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REPORT

Science Communication for Transforming India

Science films and science literature play a very important role in science communication, said Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology, Earth Sciences and Environment, Forest & Climate Change. He also added that he dreamt of a day when science films would be the first choice of entertainment of the common man. Dr. Harsh Vardhan was speaking at the conclusion of the International Science Literature & Film Festival held at the Atal Bihari Vajpayee Scientific Convention Centre, Lucknow during 6-8 October 2018.

Organized by the Ministry of Science and Technology, Ministry of Earth Sciences, Department of Biotechnology, Vijnana Bharathi and National Institute of Immunology, as part of the 4th India International Science Festival, the International Science Literature & Film Festival was coordinated by CSIR-National Institute of Science Communication and Information Resources (CSIR-NISCAIR) and Vigyan Prasar.

The three-day event had a varied and interesting mix of sessions that included panel discussions on science literature and science films, workshops on filmmaking, communicating science to the public, visualizing and designing science cartoons, interactions with authors and filmmakers, screening of science films, round table discussion on issues related to scientific literature and science films and an International Science Book Fair.

Inaugural Function

The event was inaugurated on 6 October 2018 by Prof. Baldeo Bhai Sharma, Chairman, National Book Trust. In his inaugural address, Prof. Sharma said that science is an important part of human life and it is essential to connect science to the masses. He said that events such as the IISF play an important role in spreading awareness about science to the general public.

Dr. M. Rajeevan, Secretary, Ministry of Earth Sciences in his address mentioned that the country is doing very good science but the same is not being communicated effectively to

the masses. The recent initiatives of the Ministry of Earth Sciences and the Department of Science and Technology to promote science communication are expected to connect science with the masses, he added.

Speaking at the inaugural function, Kalinga Prize Winner and noted science communicator, Dr. Narender K. Sehgal said that there is an urgent need for embarking on large scale translations of Indian scientific content from one Indian language to another. He said that Indian languages should also be the language of science in the country.

Prof. Shambhu Nath Singh, Director, School of Journalism and new Media Studies, IGNOU said that simple applications of science should be imbibed in our daily lives. He added that IISF has emerged as a platform for close interaction among the many scientific community stakeholders including the general public.

Shri Jayant Sahasrabuddhe, Organizing Secretary, Vignana Bharathi and Chair of the inaugural session said that the India International Science Festival has grown from strength to strength ever since its first edition was held in Delhi. He mentioned that the current fourth edition of IISF has many new initiatives and the International Science Literature and Film Festival that is being held for the first time has evinced wide interest and has drawn a very good response.

Earlier, welcoming the invitees and delegates, Prof. Manoj Kumar Patariya, Director, CSIR-National Institute of Science Communication and Information Resources (CSIR-NISCAIR) said that the International Science Literature & Film Festival brings together not only scientists and science communicators, but also literary experts, artists, cartoonists, folklore practitioners, and others on the same platform for the cause of furthering science communication.

Two short films, *CSIR Stands with the People in Distress* and *Ganga Hritima Abhiyaan: Ek Vyakti-Ek Vriksh* were screened as part of the inaugural function. The audience also witnessed an enthralling Mohiniyattam performance on India's space odyssey.

Dr. T.V. Venkateshwaran, Director, Vigyan Prasar proposed the vote of thanks.

Panel Discussion

The panel discussion on ‘Contemporary Science Literature: An Assessment’ was chaired by Prof. K.K. Dwivedi, Vice-Chancellor, ITM University and Prof. Sun-Kyum Cho, Chungnam National University, Republic of Korea. In his opening remarks, Prof. Dwivedi said that media coverage of science is just 2%-3% and the scientific literature is not reaching the public.

Several leading experts took part in the panel discussion. Shri Rajesh Badal, Former Executive Director, RSTV said that the media institutes in the country should pay attention to science communication. Prof. Sai Baba, T.V. Raman Pai Chair Professor, NIAS, Bengaluru stated that social media is an effective tool for peer to public communication and also that science communicators need to write lot more about technologies that have impact on the society.

Mr. Sanjiv Goswami, Managing Director, Springer Nature India articulated the need for establishing a good digital fulcrum for exposing science in India. Mr. Arvind Mishra, Secretary, Indian Science Writers’ Association remarked that the science literary content has not been given importance in India. He said that science fiction writers have some kind of prophetic vision which can be interesting and as such there is a need to promote science fiction writers especially those writing in Indian languages.

Prof. Afrina Rizvi from the Department of Mass Communication, Aligarh Muslim University was of the view that there is a need celebrate Indian science and scientists through popular media like films and science fiction.

Dr. C.M. Nautiyal, Science Communication Consultant at the Indian National Science Academy (INSA) also reiterated that Indian success stories of science need to be communicated widely and science fiction in one Indian language should be translated into other languages. Dr. Anil Saumitra of Atal Bihari Vajpayee Hindi Viswavidyalaya highlighted that there is a mismatch in the quantum of scientific research literature and popular science literature.

In his closing remarks, Prof. Sung-Kyum Cho concluded that the power of the popular media needs to be exploited for science

communication. Prof. Cho also added that good science fiction is not only important for science communication but for the discipline of science at large.

Vigyan Sahitya Charcha

The session on interaction with science authors and poets was chaired by Prof. Gabriel Gomez, Professor, Chicago State University and Dr. D.C. Goswami, noted science communicator from Assam. In his opening remarks, Prof. Gabriel Gomez stated that the social media is by and large considered only as a communication tool. He was of the view that social media is an important information dissemination medium too.

Addressing challenges of science communication among children, Dr. Madhu Pant, Ex-Director, Bal Bhavan, New Delhi stated that posters and poems are effective ways of communicating science to children. She added that talking directly to children on matters of science and environment was more effective than indirect communication methods.

The emphasis on accuracy in science communication was highlighted by Dr. D.C. Goswami. He reiterated that in our focus to communicate science attractively, we should not overlook accuracy. Dr. Oum Prakash Sharma, Deputy Director, National Centre for Innovation in Distance Education, IGNOU shared his experiences of bringing out a Hindi popular science quarterly magazine called *Vigyan Aap Ke Liye*. Lack of good articles in Hindi language remained a major challenge, he said. Science poet, Shri C.P. Patsariya shared his poem on plastic and plastic pollution.

Shri Kollegala Sharma, Senior Principal Scientist, CSIR-CFTRI, Mysore said that there are many cost-effective ways and means to communicate science to targeted audiences, especially children. He added that children should be made to understand about scientific occurrences happening around them. He shared his experience of cost-effective and focussed science communication using podcasts.

Workshop on Communicating Research to the Public

Dr. Kanan Purkayastha, Environment Advisor, Climate Reality Leader, University Teacher and Science Writer from London

chaired the workshop on communicating research to the public. Dr. Purkayastha began by explaining the importance of communicating science as having utilitarian, economic, cultural, democratic and social imperatives. Sharing the situation in the UK, Dr. Purkayastha said that there are unwritten rules for science communication in the UK. Apparently, no public science communication is usually done before the publication of the work in a research journal. The younger scientists are expected to focus on their research rather than engaging with the public, he said.

However, in recent years, there has been a focus to shift from deficit model to the dialogue model to improve the public understanding of science in the UK. Upstream engagement of the scientist with the public even before setting-up R&D facilities is now being encouraged in the UK. Public benefit of scientific research now needs to be demonstrated, Dr. Purkayastha added.

Dr. Deepika Bhaskar, Centre for Science Education and Communication, University of Delhi talked about accuracy, brevity and clarity as the ABC of good science communication. Shri Sanjay Verma, noted science writer from Gorakhpur said that popular films are the best medium for creating mass appeal of science among the public. Dr. Jagdeep Saxena, Dr. Arvind Dubey and Dr. J. Nanda Kumar were the other speakers at the workshop on communicating research to the public.

Seminar on Innovative Approaches to Science Communication

The seminar on innovative approaches in science communication was chaired by Dr. Gary Kerr, Science Communicator from the Edinburgh Napier University and Dr. Finarya Legoh from Indonesia.

In his opening remarks, Dr. Kerr spoke about the importance of science festivals and informed about the first International science festival that was held in Edinburgh in 1989. He added that science festivals are unique and as important as other festivals involving arts and culture. Dr. Kerr explained the AEIOU of science festivals which includes Awareness, Entertainment, Interest in science, Opinion shaping and Understanding of science.

The papers presented in the seminar touched on topics such as social media communication, video films for agricultural information dissemination, science communication in regional languages through podcasts, etc.

Scientoon workshop and competition

Science cartoons are an entertaining way of communicating science to the masses. It is possible to convey even complex scientific concepts through imaginative and well caricatured and informative cartoons. The Scientoon Workshop was chaired by Prof. Tapas K. Kundu, Director, CSIR-CDRI, Lucknow. In his opening remarks, Prof. Kundu stated that sometime we lose the fun of doing science. And for those who do not go through the practical side of science, the scientoon can capture and show the fun side of science, he added.

The workshop was conducted by noted scientoonist, Dr. Pradeep Kumar Srivastava. Through a presentation of a series of his scientoons, Dr. Srivastava showed how environmental and scientific messages can be easily and effectively communicated through science cartoons. Shri. Amritesh Srivastava, Media Manager, NPCIL, Mumbai, shared his experiences on creating one-minute awareness films of important scientific and environmental topics. Shri Vishal Muliya of Christ College, Rajkot, also narrated his experiences of creating scientoons.

After the conclusion of the workshop, a scientoon competition was held. About 40 students, researchers, and scientists took part in the scientoon competition.

Chaupal – Science through folklore

In an auditorium packed to capacity, the session on science through folklore had Bharatanatyam, Kuchipudi and Thirayottam performances by exponents in these areas of performing arts. The session was chaired by Prof. Alok Dhawan, Director, CSIR-IITR and Dr. Denzil J. Godin, Member of Legislative Assembly, UP. Painting, puppetry, dance, music, poetry, storytelling, etc., are some of the means through which science can reach the masses, said Dr. Godin.

Dr. Padmaja Suresh, noted Bharatanatyam dancer, teacher, researcher, TV host and social worker, ahead of her performance spoke about the science-art connect and said that folk is a precursor to classic dance form. Ms Abhinaya P. Nagajothy, Delhi-based Kuchipudi exponent and researcher, performed the Shiva Tarangam in Kuchipudi. Dr. Govinda Varma Raja, Former Head, Department of Folklore, Calicut University and his team performed Thirayottam, a ritual performing ethnic art from Kerala.

Round Table Meet

A round table meet on ‘Science outreach: Looking ahead’ was held wherein various speakers including Dr. Dinesh Kumar, Ex-Director, Institute of Science & Technology, University of Lucknow, Dr. Sanat Kumar Sharma, B.P. Koirala Memorial Planetarium, Observatory and Science Museum Development Board, Nepal, Dr. V.K. Srivastava, President, Indian Science Writers’ Association and Dr. Yashwant Singh, Associate Professor, Department of Hindi, Manipur University spoke on the various aspects of science outreach.

Summing up and closing

The International Science Literature and Film festival 2018 came to a close with Dr. Harsh Vardhan, Hon’ble Minister of Science & Technology, Earth Sciences and Environment, Forest & Climate Change being the Chief Guest of the session. Expressing satisfaction over the large scale participation of students, film-makers, fiction writers, teachers, poets, and the general public in the International Science Literature & Film Festival, the Hon’ble Minister said that the participation in IISF has been steadily increasing over the years.

Dr. S.S. Bhaduria, Secretary-General, VIBHA said that unless science is communicated to the masses, science cannot belong to the masses. He stressed on the need for more and more science films in vernacular languages.

Dr. Harsh Vardhan, Minister of Science & Technology, Earth Sciences and Environment, Forest & Climate Change also gave away the awards to the winners of the science films and science cartoon competitions.



Dr. Narender Sehgal delivering his address at the inauguration of ISLFF. On the dais from right: Dr. Manoj Kumar Patariya, Director, CSIR-NISCAIR; Dr. M. Rajeevan, Secretary, Ministry of Earth Sciences; Shri Baldeo Bhai Sharma, Chairman, National Book Trust; Shri Jayanta Sahasrabudhe, Organizing Secretary, Vignana Bharathi; Dr. T.V. Venkateswaran, Director, Vigyan Prasar



Dr. Harsh Vardhan, Hon'ble Minister of Science & Technology, Earth Sciences, and Environment, Forest & Climate Change addressing the gathering during the valedictory function of ISLFF



Dr. Manoj Kumar Patariya, Director, CSIR-NISCAIR delivering his welcome address

Earlier, Mr. Hasan Jawaid Khan, Chief Scientist and Head, IPSD, CSIR-NISCAIR welcomed everyone to the concluding session and also summed-up the proceedings of the International Science Literature & Film Festival. Dr. Sundeep Sarin, Adviser, Department of Biotechnology also spoke at the concluding session. Dr. Jyoti Malik Logani, Scientist, Department of Biotechnology proposed the vote of thanks.

G. Mahesh, Senior Principal Scientist, CSIR-NISCAIR