

INNOVATIVE COPPER-INFUSED FILMS: A BREAKTHROUGH IN WOUND HEALING



A team of researchers from the CSIR-North East Institute of Science and Technology Jorhat has made a remarkable contribution to advanced wound care, as detailed in their recent publication in the *International Journal of Biological Macromolecules* (Impact Factor: 7.7). Their study focuses on the development of antibacterial films using a blend of copper cross-linked carboxymethyl cellulose (CMC) and polyvinyl alcohol (PVA), offering enhanced mechanical strength, improved cell attachment, and accelerated wound healing properties.

The films, designed through a solution casting method, utilized citric acid (4%) as a cross-linking agent and glycerol (3%) as a plasticizer. Copper ions, introduced via cupric chloride dihydrate ($\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$) at varying concentrations (0.5%, 1%, and 3%), were found to play a crucial role in determining the film's properties. Cross-linking durations were adjusted between 5 to 15 minutes, with copper ions significantly influencing elasticity, swelling, and cell proliferation.

Fourier-transform infrared spectroscopy (FTIR) validated the esterification reactions and copper ion interactions with sodium carboxymethyl cellulose, further reinforcing

the structural integrity of the films. The ion-release mechanism followed a non-Fickian super case-II transport model, indicating sustained therapeutic ion delivery.

This groundbreaking research not only underscores the potential of copper-infused materials for advanced wound care but also provides a framework for developing versatile and cost-effective solutions for burn treatment. By combining antibacterial efficacy, biocompatibility, and robust mechanical properties, these films offer a promising alternative for addressing wound management challenges.

CSIR-NEIST HOSTS FARMER TRAINING ON MEDICINAL AND AROMATIC PLANTS



Dr V M Tiwari, Director, CSIR-NEIST, while distributing plants to the farmers

CSIR-North East Institute of Science and Technology (CSIR-NEIST) organized a one-day training-cum-awareness program on medicinal and aromatic plants in collaboration with the Balsy Group Foundation. The event was held at Meleng Balichapori Gram Panchayat in Pakhimora Gaon, Jorhat Central Block.



Dr V M Tiwari, Director of CSIR-NEIST, graced the occasion and highlighted the importance of women empowerment and the role of medicinal and aromatic plants (MAPs) in doubling farmers' income. He emphasized the vast opportunities and potential these crops offer for the region and the nation.



The program aimed to equip farmers with knowledge about the cultivation, processing, and economic benefits of MAPs. Experts from CSIR-NEIST and the Balsy Group Foundation shared valuable insights on sustainable farming practices, market linkages, and value-added products.

This initiative reflects CSIR-NEIST's commitment to fostering rural development and empowering farmers, particularly women, through sustainable agricultural practices and innovative opportunities.

CSIR-NEIST HOSTS CURTAIN RAISER FOR INDIA INTERNATIONAL SCIENCE FESTIVAL 2024



(Left) Dr V M Tiwari, Director , CSIR-NEIST Jorhat, (Center) Shri A Jayakumar, Ex Secretary General, VIBHA, (Right) Dr P K Mishra, Vice Chancellor, The Assam Kaziranga University, Jorhat

On November 8, 2024, CSIR-North East Institute of Science and Technology (CSIR-NEIST), Jorhat, Assam, hosted the Curtain Raiser Ceremony for the upcoming India International Science Festival (IISF) 2024. The event was held in a hybrid mode, allowing both in person and virtual attendance to encourage wider participation. This curtain raiser was organized as a prelude to the main IISF event, with the aim of promoting scientific awareness and collaboration among students, researchers, and the general public.

The ceremony, held at 4:30 PM, began with a candle lighting ceremony and a warm welcome address by Dr Virendra M Tiwari, Director of CSIR-NEIST. Dr Tiwari felicitated the Chief Guest Shri A Jayakumar, Ex Secy General, VIBHA, and Guest of Honour Dr P K Msihra, Vice Chancellor, The Assam Kaziranga University Jorhat, and Air Commodore R Arvind, AOC 10 wg Air Force Station Jorhat. Dr Tiwari highlighted the role of IISF in promoting a scientific mindset across India and emphasized the institute's contributions to advancing science and technology in the North East region in his speech. Dr. V. M. Tiwari highlighted in his speech that one of the key attractions at the upcoming IISF event will be the Chandrayan, a special moon museum that will be displayed at IIT Guwahati. This exhibit is being crafted with great detail in the United Kingdom to make it as realistic as possible. Dr Tiwari urged everyone to visit this unique museum

and encouraged attendees to participate in the various programmes scheduled at the IISF event at IIT Guwahati.



Dr P K Mishra, Vice Chancellor of KU, while delivering speech

Guest of Honour Dr P K Mishra, Vice Chancellor of Kaziranga University, shared his insights into IISF 2024, emphasizing the importance of interdisciplinary research for the nation's progress and development. Dr Mishra praised IISF's role in encouraging young scientists to explore new fields and work collaboratively across disciplines. Dr Mishra spoke about how higher education has helped many countries develop and succeed. He pointed out that, during colonial times, the British were concerned about the intelligence of Indians and tried to limit their access to higher education, which weakened India's education system. Dr Mishra also noted that India was once a centre of learning, attracting students from around the world. However, over time, this strong education system was damaged and lost its global influence.



Shri A Jayakumar, Ex Secretary General, VIBHA, while delivering presentation

Chief Guest Shri A Jayakumar, in his speech, mentioned that the Curtain Raiser Ceremony sets an enthusiastic stage for IISF 2024, promises an impressive line up of workshops, exhibitions, and events aimed at inspiring innovation and promoting a scientific mindset across the nation. Shri Jayakumar explained

that the purpose of IISF is to promote higher education and to inspire more people, especially the general public, to engage with science. He also mentioned the ancient Nalanda University and India's long standing contributions to science. Shri Jayakumar expressed confidence that, with this spirit, India will soon lead the world in many areas. The event concluded with a vote of thanks delivered by Dr Sanjay Deori, Principal Scientist at CSIR-NEIST who expressed gratitude to the distinguished guests, participants, and attendees.

CSIR-NEIST HOSTS SUCCESSFUL CONFERENCE ON AGRICULTURE, NUTRITION, AND BIOTECHNOLOGY THEME (ANB)



Programme inauguration with a lamp lighting ceremony

CSIR-North East Institute of Science and Technology (NEIST), Jorhat, Assam, held an impactful conference on Agriculture, Nutrition, and Biotechnology (ANB) on November 9, 2024. The event gathered scientists and industry leaders to discuss advancements in these fields, with a focus on fragrance market opportunities, consumer safety standards, and skill development. The event started with an inaugural ceremony led by Dr Virendra M Tiwari, Director of CSIR-NEIST, who welcomed and felicitated the Chief Guest Dr S V Shukla, Director of FFDC, Kannauj, the Guest of Honour Dr Nitin Kulkarni, Director of ICFRE-RFRI, Jorhat and also thanked Dr Prabodh Kumar Trivedi, Director of CSIR-CIMAP and also the Theme Director of ANB theme, for attending the event virtually.



Dr Tiwari, Director, CSIR-NEIST, while delivering his speech

On his speech, Dr Tiwari emphasized that through integrating expertise across various fields, the scientific community can transform challenges into opportunities, meeting India's needs for sustainable agriculture, improved nutrition, and biotechnological advancements. Dr Tiwari highlighted CSIR's commitment to showcasing its impact on society, emphasizing transparency for taxpayers. He praised the success of the "One Week One Lab" programme, where each of CSIR's 37 labs presented their technologies and connects with stakeholders, including industries, government bodies, and farmers. Dr. Tiwari noted the strong involvement of farmers adopting CSIR's plantation initiatives, NGOs linking farmers to these efforts, and industries using CSIR's innovations to create products, further demonstrating CSIR's reach and societal contributions. Dr Tiwari expressed satisfaction with the enthusiastic participation of stakeholders, including farmers who are adopting CSIR-NEIST's plantation initiatives and NGOs that are actively connecting farmers with these programs. Industries are also engaging by using plants which are developed by CSIR and converting them into products. In closing, Dr Tiwari encouraged young people to contribute to the betterment of society and the nation through the ANB theme.

After the welcome address, Dr Prabodh Kumar Trivedi, Director of CSIR-CIMAP, joined virtually to discuss India's potential in the global agricultural landscape. He highlighted the ANB theme's focus on empowering the farming community and fostering entrepreneurship. Dr Trivedi encouraged cultivating aromatic crops on underutilized lands and acknowledged CSIR's

contributions in nutrition and agriculture. He concluded by thanking and admiring Dr Tiwari for his leadership of the CSIR-NEIST Jorhat team, expressing confidence that India is on a path toward joining the ranks of developed nations.



Dr Nitin Kulkarni, Director of ICFRE-RFRI, Jorhat

Dr Nitin Kulkarni, Director of ICFRE-RFRI, Jorhat, spoke as the Guest of Honour, encouraging solutions that are environmentally sustainable and economically viable, and underscoring that science should lead to real and sustainable development. Dr Kulkarni, emphasized the need for environmentally sustainable and economically viable solutions, stating that science should lead to real, sustainable development. He highlighted the visible effects of climate change, stressing the challenges it poses to agriculture and the importance of public awareness. Dr Kulkarni also spoke about biotechnology's role in food security, the sustainable use of bio resources, and efforts to rejuvenate the Brahmaputra and other rivers, urging everyone to stay informed and responsive to these critical issues.



Shri S V Shukla, Director of FFDC Kannauj

Shri S V Shukla, Director of FFDC Kannauj, began his address with gratitude, commending CSIR for its longstanding and impactful work. He offered insights into the fragrance

industry, discussing its growth potential and steps for aspiring entrepreneurs to enter the field. Shri Shukla emphasized the importance of collaboration between CSIR NEIST, other CSIR labs, and industry partners to drive innovation and strengthen the sector. He encouraged the audience to explore opportunities in fragrance production and entrepreneurship, highlighting the industry's capacity to create jobs and add economic value through unique products and partnerships.



Dr Siddhartha P Saikia, Senior Principal Scientist, CSIR-NEIST

The inaugural session closed with a Vote of Thanks from Dr Siddhartha P Saikia, the Convenor, who expressed gratitude to all distinguished speakers and attendees.



Shri S V Shukla, Director of FFDC, Kannauj, while delivering his presentation

The technical sessions showcased India's progress in biotechnology and agriculture. The session included presentations from Shri S V Shukla, Director of FFDC, Kannauj, showcasing India's rich heritage and potential in the fragrance industry. Shri S V Shukla spoke about the fragrance industry, FFDC, and advancements in agro technology, highlighting menthol farming as a growing, revenue generating sector. He explained that FFDC has trained many farmers, helping them build successful businesses through aromatic

plant cultivation. Shri Shukla discussed the processes and uses of aromatic plants and provided an overview of the global essential oils market, underscoring its economic potential.



Mr Syed Abdul Quavi, Agarwood Consultant, while delivering his presentation



Dr Shahid Rasool, Senior Scientist, CSIR-IIIM Jammu, joining the session virtually

Mr Syed Abdul Quavi, Agarwood Consultant from Guwahati, and Dr Shahid Rasool, Senior Scientist, CSIR-IIIM Jammu, also shared valuable insights. They urged local businesses to leverage India's rich biodiversity, highlighting the need to develop skills among youth to thrive into the growing fragrance and food industry. The session concluded with an interactive discussion, allowing participants to engage with experts on industry challenges and opportunities.



Dr Hirak Ranjan Das, I M, Ministry of Education's Innovation Cell, while delivering his presentation

Dr Hirak Ranjan Das, Innovation Manager at the Ministry of Education's Innovation Cell, stressed the need for global safety benchmarks. He gave a brief description about IPR and technology transfer.



Shri Venugopalan V V, Chief Scientist at CSIR-NIIST, joining the session virtually



Shri Ajit Sarmah Baruah, Director of Bhogali Food Products Pvt Limited, Guwahati, while delivering his presentation

Other speakers, including Shri Venugopalan V V, Chief Scientist at CSIR-NIIST, who joined online, and Shri Ajit Sarmah Baruah, Director of Bhogali Food Products Pvt Limited, Guwahati, shared insights on implementing safety standards that align with both local and international requirements.



Kangan Jyoti Kharghoria, Project Manager at Assam Startup, Guwahati, while delivering his speech

Lastly, Kangan Jyoti Kharghoria, Project Manager at Assam Startup, Guwahati, delivered a speech encouraging attendees to take the initiative and explore opportunities in various industries. He promoted entrepreneurship and emphasized the support available for those ready to dive into the business sector.

The day concluded with a Valedictory Function, where speakers offered closing thoughts on the future of agriculture, biotechnology, and nutrition in India. Participants were then taken on a field visit to CSIR-NEIST's research facilities, gaining a view of ongoing projects pushing the frontiers of science.

CSIR-NEIST SHOWCASES INNOVATIONS AT CSIR-IICB'S HEALTHCARE THEME PROGRAM



CSIR-North East Institute of Science and Technology (CSIR-NEIST) participated in the *One Week One Theme* program under the Healthcare theme, held at CSIR-Indian Institute of Chemical Biology (CSIR-IICB), Kolkata, from November 11 to 12, 2024.



During the event, CSIR-NEIST showcased a range of innovative healthcare and related products developed at its Jorhat campus. The exhibit highlighted the institute's contributions to advancing healthcare solutions through cutting-edge research and development.



Director General of CSIR visited the CSIR-NEIST stall and commended the innovative efforts and impactful products displayed.

The program provided a platform for knowledge exchange and collaboration, reaffirming CSIR-NEIST's role in driving scientific advancements in healthcare for the benefit of society.

FRENCH INSTITUTE REPRESENTATIVE VISITS CSIR-NEIST, HIGHLIGHTS RESEARCH OPPORTUNITIES



Mr Aymeric Vo Quang, Project Manager from the French Institute in India (IFI), while receiving felicitation from CSIR-NEIST led by Dr V M Tiwari, Director, CSIR-NEIST Jorhat

Mr Aymeric Vo Quang, Project Manager from the French Institute in India (IFI), visited CSIR-North East Institute of Science and Technology (CSIR-NEIST), Jorhat, and delivered an insightful talk on "Research Opportunities in France". The session aimed to foster collaboration and inform researchers about avenues for academic and scientific exchange in France.

During the event, Dr B K Choudhury, Senior Scientist at CSIR-NEIST, shared his experiences from his visit to the Institut de Physique du Globe de Paris (IPGP), France, under the Scientific Research Training Fellowship (SRTF) facilitated by IFI. His insights provided valuable guidance to aspiring researchers looking to explore international opportunities.

The visit underscored the importance of international collaboration in advancing research and innovation, strengthening ties between Indian and French scientific communities.

PARLIAMENTARY STANDING COMMITTEE VISITS CSIR-NEIST, JORHAT: HIGHLIGHTS INNOVATIONS FOR THE NORTHEAST



The Parliamentary Standing Committee on Science and Technology, Environment, Forests, and Climate Change, GoI, visited the CSIR-North East Institute of Science and Technology (CSIR-NEIST), Jorhat, On November 20, 2024.

Dr Virendra M Tiwari, Director, CSIR-NEIST, extended a warm welcome to the esteemed guests, led by Shri Bhubaneswar Kalita, Chairman of the Committee and Member of Parliament. Accompanying him, prominent MPs including Yaduveer Wadiyar, Jashubhai Rathva, Trivendra Singh Rawat, Adv K Francis George, Mr Mohibullah, and Mahesh Kashyap, along with senior government officials Smt Kusum Sudhir (Joint Secretary), Shri Arun Kumar (Director), Shri Deepak Bhorla (Under Secretary), Shri Harish Kumar (Secretariat Assistant) and representatives from Department of Scientific

and Industrial Research (DSIR), Delhi, including Dr Dipika Rohatgi, Scientist, and Paramjeet Chadha, Deputy Secretary, and P Hariharar, Technical Officer, also participated. Also Kamakhya Prasad Tasa, Member of Parliament, accompanied them.



Dr V M Tiwari, Director, CSIR-NEIST Jorhat, felicitating Shri Bhubaneswar Kalita, Member of Parliament, Govt. of India

The visit commenced with a meeting at CSIR-NEIST's Iyenger Hall. Shri Bhubaneswar Kalita actively interacted with Dr Virendra M Tiwari and the present scientists, commending their dedication and the impactful work being carried out at the institute. Dr Tiwari delivered a comprehensive presentation to the committee, highlighting the institute's significant achievements, ongoing research activities, and contributions to scientific innovation. The presentation offered an overview of CSIR-NEIST's impactful work and its role in addressing regional and national challenges through research and development in the North East Region. Later on, committee members engaged in insightful discussions with Dr Tiwari and Chief Scientists and provided valuable suggestions for improving the quality of research and innovation, ensuring it remains relevant to the evolving needs of society and the objectives of sustainable development.

Following the meeting, the delegation visited CSIR-NEIST's experimental farms and the Science and Technological Intervention for North East India (STINER) facility, and an exhibition organised on CSIR-NEIST technologies. They observed products and technologies developed by the institute, reflecting its focus on sustainable innovation. The committee expressed appreciation for the revolutionary work contributing to the transformative changes to the region.

CSIR-NEIST HOSTS INAUGURAL CEREMONY FOR OMICSBIOMAPP PROGRAMME 2024



CSIR-North East Institute of Science and Technology (CSIR-NEIST), Jorhat, Assam, hosted the Inaugural Ceremony of the OmicsBioMApp Programme 2024. The event, held in hybrid mode to facilitate both in-person and virtual participation, aimed to promote human health, scientific awareness, and collaboration among students, researchers, and the public.



(Left)Dr V M Tiwari felicitating Dr Sharmila Mande (Right)

The programme commenced with a traditional lamp lighting ceremony. Dr V M Tiwari, Director of CSIR-NEIST, felicitated and extended a warm welcome to Dr Sharmila Mande, Ayush Distinguished Scientist Chair, Ministry of Ayush, the Chief Guest, the attendees and the distinguished guests, and Dr Yogesh Shouche, Honorary Scientist, NCCS Pune, and Director of SKAN Research Trust, who participated virtually.



Dr V M Tiwari, Director, CSIR-NEIST, while delivering speech

In his address, Dr Tiwari emphasized the importance of empowering the youth through science and technology to foster development. He highlighted the unique challenges faced by the North East region, including genetically linked diseases, and underscored the potential of personalized medicine as a solution. He also invited participants to explore the research being conducted at CSIR-NEIST labs, expressing his gratitude to all dignitaries for their valuable contributions to the event.



Dr Romi Wahengbam, Scientist, CSIR-NEIST, while delivering speech

Dr Romi Wahengbam, Programme Coordinator of OmicsBioMApp, provided an overview of the initiative, explaining how it aligns with the Department of Health Research's (DHR) vision for discovering innovative treatments. He noted that this was the inaugural training programme under the BioMApp initiative, marking a significant milestone in advancing biomedical research.



Dr Shridhar S Hiremath, Scientist, CSIR-NEIST, while delivering speech

Dr Shridhar S Hiremath, Co-coordinator of OmicsBioMApp, introduced Dr Yogesh Shouche, who delivered a virtual keynote address on the transformative role of microbiomes in human health. Dr Shouche elaborated on the potential of microbes as critical resources, discussing topics such as the role of gut microbiomes in disease control, microbiome engineering, and their application in addressing autoimmune diseases and oncology. He also provided insights into the current status of microbiome-based drugs and the importance of anaerobic and facultative anaerobic culture isolation in microbiological research.



Dr Sharmila Mande, Guest Professor, Indian Institute of Technology, Gandhinagar, while delivering presentation

Following Dr Shouche's presentation, Dr Sharmila Mande delivered an insightful talk on advancements in bioinformatics for OMICs data analysis. She presented an overview of genomics, genetics, and various OMICs approaches, including Single-OMICs technologies for specific components of the central dogma. Dr Mande highlighted the technologies used for OMICs data generation and distinguished between technology-based and knowledge-based OMICs. She elaborated on protein interactions in DNA and genome-wide association studies, particularly the significance of single-nucleotide

polymorphisms (SNPs) in healthcare. She concluded by discussing the importance of gut health and expressed her gratitude to the audience for their attentiveness. The session concluded with an engaging Q&A segment, where scientists and students posed insightful questions to Dr Mande.



Dr Anil Kumar Singh, Principal Scientist, CSIR-NEIST, while delivering the Vote of Thanks

Dr Anil Kumar Singh, Principal Scientist & Associate Professor at CSIR-NEIST and Programme Coordinator, delivered the vote of thanks, expressing appreciation to all speakers, participants, and organizers for their contributions to the successful event.

The OmicsBioMApp Programme 2024 has set a promising foundation for fostering collaboration and innovation in biomedical research, particularly in the context of personalized medicine, microbiome applications, and advanced bioinformatics.

ACHIEVEMENTS:



Dr Bhagyashree Bora, Senior Project Associate, CSIR-NEIST, while receiving the award

Dr Bhagyashree Bora, Senior Project Associate at CSIR-NEIST, has been honored with the *Springer Nature Best Oral Presentation Award* at the 65th International Conference of the Association of Microbiologists of India (AMI), held in Hisar. Dr Bora, who is working under the guidance of Dr Natarajan Velmurugan, received this

prestigious recognition for her outstanding presentation. The achievement highlights the excellence and innovative contributions of CSIR-NEIST researchers in the field, further cementing the institute's reputation on international platforms.

PAPER PUBLISHED:

In International Peer Reviewed Journals

- Title:** Enantioselective Membranes for Pharmaceutical Applications: A Comprehensive Review
Authors: Monti Gogoi, Rajiv Goswami, Akhil Ranjan Borah, Lachit Phukan, Swapnali Hazarika
Journal: *Biomedical chromatography* 2024
<https://analyticalsciencejournals.onlinelibrary.wiley.com/doi/full/10.1002/bmc.6047>
IF: 1.8
- Title:** Regioselective alkenylation of masked carboxylic acid derivatives of coumarins with acrylates via oxidative C(sp²)-C(sp²) cross-coupling
Authors: Kalakonda Raga Chaitanya, Srinivas Ambala, Bheeshma Geetanjali Kodiripaka and Bathini Nagendra Babu
Journal: *NEW JOURNAL OF CHEMISTRY* 2024
<https://pubs.rsc.org/en/content/articlelanding/2024/nj/d4nj04014g>
IF: 3.3
- Title:** Fine Tuning of Torus-Shaped Mo-Doped Ni₂P Nanorings for Enhanced Seawater Electrolysis
Authors: Abhinav Yadav, Manash R. Das, Sasanka Deka
Journal: *SMALL* 2024
<https://onlinelibrary.wiley.com/doi/10.1002/sml.202408036>
IF: 13.3
- Title:** Assessment of Bioactivity of *Homalomena aromatica* Essential Oil From Northeast India Through Combinative In Vitro and In Silico Approaches
Authors: Tanmita Gupta, Prajisha Jayaprakash, Raghu Tamang, Neelav Sarma, Twahira Begum, Mohan Lal

Journal: *Chemistry & biodiversity* 2024

<https://onlinelibrary.wiley.com/doi/10.1002/cbdv.202402254>

IF: 2.9

5. **Title:** Ethanol-assisted in situ stimulated graphene oxide as support for CuO/NiO nanoparticles

Authors: Manash J Baruah, Eramoni Saikia, Nand Kishor Gour, N Priyanshu Singh, Bitupon Borthakur, Uttam Mohan, Arup Jyoti Das, Rahul Kemprai, Bikash K Sarmah, Rupjyoti Dutta, Young-Bin Park, Biraj Das and Mukesh Sharma

Journal: *RSC advances* 2024

<https://pubs.rsc.org/en/content/articlelanding/2024/ra/d4ra04308a>

IF: 3.9

6. **Title:** Exploring bacterial metabolites in microbe-human host dialogue and their therapeutic potential in Alzheimer's diseases

Authors: Sarangthem Dinamani Singh, Pankaj Bharali & Selvaraman Nagamani

Journal: *MOLECULAR DIVERSITY* 2024

<https://link.springer.com/article/10.1007/s11030-024-11028-y>

IF: 3.8

7. **Title:** In Situ Stabilization of Bi Nanoparticles into the Nanopores of Modified Montmorillonite: Efficient Heterogeneous Catalysts for Reduction of 4-Nitrophenol

Authors: Utpal Sadhonider, Jayashree Nath, Gitashree Darabdhara, Arabinda Baruah, Lakshi Saikia, Bhaskar Jyoti Sarmah

Journal: *LANGMUIR* 2024

<https://pubs.acs.org/doi/10.1021/acs.langmuir.4c02477>

IF: 3.9

8. **Title:** Kinetic analysis and pyrolysis behavior of organic fraction of municipal solid waste towards the production of renewable fuel: A sustainable approach to resource recovery for circular economy

Authors: Mondita Athparia, Nabajyoti Saikia, Ashutosh Namdeo, Ankit Garg, Prakash Kumar Sarangi, Rupam Kataki

Journal: *Sustainable Chemistry and Pharmacy* 2024

<https://www.sciencedirect.com/science/article/abs/pii/S2352554124003978?via%3Dihub>

IF: 6

9. **Title:** Application of *Tectona grandis* Leaf Extract for Efficient and Stabilized Coloration of Mulberry Silk Fabric

Authors: Shristirupa Borah, Rinku Moni Kalita, Priyanga Manjuri Bhuyan, Barnali Sarma, Swapnali Hazarika, Parikshit Gogoi

Journal: *FIBERS AND POLYMERS* 2024

<https://link.springer.com/article/10.1007/s12221-024-00752-9>

IF: 2.5

10. **Title:** Sustainable protocol for Cu-catalysed A3-coupling under solvent-free conditions

Authors: Anjali Chaturvedi, Vishal Sharma, Ravindra K Rawal, Manpreet Singh and Virender Singh

Journal: *Organic & Biomolecular Chemistry* 2024

<https://pubs.rsc.org/en/content/articlelanding/2025/ob/d4ob01728e>

IF: 3.2

11. **Title:** Leveraging environmental microbial indicators in wastewater for data-driven disease diagnostics

Authors: Gayatri Gogoi, Sarangthem Dinamani Singh, Devpratim Koch, Emon Kalyan, Rashmi Rani Boro, Aradhana Devi, Hridoy Jyoti Mahanta and Pankaj Bharali

Journal: *Frontiers in bioengineering and biotechnology* 2024

<https://www.frontiersin.org/journals/bioengineering-and-biotechnology/articles/10.3389/fbioe.2024.1508964/full>

IF: 5.7

12. **Title:** Highly dispersed Pd-nanoparticles in vanadium oxide

supported zeolite-Y for C-C coupling reaction through C-Cl bond activation

Authors: Tonmoy J Bora, Nand K Gour, Lakshi Saikia, Unnati Bora, Nitumoni Hazarika, Donguk Kim, Young-Bin Park, Rafikul Ali Saha, Arpita Devi, Galla V Karunakar, Magdi E A Zaki, Kusum K Bania

Journal: *Applied Catalysis A: General*
<https://www.sciencedirect.com/science/article/pii/S0926860X24004988?via%3Dihub>

IF: 5.5

13. **Title:** Polymeric Membranes for Liquid Separation: Innovations in Materials, Fabrication, and Industrial Applications.

Authors: Lalit Ranjan Sahu, Diksha Yadav, Debasish Borah, Anuranjit Gogoi, Subrata Goswami, Gauri Hazarika, Sachin Karki, Moucham Borpatra Gohain, Saurabh V Sawake, Sumit V Jadhav, Soumya Chatterjee, Pravin G Ingole

Journal: *POLYMERS 2024*
<https://www.mdpi.com/2073-4360/16/23/3240>

IF: 5

14. **Title:** Green Synthesis of Montmorillonite Clay Supported Co₃O₄ Nanoparticles and Its Catalytic Efficacy Towards Baeyer-Villiger Oxidation

Authors: Subrat Jyoti Borah, Rashmi Rekha Hazarika, Sumit Gorh & Dipanka Dutta

Journal: *CATALYSIS LETTERS*
<https://link.springer.com/article/10.1007/s10562-024-04872-y>

IF: 2.3