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THE RESEARCH NEWSLETTER OF MBUST



Advancing Research, Innovation, and Impact at MBUST



Editorial Note

Welcome to the September 2026 edition of MBUST Insights. This issue reflects how research and innovation at MBUST are increasingly connecting science with real-world challenges. From PhD research exploring healthcare innovations from native mushrooms, faculty involvement in indigenous microbes for sustainable soils, to engagement with farmers in Helambu on organic agriculture, our community continues to connect research with local needs.

This issue also highlights student-led problem-solving at Impact Week Nepal 2026, a scientific journey marking National Science Day, an applied remote sensing workshop conducted in collaboration with the University of Berlin, Germany, and emerging research on bamboo for a greener future. Together, these stories demonstrate MBUST's growing emphasis on interdisciplinary research, experiential learning, collaboration, and solutions for a more sustainable future.

*Editor-in-Chief
MBUST Insights*

Graduate Student Spotlight

He was inspired to join MBUST because of its interdisciplinary approach to science, technology, and innovation and its opportunity to connect academic research with practical challenges relevant to Nepal. His background in microbiology and previous experience in environmental and biodiversity research naturally led towards exploring Nepal's biological resources for health applications. The Mushroom Laboratory provided an exciting opportunity to investigate the largely unexplored potential of Nepalese wild mushrooms. Through doctoral research, he hopes to combine microbiology, natural-product research, and product development to generate knowledge and practical innovations from Nepal's own biological resources.

Research Interests: Medicinal and wild mushrooms of Nepal, Antimicrobial activity and antimicrobial resistance, Biofilm formation and antibiofilm agents, Natural products and bioactive compounds, Healthcare product development, Medical microbiology, Biodiversity

Atmaz Kumar Shrestha

PhD in Organic Agriculture (Sixth Semester)

Mushroom Laboratory, MBUST

Supervisor: Bhushan Shrestha, PhD



Atmaz Kumar Shrestha is a PhD researcher in the Organic Agriculture Program at Madan Bhandari University of Science and Technology (MBUST). Looking ahead, the goal is to continue working at the intersection of microbiology, natural-product research, mushroom science, and healthcare innovation. The research also aims to promote value addition to Nepal's biological resources while fostering scientific collaboration, teaching, capacity building, and partnerships among academia, industry, and local communities.

Research Grants & Projects

1. Healthcare Innovation from Native Mushrooms of Nepal - Researcher, MoEST Science, Technology & Innovation Program Grant | 2026
2. Natural Compounds from Medicinal Mushrooms for Healthcare Products - Researcher, MoEST Science, Technology & Innovation Program Grant | 2025

Posters Presented

1. Medicinal Mushrooms for Antimicrobial Discovery - KHK-2025, Kathmandu, Nepal | October 2025
2. Nepalese Medicinal Mushrooms for Healthcare Products - MoChWo-2025, Lalitpur, Nepal | October 2025
3. Biofilm-Producing Antibiotic-Resistant Bacteria in Drinking Water - 2nd South Asian Symposium on Microbial Ecology, Kathmandu | November 2023

Advice for future MBUST students

Be curious, ask meaningful research questions, and make the most of the interdisciplinary opportunities at MBUST. Research takes patience and persistence, so focus on learning from every experiment, field experience, and challenge along the way.

The upper belt of Helambhu is still practicing an organic farming system by default. If we act now, we can preserve and get the organic vegetables.

On the occasion of National Science Day on Ashoj 1 (17th Sep), Dr. Anupama Shrestha provided insights on organic agriculture to organic farmers of Helambhu. The training was conducted by Just Nepal Foundation with technical assistance from Madan Bhandari University of Science and Technology and LI-BIRD. This training was provided to the 20 active farmers of 5 villages of Helambu. The training highlighted on how to become organic farmers, how to make organic fertilizers, and how to manage disease without using chemical pesticides. The main aim of this training for active farmers was to bring the farmers to get their products in bulk, initiate for PGS [Participatory Guarantee System], and get the organic potato of the area certified. This will help to increase the income of the farmers of that area.

From Lab to Field

Science, farmers, and organic change in Helambu

-By Simran Shah

MAS in Organic Agriculture

Plant Protection and Biological Control Laboratory, MBUST



It feels great to help the farmers boost their knowledge and encourage them to adapt the organic farming practices.

W

hat happens when students are given a real-world problem, a few days to work on it, and the freedom to come up with their own ideas? For Arbind, Sujit, and Saroj Dhungel, the answer was an experience that brought together problem-solving, teamwork, and learning beyond the classroom.



Beyond the Classroom: Experience at Impact Week Nepal 2026

-By Arbind Singh Kushwaha

MAS in Sustainable and Resilient Infrastructure,
MBUST

Impact Week Nepal 2026 was held from August 26 to September 3, 2026, at King's College, Babarmahal, Kathmandu. It is a Germany-based international initiative that brings the Design Thinking program to different countries around the world. The 2026 edition brought together 108 participants and a 36-member coaching team from five countries. The coaching team included a Lead Coach from Germany, five Senior Coaches, and 30 Junior Coaches.

Our university was represented in two different roles. Saroj Dhungel participated as a Junior Coach, supporting student teams during the Design Thinking process, while Sujit and Arbind participated as student innovators, working with their team to understand the challenge, develop ideas, build a prototype, and prepare a final pitch.

The program was structured around the Double Diamond framework: Discover, Define, Develop, and Deliver. Throughout the program, the teams followed this process to understand the problem, define the challenge, develop ideas, and work towards a final solution.

What impressed us most was how seriously the program treated time. We were encouraged to spend enough time observing the problem before trying to solve it. A problem is not always clearly stated by the people experiencing it. Sometimes, you only understand what is really happening when you slow down, watch carefully, and pay attention to the small details. At the same time, with only a few days available, we had to manage our time wisely and know when to move from observation to action.

The experience also connected closely with the research work we do as students. We realized that having a good idea is only one part of the process. Being able to explain the problem, present the evidence behind an idea, and communicate its value clearly is equally important. The final pitching session gave us a chance to practice this in a short and focused way, something that is directly relevant to presenting our own research and ideas.

Impact Week gave us the chance to experience Design Thinking in practice, meet people from different backgrounds, and represent our college in an international learning environment. More than just developing a solution, the experience reminded us that good ideas often begin with taking the time to understand the problem properly.

On National Science Day 2083 (Ashoj 1), MBUST brought the spotlight to the people behind science through an inspiring experience-sharing session under the theme “*Science for Society: Our Research Journey for a Collective Future.*”

The session featured diverse scientific journeys - from Dr. Dinesh Raj Bhujū’s reflections on the history and significance of National Science Day, to Mr. Saugat R.C.’s science poem, Mr. Nilkantha Regmi’s research experience at the Asian Institute of Technology (AIT), and Dr. Sandhya Sharma’s journey from zoology to artificial intelligence. Together, these stories highlighted how curiosity, persistence, and interdisciplinary thinking shape scientific careers.



The celebration also welcomed secondary-level students from Bajrabarahi, who explored MBUST’s laboratories and experienced university research up close. After the presentations, Dr. Bhujū asked the students which subject they enjoyed most. Around 80% answered, “Science.”

Their response captured the spirit of the day - science is not only about discoveries and laboratories, but also about inspiring the next generation to ask questions, explore possibilities, and imagine new solutions for society.

Celebrating Scientific Journeys

National Science Day 2083

-By Saugat R.C.
MAS in Organic Agriculture
Mushroom Laboratory, MBUST

Indigenous Microbiomes, Healthier Soils

Advancing sustainable agriculture through the power of native microbes.

-By Aakirti Poudel

MAS in Organic Agriculture

Plant Protection and Biological Control Laboratory, MBUST

Anupama Shrestha, PhD was invited to the International Conference on Pomegranate held on 6th -8th September, 2026 in Pune, Maharashtra, India. It was organized by Society for Advancement of Pomegranate Research, Solapur, ICAR-NRC on pomegranate, and Mahatma Phule Krishi Vidya peeth. She presented on the critical role of indigenous microbiomes in promoting sustainable organic agriculture.

Dr. Shrestha mentioned that attending the Conference was a highly enriching and professionally rewarding experience. The conference provided a comprehensive overview of the latest research, technologies, and best practices in pomegranate production, protection, post-harvest management, and value addition. The presentation on indigenous microbiomes in organic farming systems was well received and generated significant interest, opening avenues for future collaboration.

The conference emphasized the importance of sustainable, climate-resilient, and biologically based approaches for horticultural production. It also highlighted the critical role of international collaboration, farmer-researcher-entrepreneur interfaces, and digital technologies in addressing the challenges facing pomegranate cultivation globally.



From Mission to Discovery

Hands-on remote sensing, mapping, and real-world data.

-By *Ritu Raj Lamsal, PhD*

Assistant Professor

Program Coordinator, Digital Technology, MBUST

Madan Bhandari University of Science and Technology (MBUST), in collaboration with the Technical University of Berlin, Germany, successfully conducted a two-day workshop on "Applied Remote Sensing Technologies and Mobile Mapping" on September 28 and 29 at its Chitlang campus.

The event commenced with an opening session led by Dr. Ritu Raj Lamsal, Coordinator of the Digital Technology Program, who underscored the critical importance of remote sensing in modern research and development. He highlighted the capabilities of state-of-the-art devices such as LiDAR, UAV/drone RGB cameras, and Hyperspectral cameras, illustrating their diverse use cases ranging from precision mapping and agriculture to early warning systems. Following this, Dr. Robert Jackisch from the Technical University of Berlin took the stage to delve deeper into the technology, showcasing specific use cases and emphasizing how these tools can significantly enhance research capabilities.

The workshop provided participants with a highly engaging, hands-on experience, allowing them to work directly with drones, LiDAR, and hyperspectral cameras. Attendees moved beyond theory to actively collect raw data, which they subsequently processed to derive meaningful insights—experiencing the full workflow from "Mission to Discovery." The practical sessions met with great enthusiasm, equipping participants with essential skills in flight mechanics, data processing, and spectral analysis.



Bamboo for a Greener Future

Research meets sustainable innovation

-By Mukesh Maharjan and Rupesh Shakya

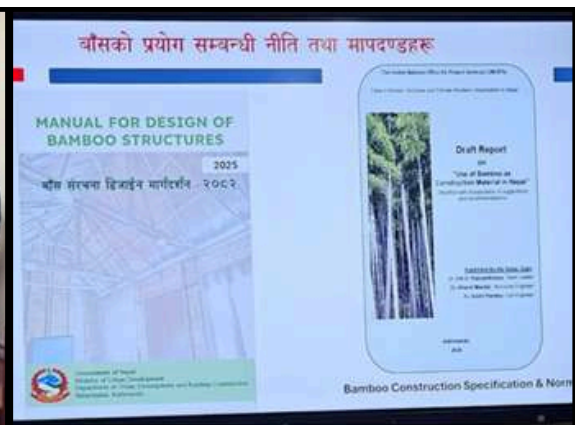
PhD Scholar, Forest Biomaterial Science and Engineering, MBUST
Master's Student, Sustainable and Resilient Infrastructure, MBUST

Phd scholar Er. Mukesh Maharjan, along with Er. Rupesh Shakya, represented MBUST at a World Bamboo Day seminar at Pulchowk Engineering Campus. Er. Maharjan shared insights from his doctoral research on forest biomaterials and bamboo, including a two-storey design concept for flood-disaster reconstruction.

The seminar brought together researchers, professionals, and students to explore bamboo's potential in sustainable construction, environmental conservation, and community development. Discussions highlighted challenges across the bamboo value chain, from cultivation and harvesting to market development and wider adoption.



Seminar speakers. Top row (left to right): Session Chair Prof. Dr. Sangeeta Singh, Chief Guest Ganesh Shah, and Keynote Speaker Prof. Dr. Jibraj Pokharel. Second row (left to right): Assistant Professor Dr. Kshitiz Chand Shrestha (IOE), Lachhindra Maharjan (Habitat for Humanity Nepal), Tanka Gautam (DUDBC), Krishna Prasad Aryal (Green Bamboo Creations), and Mukesh Maharjan (MBUST).



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In 2022, the Government of Nepal established Madan Bhandari University of Science and Technology (MBUST) with a bold vision: to create a world-class research university that addresses Nepal's most pressing challenges through science, technology, innovation, and entrepreneurship.

Our students and faculty are already working on:

- Artificial Intelligence and Data Science
- Climate Change and Eco-Hydrology
- Genomics and Biotechnology
- Sustainable Infrastructure and Earthquake Engineering
- Biodiversity Conservation and Natural Resources Management
- Advanced Materials and Manufacturing

But building a world-class university requires more than ambition.

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