moreover, it attracted notable individuals from diverse government organizations and industry associations, fostering a platform for networking, knowledge sharing, and forging valuable partnerships. The meet served as an essential catalyst for driving forward design innovation and establishing fruitful connections between academia, industry, and government bodies in India.

## »» UNNATI MAHOTSAV AND EXPO ORGANISED BY UBA



*Fig. 2: Demonstration of RuTAG Technologies*

The RuTAG team actively participated in the Unnati Mahotsav and Expo, organized by the Unnat Bharat Abhiyan, held on March 17 and 18, 2023, at IIT Delhi. This event provided a platform for showcasing innovative projects and solutions aimed at rural development and sustainable practices. Two of the technologies developed by IIT Delhi were demonstrated (Fig. 2): the Tulsi mala bead making device

and the sheep hair shearing device. These devices were designed to improve efficiency and productivity in specific rural activities.

During the exhibition, Mr. Dharmender, an artisan from Jait village in Mathura, played a crucial role in showcasing the bead making process using the Tulsi mala bead making device. Visitors had the opportunity to witness the device in action and learn about the art of making Tulsi malas. As part of the exhibition, Mr. Dharmender also sold Tulsi malas to interested attendees.

The exhibition was a success, and Mr. Dharmender's participation proved fruitful as he earned approximately ₹4000 from the sales of Tulsi malas during the expo. This not only provided him with a platform to showcase his skills and generate income but also demonstrated the potential of innovative devices in empowering artisans and promoting sustainable livelihoods in rural areas.

## >>> NEW PROJECTS IN COLLABORATION WITH KVIC

### 1. Development of a Small Scale Carding Machine for Processing Desi Wool in Decentralized Sector

RuTAG IIT Delhi and KVIC have commenced a project to develop a miniature carding machine for small-scale carding in the decentralized sector. This advancement will facilitate decentralized wool carding for small-scale productions. Currently, the centralized wool carding process at specific locations proves time-consuming and expensive due to transportation charges. With this development, such challenges will be alleviated, making the carding process more efficient and cost-effective, benefitting small-scale producers. This collaboration aims to create a lasting positive impact on the livelihoods of countless artisans and the overall economic growth of the nation.

### 2. Design and Development of Energy Efficient Pottery Kiln with Powdery Biomass Feeder

RuTAG IIT Delhi, in collaboration with KVIC, has initiated a new project to develop an energy-efficient pottery kiln with a biomass feeder. This project aims to address the issue of high fuel consumption and breakage in the traditional pottery firing process. The installation of a Rat-trap bonded kiln (Fig. 3) developed by RuTAG IIT Delhi in Poonchhari has already demonstrated significant savings in capital cost and time. The new kiln reduces fuel usage by 67%, resulting in savings of ₹1350 per firing. Breakage has also decreased from 20% to 3.6%, saving approximately ₹1900 per firing. These improvements lead to a total savings of ₹3280 per 3000 tawas. Moreover, the new kiln requires only 2 hours for preparation, compared to 6 hours in the traditional method, and allows for daily firing cycles instead of a 3-day process. The project aims to benefit around 40 potters in Poonchhari village and is expected to yield similar outcomes in Kachchh.



*Fig. 3: Rat-Trap Bonded Structure*

## >>> Ph. D. of Dr. Suraj Bhat at RuTAG IIT Delhi

Dr. Suraj Bhat (Fig. 4) has been recently awarded a PhD as a research scholar of RuTAG IIT Delhi. His research focused on analyzing technologies developed for the base of the economic pyramid (Fig. 5). Dr. Bhat examined various solutions aimed at uplifting disadvantaged communities, assessing their impact and scalability. His findings offer valuable insights for policymakers and practitioners in inclusive development. This achievement highlights RuTAG IIT Delhi's commitment to pioneering research for a more equitable society. His work also inspires future scholars to address the needs of marginalized communities.



*Fig. 4: Dr. Suraj with Prof. Saha and team*



Fig. 5: Thesis of Dr. Suraj

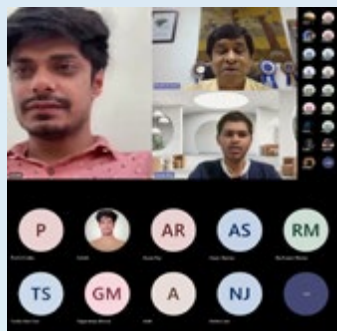


Fig. 6: Snapshots from the RuTAG IITD internship meeting

## ➤➤ Other Activities at a glance

### RuTAG Summer Internship 2023

The RuTAG IITD Summer Internship 2023 began in June with an impressive response (Fig. 6) of approximately 425 student applicants. Initially forming 105 teams of 4-5 students each, the shortlisted candidates were assigned tasks to showcase their abilities. Currently, the teams have been allocated projects focused on understanding and finding feasible solutions for rural communities. Students are actively researching and working on innovative interventions with guidance from experts and mentors. The internship provides hands-on experience and an opportunity to make a meaningful impact on rural development.

### Coop society formation

RuTAG IIT Delhi has taken a significant step towards forming a cooperative society with the support of NCUI Delhi. This society aims to facilitate the dissemination of technologies developed by RuTAG IIT Delhi and provide related services. By bridging the gap between technology and rural communities, the cooperative society will contribute to the overall betterment of rural areas.

### WeLD-ER, and WeLD-MI Sessions

RuTAG IIT Delhi has been actively participating in conducting online knowledge sharing sessions such as WeLD-ER (in collaboration with EPICS, Purdue University, USA) and WeLD-MI (multi-institutional). These sessions serve as platforms for teams to discuss and share updates on ongoing project activities. WeLD-MI sessions are organized monthly, while WeLD-ER sessions take place once every two months.

### Sheep Hair Shearing Device developed by RuTAG IIT Delhi

RuTAG IIT Delhi has successfully delivered a Sheep Hair Shearing Device to Sahajeevan, an NGO in Bhuj, Gujarat. This step would help mechanize the shearing process, leading to improved wool harvesting and enhancing the livelihoods of shepherds in the region.

### Contact Information

For technical advice and collaboration:

Prof. S. K. Saha, Editor

Ph. 011-26591135, E-mail:

sahaiitd@gmail.com

For general queries and newsletter: Mr.

Davinder Pal Singh / Mr. Ashish Dahiya

RuTAG IIT Delhi Office/Lab (Fig. 7)

(www.rutag.iitd.ac.in)

Ph. 011-26591385, 26548515 Email:

rutagiitdelhi@gmail.com



Fig. 7: The name panel in RuTAG Lab is crafted with jute rope by Mr. Mangal Sharma



Scan this qr code to order any of the ready for dissemination technologies developed by RuTAG IIT Delhi.