



ISSN 0409-7467

CSIR News

NEWSLETTER OF THE COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

Volume 72 No. 6

website: <http://www.csir.res.in>

June 2022

World Environment Day 2022

CSIR-IHBT Celebrates World Environment Day

**World Environment Day – Theme – Only One Earth
(5th June, 2022)**

**Biodiversity Conservation and Management in the Context of
Indian Himalayan Region**

Organized By

**CSIR – Institute of Himalayan Bioresource Technology,
Palampur, Himachal Pradesh**

Dr. S. S. Samant, DSc, FNASc, FSE

M - + 91 9816316318

E-mail: dir_ihbt@icmr.org; samants2012@rediffmail.com



**Director, Himalayan Forest Research Institute,
Panthaghati – 171 013, Shimla, Himachal Pradesh, India**



World Environment Day is celebrated every year on 5 June across the globe as an initiative of the United Nations Environment Programme (UNEP) to spread awareness about the importance of conserving planet Earth.

CSIR-Himalayan Institute of Bioresource Technology (CSIR-IHBT), Palampur,

celebrated the World Environment Day on 6 June 2022. Dr Sanjay Kumar, Director, CSIR-IHBT, in his welcome address said that the Institute is constantly striving towards the goal of discovering, innovating, developing and disseminating processes, products and technologies from the Himalayan bio-resources

Dr Sanjay Kumar said that CSIR-IHBT is contributing to the environmental protection of the Himalayan region through its research and development activities.

for social, environmental, industrial and academic benefits. The Institute has taken unique/innovative initiatives to encourage specific high-value crops to develop livelihoods and products while harnessing the benefit of the Himalayan environment.

Dr Sanjay Kumar said that CSIR-IHBT is also contributing to the environmental protection of the Himalayan region through its research and development activities. The institute has developed agrotechnologies for rare and threatened plant species such as *Sinopodophyllumhexandrum*, *Picrorhizakurroa*, *Fritillariaroylei* and *Trillium govanium* to increase their productivity and profitability per unit land area. Efforts are also being made to change their rare and threatened status through augmentation of natural habitat. High-valued plants of *Picrorhizakurroa* and *Fritillariaroylei* were multiplied through the tissue culture technique and the institute has also planted them in their natural habitat.

Next, Dr S.S. Samant, Director, Himalayan Forest Research Institute (HFRI), Shimla, delivered a lecture on "Biodiversity Conservation and

Management in context to Indian Himalayan Region". In his address, Dr Samant gave information about the activities of the Indian Council of Forestry Research and Education and its institutions. He further added that the Indian Himalayan region is rich in biodiversity. The flora and fauna of the Himalayas are very special and the effect of climate change is now visible in this region as well, which has led to changes in botanical and cropping patterns. Himalayan biodiversity is very important from an economic point of view. Therefore, sincere efforts are required for its conservation. He laid special emphasis on the classification of plants by location-specific threats and reliance on data received from field surveys for their conservation and management. In his presentation, he provided detailed information on the region-wise features, diversity, conservation, and socio-economic aspects of the Himalayas.

The programme was coordinated by Dr R.K. Sud, Chief Scientist, and concluded with a vote of thanks by Dr Amit Kumar, Senior Principal Scientist, CSIR-IHBT.

CSIR-NIScPR Celebrates World Environment Day

"Only One Earth — Living Sustainably in Harmony with Nature"

The CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR), New Delhi, organised the World Environment Day celebrations on 6 June 2022 with a lecture on "Impact of Environmental Imbalance on Weather" by Dr Mrutyunjay Mohapatra,

Director General, India Meteorological Department, Government of India.

In her Welcome Address, Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, highlighted the complexities of the web of life and how over-exploitation by humans has



destroyed this unique web. Further, she said that *Homo sapiens* have a false perception that they are superior species and rulers of this planet. India has a long heritage of conserving the environment and our Vedic literature has also references to environmental conservation, ecological balance and the weather cycle, she added. Our ancestors have provided us with valuable knowledge to lead a sustainable life without harming our planet which goes well with the theme of this year's World Environment Day, "Only One Earth – Focusing on Living Sustainably in Harmony with Nature", she emphasised.

Dr Mrutyunjay Mohapatra who is also known as the 'Cyclone Man of India' was the Chief Guest of the programme. During his lecture, Dr Mohapatra highlighted various aspects of the changing weather patterns in the country and also mentioned that globally, temperatures have risen by about 1.2 degrees Celsius compared to 100 years ago. Over India,



In view of the World Environment Day 2022, CSIR-NIScPR brought out special issues of *Science Reporter* and *Vigyan Pragati* focused on challenges being faced by the environment.



the rise has been about 0.6 degrees Celsius. This temperature rise has been in northern, central, and eastern parts, and less over peninsular India, he informed. The temperature rise has an impact on extreme weather events, he added.

He further said that the change in the weather patterns will have serious repercussions and will cause a shift in the vegetation patterns leading to a change in the cultivation pattern of our significant crops like coffee, banana, etc. He mentioned that already the mangrove forest in the Sunderban region is diminishing. The changing weather patterns will also lead to the prevalence of

infectious diseases like dengue, said Dr Mohapatra.

In view of the World Environment Day 2022, CSIR-NIScPR brought out special issues of *Science Reporter* and *Vigyan Pragati* focused on challenges being faced by the environment. Both the popular science magazines were released during the programme by Dr Mrutyunjay Mohapatra.

Reiterating the need to preserve the planet, Dr Manish Mohan Gore, Scientist, CSIR-NIScPR, proposed the vote of thanks. The lecture was attended by staff members of CSIR-NIScPR, students and research scholars from different colleges and was also hosted live *via* Facebook.

CSIR-CDRI Commits to Protect the Environment

"Green Chemistry" approach for Drug Discovery & Development

Green chemistry, also called sustainable chemistry, is an area of chemistry and chemical engineering focused on the design of products and processes that

minimise or eliminate the use and generation of hazardous substances; the methodology should be efficient, cost-effective and the catalyst used be



eco-friendly, reusable, and biodegradable.

Since the Nineties, when the concept of Green Chemistry came into existence, CSIR-Central Drug Research Institute (CSIR-CDRI), Lucknow, is committed to developing new green and sustainable processes for developing not only new Active Pharmaceutical Ingredients (APIs) but new drugs as well.

On the occasion of World Environment Day, while talking about CDRI's contribution to saving the environment, Dr Atul Kumar, Chief Scientist and Head, Medicinal Process Chemistry Division, informed that CSIR-CDRI is committed to protecting the environment through its "Green Chemistry" approach for Drug Discovery & Development. We are trying to avoid excessive use of harmful chemicals as well as multistep reactions. He further mentioned some of the achievements of CSIR-CDRI in this direction in the recent past for example synthesis of β -artemether/Arteether and the "smart drug" Modafinil.

The World Health Organization (WHO) approved Artemisinin Combination Therapy (ACT) containing artemether-lumefantrine as a first-line treatment for uncomplicated *Plasmodium falciparum* malaria in

most malaria-endemic countries. The synthesis of artemether/arteether from artemisinin involves two steps. The first step involves the reduction of the carbonyl group and in the second step, etherification takes place.

Conventional approaches for the synthesis of artemether from artemisinin were capable of producing good yields but had some limitations such as carcinogenic solvents like benzene, use of highly hazardous Lewis acid and pro acid, use of column chromatography, a tedious process for the separation of the desired β -isomer and besides this two-step synthesis process.

Hence, the development of a simple, environmentally benign and sustainable resources protocol for the synthesis of artemether/arteether in high purity and yield with minimal side product formation was highly desirable. So, Team CSIR-CDRI worked on it and came up with a one-pot eco-friendly green synthesis process.

The "smart drug" Modafinil is used clinically as a wakefulness-promoting agent for the treatment of narcolepsy and other sleeping disorders. Various approaches have been proposed in the literature for the synthesis of Modafinil and its analogues. But the conventional methods require the recovery of different intermediates and the use of costly and toxic reagents. Therefore, our team focused on an eco-friendly, cost-effective and safe method for the preparation of Modafinil and came up with an Efficient Atom and Step Economic (EASE) synthesis process for Modafinil.

CSIR-CDRI is continuing its efforts for developing more and more green and sustainable chemistry approaches for developing APIs and new drugs for healthcare keeping the health of the environment in mind.



We are trying to avoid excessive use of harmful chemicals as well as multistep reactions, said Dr Atul Kumar.

Hydrogen Economy is vital for the Country

World Environment Day Celebrations at CSIR-NEERI



Dr Atul Vaidya, Director, CSIR-NEERI, addressing during the panel discussion

CSIR-National Environmental Engineering Research Institute (CSIR-NEERI), Nagpur, organised a panel discussion on 'Role of CSIR-NEERI in International Conventions and Treaties' in the NEERI Auditorium on 6 June 2022 as part of the World Environment Day celebrations. The distinguished panelists were Dr Sukumar Devotta, Former Director, NEERI; Dr Satish R. Wate, Former Director, CSIR-NEERI; Prof. Archana Negi, School of International Studies, Jawaharlal Nehru University; and Dr Atul N. Vaidya, Director, CSIR-NEERI.

Speaking on 'Multilateral Environmental Agreements and Sustainable Development, Dr Devotta

stated that there are about 346 international treaties on environment protection which could be clustered together. He expressed concern over the increasing concentration of carbon dioxide for the last few centuries, which has currently gone beyond 400 ppm. He mentioned that there is a correlation between carbon dioxide concentration and global temperature, which calls for global mitigation action. In order to achieve net-zero commitment by 2070, he said that India needs to work on the reduction of the carbon footprint of her energy technologies. Dr Devotta mentioned that owing to its decarbonising potential and non-polluting nature, hydrogen is seen as a promising alternative to replace fossil fuels. India must address key issues to transition into a hydrogen economy, he added.

Dr Devotta urged scientists to develop a Carbon Capture Utilisation and Storage (CCUS) facility to make some useful products like chemicals and biomass. He advised that CSIR-NEERI should play a major role in multilateral environmental agreements. He also informed that Govt. of India has recently setup a committee to define the indicators for sustainable development.

Dr Wate said that the outcome of the scientific project should be scalable and lead to some technological development. Defining the four pillars of sustainable development he mentioned that sustainability is not linked only with the environment, but also, with social wellbeing, economy and governance. Dr Wate stressed on the need for efficient



Research scholars receiving prizes from Dr Satish Wate, Former Director, CSIR-NEERI

environmental data management to make easy and more-informed decisions on various environmental issues.

Further, he advised the scientists to work on flue gas decarbonisation and control of carbon dioxide emissions at the source. We should also look for natural treatment systems, he added. He appealed to the citizens not to allow any natural resource to turn into waste. He said that natural resource augmentation programmes and reducing, recycling, and reusing technologies should be a priority.

Prof. Negi said that science is important for environmental diplomacy at the international level. She described various environmental conventions and treaties to which India is a Party. She urged to work more on the brown environmental agenda which focuses on the understanding of social issues which cannot be separated from the environment. Prof. Negi advised CSIR-NEERI to assess the contribution of environmental science and engineering in the last 50 years

in addressing sustainability objectives in India. CSIR-NEERI should interface with the existing Multilateral Environmental Agreements (MEAs) and work for their implementation, she added. Prof. Negi also opined that the Institute should contribute to the scientific discourse at the International level, bring together the objectives of environmental considerations and public health concerns, and link science and technology with public policy and diplomacy.

Dr Vaidya outlined the history of international conventions on the environment and human health. He emphasised on the need to realign the research activities of the Institute with the International environmental commitments.

Prakash Kumbhare, Sr Principal Scientist, CSIR-NEERI, was the moderator of the panel discussion and Dr (Mrs) Rima Biswas Mondal, Principal Scientist, CSIR-NEERI announced the winners of the poster competition.

Prof. Negi advised CSIR-NEERI to assess the contribution of environmental science and engineering in the last 50 years in addressing sustainability objectives in India.

CSIR-NIScPR Organises Yoga Day



Shri Kesarwani discussed a healthy food regimen and a regular exercise routine to improve the body's immunity and strengthen it to fight diseases.

CSIR-National Institute of Science Communication and Policy Research (NIScPR), New Delhi, in association with the SVASTIK team, started a week-long celebration as part of International Day of Yoga 2022.

As part of the celebrations, a seminar on "Scientific Understanding of Yoga" was organised on 17 June 2022 through a virtual platform. Dr Charu Lata, Senior Scientist, CSIR-NIScPR, and coordinator of the SVASTIK project, in her introductory remarks explained the history of yoga and the role played by Hon'ble Prime Minister Shri Narendra Modi in bringing it to the global platform.

In her welcome address,

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, stressed that yoga enables us in balancing body, mind and the human relationship with the world. Mindfulness, moderation, discipline, and perseverance are all values emphasised in yoga. When applied to communities and societies, yoga provides a way to long-term sustainability. She further mentioned that large-scale genomic studies had validated the positive impact of meditation on human well-being.

She said that keeping with the spirit of this year's theme, "Yoga for Humanity", CSIR-NIScPR planned a week-long celebration to sensitise the public about yoga's benefits to leading a healthy life. Prof. Ranjana later spoke about the SVASTIK initiative of CSIR-NIScPR, which aims at communicating India's traditional knowledge with a scientific basis to society through popular channels.

The lead lecture was delivered by noted yoga expert Shri Subhash Kesarwani, Director (NGS), NTIPRIT, DoT, Govt of India. In his address, Shri Kesarwani emphasised on keeping the body free of toxins and the mind free of tensions by practising yoga. He discussed a healthy food regimen and a regular exercise routine to improve the body's immunity and strengthen it to fight diseases. The lecture was followed by an interactive session, where participants clarified doubts regarding various yoga practices with the yoga expert Shri Kesarwani.

The programme concluded with a vote of thanks by Ms Charu Verma. The programme was attended by staff and students of CSIR-NIScPR and was live-streamed on Facebook and youtube.



CSIR-NCL Celebrates the International Day of Yoga



A yoga workshop conducted on the International Day of Yoga 2022



A yoga demonstration being performed

CSIR-National Chemical Laboratory (CSIR-NCL), Pune, celebrated the 8th International day of Yoga on 21 June 2022. On the occasion, a Yoga workshop was organised in coordination with the chief guest Dr D. Sathyanath, Senior Medical Officer, National Institute of Naturopathy, Pune. The celebrations included programmes spread across one month from 5 May 2022.

Preceding Yoga Day, the Institute organised Yoga practice sessions on 17 May, 23 May and 2 June. Also a series of programmes were conducted during this period including common Yoga protocol practice, Yoga break practice, lectures on Yoga by experts, Yoga workshops, etc.

Dr Sathyanath, interacted with participants on 'Yoga and its benefits to the human being.' The participants were introduced to the Cobra pose asana (Bhujangasana), Bridge pose (SetuBandhasana), Tree pose (Vrikshasana), Locust asana (Salabhasana), Wind relieving asana (Pawanmuktasana), Half tortoise asana (Ardha-Kurmasana), Side plank asana

(Vasisthasana), Corpse pose (Savasana), etc. as per the standard protocol issued by the Ministry of Ayush, Govt. of India.

He further said that in Yoga or daily routine life, we should respect our body and mind. We should do Yoga regularly to maintain balance in our everyday life, busy schedules, and studies. It brings together physical and mental disciplines to achieve a peaceful body and mind; it helps manage stress and anxiety and keeps you relaxed. It also helps increase flexibility, muscle strength, and body tone. It improves respiration, energy, and vitality.

Dr Ashish Lele, Director, CSIR-NCL, addressed the gathering about Yoga and its benefits. He shared his thoughts on Yoga and quoted, "Yoga is an invaluable gift from our ancient tradition. Yoga embodies unity of mind and body, thought and actions."

Earlier, Dr Lele felicitated the chief guest Dr Sathyanath by presenting him with a Tree Pot. Later, Mrs Pooja Raut gave away the concluding remarks.

"Yoga is an invaluable gift from our ancient tradition. Yoga embodies unity of mind and body, thought and actions," said Dr Ashish Lele, Director, CSIR-NCL.

CSIR-CECRI Celebrates International Yoga Day

The 8th International Day of Yoga was celebrated at CSIR-Central Electrochemical Research Institute (CSIR-CECRI), Karaikudi, on 21 June 2022. The event included a special lecture and a practical session on a few asanas, breathing techniques and meditation.

Dr S. Shivkumar and Smt. M. Vijhaiyalakshimi, Faculty Members of the Art of Living Foundation, Coimbatore, were the resource persons of the event. The special

lecture started with the question 'Are you Happy?' and went on to highlight the importance of good practices of having proper food, sleep, breath, and meditation to build a healthier body and mind.

Dr N. Kalaiselvi, Director, CSIR-CECRI presided over the programme. A large number of staff members and students of CSIR-CECRI enthusiastically participated in the event which included practical sessions that stretched till late evening.



Conferences/Workshops/Seminars

CSIR-NIScPR Organises Workshop on Technology Readiness Level (TRL) and its Applications for Technology Assessment

CSIR-National Institute of Science Communication and Policy Research (CSIR-NIScPR), New Delhi, in association with IIT Madras, IIT Delhi, IIT Mumbai, IIT Roorkee, IIT Dhanbad, IIT Jammu, CSIR-Indian

Institute of Petroleum (CSIR-IIP) Dehradun, UNDP Accelerator Labs and TIFAC, organised a one-day "Workshop on Technology Readiness Level (TRL) and its Applications for Technology Assessment" on 22 June 2022.



In her inaugural address, Prof. Ranjana Aggarwal stressed the need for assessing the Technology Readiness Level (TRL) of the research that is being carried out in various laboratories. Often there is a gap between technology developers and technology users. She explained the efforts made by CSIR-NIScPR in assessing the TRL of various technologies developed at various CSIR laboratories across the country. The institute has so far prepared the assessment of 467 technologies having TRL 6 and above.

Prof. Aggarwal mentioned that because of the initiatives of the Government of India, in recent times, there has been a paradigm shift in policy formation towards innovation. India has seen the emergence of the 100th unicorn, one out of every ten unicorns globally has been born in India. Since the launch of the Startup India initiative on 16 January 2016, more than 69,000 startups have been recognised in the country, out of which 100 are in the unicorn category. She remarked that science must be focused to serve society and assessing the TRL of technologies developed in our research institutions is important to achieve this.



Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, addressing the audience

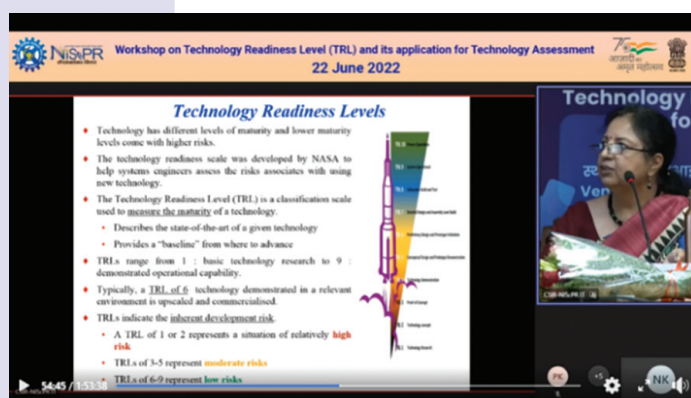
Dr Sujata Chaklanobis, Advisor/Scientist-G, Head (PACE, CRTDH & A2K+), DSIR, explained the need for assessment of the readiness level of technologies. The TRL is used to assign maturity levels of technology. She explained the importance of TRL by highlighting a case study on P&G. Studies for identifying technologies with TRL 6 and above were done by DSIR and these technologies have the potential for commercialisation.

The Chief Guest, Dr Shekhar C. Mande, Former-Secretary, DSIR and Former Director General, CSIR, stressed that whatever research our labs are doing, everything should be



Workshop of Technology Readiness Level and its applications for Technolog...

Dr Shekhar C. Mande, Former Director General, CSIR



Workshop of Technology Readiness Level and its applications for Technolog...

Dr Sujata Chaklanobis, Scientist-G, DSIR
delivering their talks



Workshop of Technology Readiness Level and its applications for Technology Asses...

Dr Pramod P. Wangikar (IIT Bombay)
delivering a keynote address

evaluated by its TRL. Even though science and scientific discoveries are universal, their implementation is mostly local. He reminded of the success of milk powder production in the country. Even though different branches of science have different ways to assess the TRL, the basics remain the same. It is often observed that there is a gap in the assessment between fundamental science and engineering. If public aspirations must be met, scientists and industrialists should work together.

Prof. Pramod P. Wangikar,
Department of Chemical Engineering,

IIT Bombay, delivered the keynote address on “Research with higher TRL levels — How universities and institutes can contribute?” wherein he explained the gap observed between government and universities and the private sectors. He explained the steps that universities and institutes can take to achieve higher TRL levels in their research. He also explained technology de-risking so that it's easier to commercialise the technologies at the university level. This will help the universities and institutes contribute to higher TRL level research.



The first technical session on “Strategies for TRL Scouting in select sectors” was chaired by Dr Sujata Chaklanobis. During the session,

Dr Anjan Ray, Director, CSIR-IIP, Dehradun, delivered the invited talk on “Adventures in Translational Research.” He insisted on the study of Industrial psychology, organisational behaviour, clinical research, market research, cash flow and other soft challenges. He further mentioned the idea of small startups which want to productise the concept, despite having a crunch of cash flow, and may not necessarily focus on the end market, rather their motivation is on brand building and networking. Dr Anjan highlighted the need for TRL self-auditing — key questions must be answered to move along the TRL lines and evidence of data for TRL self-assessment must be available.

The lecture was followed by a session on sharing of methodology and action plan by six PIs for carrying out their studies on “Techno-commercial assessment of TRL-6 and above technologies developed in India in academia, research labs and industry”. Dr V. Rajkumar, IIT Jammu; Dr BR Basak, Scientist, TIFAC; Dr Ramesh Andnarbun, IIT

Roorkee; Dr Manjusha, IIT Delhi; Mr C Sripathi, ICCW, IIT Madras; and Dr Shashank Bansal from IIT Dhanbad shared their plan of action for translational research in specific areas and challenges they faced. The session concluded with closing remarks by the chair Dr Sujata Chaklanobis.

The second technical session on “Development of CSIR-NIScPR’s TRL framework and its implementation” was chaired by Dr Pramod P. Wangikar. Dr Vipin Kumar, Senior Principal Scientist, CSIR-NIScPR and Dr Sujit Bhattacharya, Chief Scientist, CSIR-NIScPR, presented the initiatives taken by NIScPR in assessing the TRL of CSIR technologies.

The technical session was followed by an interactive session and panel discussion on approaches towards scouting and assessment of TRL-6 and above technologies. Dr Mrutunjay, Director-General-R&D, KIIT University & CEO, KIIT chaired the panel discussion.

The workshop was attended by scientists, technology developers, industry experts, scholars, and officials from various R&D institutions, Government departments, Universities, and Industries.

Dr Anjan Ray insisted on the study of Industrial psychology, organisational behaviour, clinical research, market research, cash flow and other soft challenges.

Dr Ashish K. Lele, touched upon the importance of diversity, equity, and inclusiveness as the key aspects of any organisational ethics.

ICT Accessibility Awareness Talk at CSIR-NCL

CSIR-National Chemical Laboratory (CSIR-NCL), Pune, organised an online awareness session on “ICT (Information and Communication Technology) Accessibility and Standards” in which two experts from C-DAC gave talks on data accessibility. The talks were conducted to make participants aware of the importance of accessibility of data, the significant problems faced by people with disabilities, and the steps to improve the situation.

In his welcome address, Dr Ashish K. Lele, Director, CSIR-NCL, touched upon the importance of diversity, equity, and inclusiveness as the key aspects of any organisational ethics. He said that practising inclusiveness is also essential from a business perspective since it helps to increase the customer base, the image, and the branding of the products and services. Dr Lele also highlighted the importance of data accessibility in realising the Digital India vision.

He commended C-DAC, a non-profit society under the MeitY (Ministry of Electronics & Information Technology), Govt. of India, for their role in championing data accessibility in India. C-DAC has been studying prominent international standards for data accessibility, identifying the level of prevailing harmonization between them, and assessing the suitability of the recommended international standard for Indian needs in consultation with experts and other stakeholders. He informed the audience of C-DAC's engagement in formulating an ICT Accessibility standard along with STQC (Standardisation Testing and Quality Certification (STQC) & BIS (Bureau of Indian Standards) as part of the “Knowledge

& Resource Centre for Accessibility in ICT (KAI)” initiative.

Mr Saidarshan Bhagat, Senior Technical Officer, C-DAC, Mumbai, talked about “Awareness towards digital accessibility and assistive technologies.” Mr Sai explained the concept of accessibility and its purpose to provide freedom to the user. Talking about web accessibility, he encouraged the listeners to visit the site of Knowledge and Resource Centre for Accessibility in ICT (KAI) at <https://ictaccessibility.in/>. Mr Sai talked about mobile accessibility and explained its shortcomings for a disabled community in various ways.

Mr Sai listed the disabilities mentioned under WHO (World Health Organization) and discussed how these could be overcome by using assistive technologies like screen readers, braille, braille embossers, screen magnifiers, softwares, etc. Being a vision-impaired person, Mr Saidarshan inspired the listeners by sharing his experience with various assistive technologies in his daily life. He added that even with assistive technology, if the digital platform is not properly designed, the user may find it challenging to use, e.g. lack of headings, closed captioning, pop-ups, etc. In India, the standard for ICT accessibility is the IS 17802: Part 1 and the IS 17802: Part 2.

The second speaker, Mr Shubhanshu Gupta, Principal Technical Officer, C-DAC, Pune, talked about the “Basics of Authority Accessible document.” The talk was more about the technical details of how documents can be made accessible. Mr Gupta also presented a demonstration and showed how a blind person could

be easily misled if the document is not designed with the necessary titles or text that could be read using screen reader software.

Mr Gupta emphasised the need for universal design and accessibility of products. He continued the talk by explaining the need for accessible documents. He explained in detail the best practices for digital authoring documents for accessibility, including topics like navigation, text and language, multimedia, images with embedded objects, tables and headings,

document forms, colour, shapes, contrast, etc. Mr Gupta concluded the talk with another demonstration that showed how a screen reader software can easily read out a properly-designed table.

The Associate Director of C-DAC, Ms Lenali Singh, briefed the calendar of events scheduled by C-DAC and encouraged the listeners to follow C-DAC webpages. The session was concluded with a vote of thanks by Dr Wafia Masih, Senior Principal Scientist, CSIR-NCL.



CSIR Technologies for Rural Livelihood *Technology Demonstration and Networking Meet*

CSIR-National Institute of Science Communication & Policy Research (CSIR-NIScPR), New Delhi, Unnat Bharat Abhiyan (UBA) and VijnanaBharati (VIBHA) have jointly undertaken a major initiative for the dissemination of CSIR technologies to create livelihood opportunities in rural areas. In this context, CSIR-NIScPR, CSIR-IHBT, UBA and VIBHA jointly organised a two-day 'Technology Demonstration and Networking Meet' on 29-30 June 2022 at CSIR-IHBT, Palampur.

The key objective of the Meet was to showcase and demonstrate rural technologies developed by CSIR-IHBT that can help in farmers' livelihood creation and enhance their income through the development of business opportunities. The meet brought scientists, researchers, investigators, Regional Coordinating Institutes (RCIs) and Participating Institutions (PIs) of UBA, SHGs, FPOs, and village communities together on a single platform to discuss opportunities as well as challenges in the successful translation of the identified technologies.



Prof. Ranjana Aggarwal,
Director, CSIR-NIScPR

Prof. Ranjana Aggarwal, Director, CSIR-NIScPR, set the agenda of the meet by highlighting CSIR-NIScPR's efforts in facilitating the demonstration and deployment of CSIR Technologies in association with Unnat Bharat Abhiyan and VIBHA for the overall development of the rural societies in the country. She emphasised the significance of resolving issues of technology adoption by organising such demonstration meet. She also highlighted the vast



Dr Sanjay Kumar, Director, CSIR-IHBT

Dr Sanjay Kumar, appreciated the efforts of CSIR-NIScPR, UBA and VIBHA in the dissemination of the CSIR Technologies and bridging the gaps between R&D Laboratories and society.

reach of CSIR which has 37 laboratories and is engaged in developing technologies in almost all sectors to help support society in every walk of life. She also informed that CSIR-NIScPR has established a bridge between institutes and society through its communication and policy research.

Later she said that the technologies developed by CSIR-IHBT will help to achieve the objectives of creating livelihood and income generation in rural areas and restrict further people migration.

Dr Sanjay Kumar, Director, CSIR-IHBT, appreciated the efforts of CSIR-NIScPR, UBA and VIBHA in the dissemination of the CSIR Technologies and bridging the gaps between R&D Laboratories and society. He suggested developing technologies that must be able to fulfill the needs of society and strengthen the Atmanirbhar Bharat Abhiyan.

He also hailed the researchers to solve the problems of society through science and technology intervention. He highlighted technologies developed in CSIR-IHBT like aromatic marigold

suitable for rural areas affected by wild animals. The success of the Aroma and Floriculture Mission as well as the introduction of crops like Heeng and Cinnamon was also underlined in creating livelihood opportunities and reducing imports.

Prof. Vivek Kumar, National Co-coordinator, Unnat Bharat Abhiyan, IIT Delhi, highlighted the Unnat Bharat Abhiyan efforts for transforming rural livelihood through science and technology. He emphasised the importance of deploying technologies for the development of society, amending academic curriculum and research programmes considering societal needs and problems and sustainability of regional resources. He also quoted the efforts made by UBA in formulating 15 different subject-expert groups and undertaking 292 projects to solve societal problems.

Dr Yogesh Suman, Senior Principal Scientist, CSIR-NIScPR, discussed the joint efforts of CSIR-NIScPR, UBA and VIBHA which are aimed at creating livelihood opportunities in rural areas. Dr Suman highlighted the linkages that have been established with various stakeholders like the North Eastern Center for Technology Development and Outreach (NECTAR), Foundation for Integrated Support and Solution (FISS), North Eastern Development Finance Corporation Ltd (NEDFi), Ministry of Development of North Eastern Region, and National Bank for Agriculture & Rural Development (NABARD) and other Government of India Ministries.

He gave a brief description of the events jointly organised by CSIR-NIScPR, UBA, VIBHA and NECTAR to showcase CSIR Technologies for the benefit of stakeholders and pointed out the challenges faced by farmers and entrepreneurs in

arranging resources for adopting CSIR technologies like generating finance and locating markets, etc.

Prof. A.M. Rawani, Director, NIT Raipur, presented the perspective of UBA-RCIs for fast-tracking rural livelihood through Unnat Bharat Abhiyan. He stressed upon the importance of educational institutions in identifying regional problems and finding solutions for them. He also highlighted the success of programmes such as Orientation, Sahyog Club and Rural Development to support infrastructure undertaken by NIT Raipur.

Shri Praveen Ramdas, National Secretary, VijnanaBharati, discussed peoples' migration from urban areas to rural areas, the livelihood challenges faced by them during the COVID

joint efforts of CSIR-NIScPR, UBA and VIBHA.

On this occasion, the Chief Guest Dr Shashi K. Dhiman, Vice-Chancellor,



Dr Shashi K. Dhiman, Vice-Chancellor,
Himachal Pradesh Technical University

Himachal Pradesh Technical University said that the Unnat Bharat Abhiyan was conceptualised in the 'Hind Swaraj' hundred years ago for the prosperity of the population residing in the villages. He also emphasised that technology should be society-centric and used for the welfare of society. Dr Dhiman highlighted the importance and need of organic farming as synthetic fertilizers-based farming is polluting the soil, water, air, and human health.

He further underlined the need for technological interventions for the efficient management of water and soil. He expected that all R&D institutions, academic institutions, and industries should come together to solve the problems of society. Dr Dhiman admired the CSIR-IHBT efforts for technology development and their transfer for the upliftment of society.

Dr Dhiman emphasised that technology should be society-centric and used for the welfare of society.



Shri Praveen Ramdas, National Secretary,
Vijnana Bharati

pandemic, and the need for generating livelihood for villagers and income generation, in which CSIR can play an important role through the large number of technologies developed by it. He emphasised that our country has about 6 lakh villages that need to be brought into the mainstream through scientific and technological interventions. He also highlighted the progress made so far in creating livelihood generation based on CSIR Technologies through

The stakeholders showed their keen interest in the technologies developed by CSIR-IHBT.



Dr Sanjay Kumar, Director, CSIR-IHBT, demonstrating the technologies developed by the institute

In the second session of the meet, CSIR-IHBT showcased and demonstrated about 43 Technologies like Vitamin D2 enriched shiitake mushrooms, Ready to Eat crispy fruits and vegetables, Ready to Drink Teas, Tea based Wine, Tea Catechins, Tea Vinegar, Tea mouthwash, agro and processing technologies related to aromatic, floriculture as well as industrially important crops like Heeng, Cinnamon, and Saffron.

During the third session of the Meet, scientists, technology developers and stakeholders from

different places across the country like Andaman and Nicobar Islands, Punjab, Uttar Pradesh, Tamil Nadu, Laddakh, Gujarat, Chandigarh, Assam, Jammu and Kashmir, Uttarakhand, Himachal Pradesh, Chhattisgarh, Manipur, interacted. The stakeholders showed their keen interest in the technologies developed by CSIR-IHBT like food processing and packaging technologies, aroma mission and floriculture mission technologies, Bamboo Technologies, Shiitake mushroom, Tea based wine, Heeng, etc.

Events

CSIR-NIO Celebrates World Oceans Day

The World Oceans Day is a global event and aims to celebrate the major role the oceans play in everyday life. CSIR-National Institute of Oceanography (CSIR-NIO), Dona Paula, Goa, organised the World Oceans Day celebrations on 8 June 2022. The function was presided by the Honourable Chief Minister of Goa Dr Pramod Sawant. During his presidential address, Dr Pramod Sawant

said that the oceans form a critical part of the biosphere as they are the lungs of our planet and a major source of food and medicine.

The oceans cover over 70% of the planet. It is our life source, supporting humanity's sustenance and that of every other organism on earth. The oceans produce at least 50% of the planet's oxygen, are home to most of the earth's biodiversity and are the main source of



protein for more than a billion people around the world.

Dr Sawant also mentioned that the oceans serve to generate oxygen, absorb carbon dioxide, regulate the climate, and also are a backbone for international trade. He spoke on the benefits of the oceans and also the various pressures the oceans face due to destructive fishing, marine pollution, and ocean acidification which takes a toll on the health of our oceans. He emphasised on the role played by scientists and students in sharing the knowledge and research to improve the health of our oceans.

He congratulated the local fishermen and farmers for participating in the Green Mussels Culturing programme organised by CSIR-NIO under the skill development initiative. He also distributed certificates and congratulated the winners of various national competitions held at CSIR-NIO for World Oceans Day on the theme “Revitalisation: Collective Action for the Ocean”.

Earlier during the programme Prof. Sunil Kumar Singh, Director, CSIR-NIO, expressed the World Oceans Day greetings to the gathered staff and laid stress on the need to protect our oceans. He briefed on CSIR-NIO's contribution to ocean science and society. He also mentioned that the institute is also involved in national programmes like the Swachh Bharat Abhiyan, Jigyasa which is a student-scientist connect programme as a scientific social responsibility and also contributes to flagship programmes of Aatmanirbhar Bharat and Swayampurna Goa symbolising the spirit of Cooperative Federalism.

During the programme, the Hon'ble Chief Minister released a magazine *Samudramanthan*, a compilation of phenomenal scientific works, rhythms in poetry & essay and ingenuity in photography and drawing.

Towards the end of the programme Dr V. Sanil Kumar, Head BDG proposed the Vote of Thanks, the programme was compared by Dr Judith Gonsalves, Sr Principal Scientist.

Dr Sawant mentioned that the oceans serve to generate oxygen, absorb carbon dioxide, regulate the climate, and also are a backbone for international trade.



CSIR-IIIM Organises National Conference on "Recent Trends in Plant Biology"



National Conference on "Recent Trends in Plant Biology"

5th – 7th September, 2022

CSIR – INDIAN INSTITUTE OF INTEGRATIVE MEDICINE, JAMMU
BRANCH LABORATORY, SANAT NAGAR, SRINAGAR

Thematic Areas

- Plant Secondary Metabolic Networks
- Drug Discovery from Small Molecules
- Gene Expression and Regulation
- Plant Abiotic Stress
- Plant - Microbe Interaction



Registration opens	17 May 2022
Registration without late fee (Date Extended)	30 July 2022
Abstract submission opens	20 May 2022
Abstract submission closes	30 July 2022
Notification regarding Oral/Poster Presentation	10 August 2022

For more details
<https://iiim.res.in>

Printed and Published by

Hasan Jawaid Khan on behalf of CSIR-National Institute of Science Communication and Policy Research
Dr K.S. Krishnan Marg, New Delhi -110 012 and printed at NIScPR Press

Dr K.S. Krishnan Marg, New Delhi -110 012

Editor: Hasan Jawaid Khan; Assistant Editor: Sonali Nagar

Design: Abhinav Raj; Production: Ashwani Kumar Brahmi

Phone: 25848702; Fax: 25847062; E-mail: hjk@niscpr.res.in

Website: <http://www.niscpr.res.in>

Please direct all Subscription-related queries to:

Sales & Distribution Officer, NIScPR; E-mail: sales@niscpr.res.in; Phone: 25843359

Annual Subscription: ₹500; Single Copy: ₹50.00

RN 4512/57