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1. ACKNOWLEDGEMENTS

The third edition of India Science Festival, ISF 2022, would not have been possible without the unwavering support of our funders, partners, speakers, volunteers and most importantly our Festival audience.

Our heartfelt gratitude to various individuals who generously shared their time and knowledge with us to develop the roadmap for ISF 2022. Ashish Dhawan, Varun Agarwal, Dr. Karishma Kaushik, Subhra Priyadarshini, Praveen Khangta, Tarni Nath, Radhika Kalra, Bhavya Mehta, Dr Chagun Basha, Lakshmi Sampat Goyal for being a part of the ISF brainstorming session that sowed the seeds for ISF 2022. Sarah Jenkins (Evaluation specialist, Jenesys Associates) for guiding us through the process of evaluating a dynamic and multifaceted public engagement event.

A special thanks to our focus group participants - Abhigyan Ray, Anjali Tiwari, Mansi Patil, Somdatta Karak, Sonal Katyal, Promit Moitra and Parth Garg - for contributing to the process of refining the festival programme and helping us evaluate the events with great dedication and precision.





2. ISF 2022 AT A GLANCE

- Due to the COVID-19 pandemic, ISF 2022 was conducted virtually on Zoom and all its events were free to attend.
- The Festival began on 8th January 2022 (Saturday) and concluded on 23rd January 2022 (Sunday). ISF 2022 was a 15-day long virtual celebration of science. This Festival, themed around "Continuum where have we come from, where do we go?", explored the evolution of science and technology and its vital and intriguing intersections with culture, politics and society through a multitude of creative, thought-provoking and engaging programmes.
- The Festival saw a total of more than 15,000 session views in 53 events (talks, panel discussions, competitions, games, workshops and demonstrations). The Festival observed approximately 7000 unique visitors across the 15 days.
- We had 110 speakers comprising scientists, researchers, educators, historians, entrepreneurs, science communicators, public engagement professionals, journalists and writers.
- Feedback survey was sent to approximately 8000 participants after the Festival of which 300 responded.
- 57% of our survey respondents heard from a scientist/ researcher for the first time in their life
- The Festival attracted people of almost all age groups, but more than 50% of our attendees belonged to the 16 35 age group.
- Attendees were primarily motivated to attend the Festival because they wished to learn something new. The ease of access due to the online nature of the Festival enabled more attendees from all across the globe to experience our events.
- The high variety of events and diversity of topics were well appreciated by all speakers, attendees and partners.
- 80% of our respondents rated the overall Festival experience as 'Excellent' or 'very good; and 15.7 % rated the Festival 'good'.
- 100% of our speakers wanted to be a part of the Festival once again and looked forward to engaging in an offline, in-person medium.
- 75.9 % of our attendees attended a science Festival for the first time.
- 93.3% of the Festival attendees want to be a part of ISF again.





PARTNERS

Program Partners:

- National Science Centre. New Delhi
- LMSAI Lakshmi Mittal South Asia Institute Harvard University
- Social Alpha

Knowledge Partners:

- Knight Science Journalism Programme MIT
- Asian Century Foundation
- Centre for Civil Society
- IndiaBioscience
- DBT/Wellcome Trust India Alliance
- Science Gallery Bengaluru
- Cactus Communications
- SciRio: Broadcasting Knowledge
- Luma World
- Talk To A Scientist
- Nisaba Education

Digital Media Partner:

• The Indian Express

Outreach Partner:

- VelTech University
- VIT
- Chitkara University
- IES University Bhopal
- Karpagam Academy of Higher Education
- SISTec

FESTIVAL ORGANIZING TEAM

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- Shruti Sundaresan, Program Manager, FAST India
- Sarah Iqbal, Consultant, FAST India
- Rupsy Khurana (Back-end events moderator)
- Parth Garg (Back-end events moderator)
- Shubh Singh (Back-end events moderator)
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- Arnab Lahariy (Designer)
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- Ritika (PR)





3. INTRODUCTION

With rapid advances in science and technology (S&T) and its impact on societies and economies across the world, there has never been a more important time to make science more accessible and collaborative through popular science communication and public engagement. The need for the general public to understand and engage in S&T has never been felt more, particularly in developing economies such as India. Science Festivals provide a rare opportunity for the general public, particularly children and young people, to interact with scientists and learn science in an informal and vibrant setting.

In line with the Foundation for Advancing Science and Technology India (FAST India)'s mission to enhance the societal impact of Indian Science and Technology (S&T) ecosystem, its flagship event, India Science Festival or ISF, aims to promote public understanding of and engagement with science by serving as a bridge between science and society. Since its launch in 2019, ISF has served as a vibrant and stimulating platform to celebrate and explore science in every way possible by bringing together a diverse array of professionals to engage and inspire a wide-ranging audience. Thus, ISF seeks to deliver the following objectives:

- To make science accessible, fun and engaging for young people and the public at large
- To inspire and nurture the next generation of science professionals in the country
- To highlight India's strength in science, technology and innovation (STI) and its contribution in addressing local and global challenges
- To foster high quality science communication (SciComm) and public engagement practice in India
- To provide an inclusive and participatory platform to catalyse ideas for advancing scientific research and policy in India

Through a variety of thought-provoking and engaging lectures, expert panel discussions, immersive and participatory workshops, interactive displays, demonstrations, guided tours, ISF aims to ignite curiosity and interest in science by illustrating its relevance in our daily lives and illuminate its intersections with other fields and disciplines. Events at the Festival are also designed to inspire and guide young people in Science, Technology, Engineering and Mathematics (STEM) careers.

The entry to the Festival is free and open to all, in keeping with our ambition to make science accessible to all.

The purpose of this report is to provide insight into the delivery and impact of ISF 2022 and make recommendations for the future. The evaluation data provided in this report is based on feedback gathered from audiences through online questionnaires, interviews, focus groups as well as self assessment by the ISF team.





4. INDIA SCIENCE FESTIVAL 2022 (ISF 2022)

The third edition of the India Science Festival was a 15-day virtual celebration and exploration of science, held from 8th January 2022 (Saturday) to 23rd January 2022 (Sunday). ISF 2022, themed around "Continuum - where have we come from, where do we go?", explored the evolution of science and technology along with its vital and intriguing intersections with culture, politics and society through a multitude of creative, thought-provoking and engaging events for all ages.

What did we do differently this year?

- For ISF 2022, the team developed and adopted new evaluation practices to carry out our events in an evidence-informed manner.
- Consultations with diverse stakeholders were conducted to develop the Festival programme and to solicit feedback for improvements.
- Efforts were made to make Festival more community-led by inviting students, science communicators, educators, researchers to host events at ISF 2022
- To improve engagement during the online Festival, many of the events featured polls, background music and simple Zoom backgrounds.
- This year's Festival hosted an equal number of male and female speakers, a marked improvement in gender diversity over the three editions.
- The organising team carried out real time evaluation of Festival events and course-corrected as the Festival progressed.
- The organising team communicated more frequently and effectively with speakers/workshop facilitators/partners before the Festival to set the right expectations and help them develop appropriate content for the Festival audiences.
- The organising team helped moderators prepare better for their events. For e.g, for the ISF Book Talks, copies of the books were sent to interviewers in advance. An online experience sharing session was organised for all the moderators/interviewers to collectively develop standards for best practices for hosting sessions at the Festival..
- To compensate for their time and contributions, honorariums were provided to the moderators, interviewers and focus group members.





5. ISF 2022 PROGRAMME

A. PROGRAMME CURATION

The Festival programme was designed to expose young audiences to the diversity of ideas in science and its various real world applications and implications. Careful consideration was given to the selection of speakers and topics so that they aligned with the Festival's theme of "Continuum - where have we come from, where do we go?". The Festival programme was developed keeping in mind the limitations and opportunities of a virtual event. Various experts in the S&T and other sectors were consulted to draw up well-rounded and relevant Festival programme.

As for any public engagement activity, the design and evaluation of the Festival through stakeholder and audience consultations was an important consideration. With this in mind, an ISF Focus Group was formed to solicit ideas on how to make the Festival more engaging and impactful. The group primarily consisted of Festival's target audience - 14-25 yr olds, in addition to a few senior science communicators and educators (see appendix).

The focus group members provided suggestions for the Festival at an online meeting held on 27th September 2021. Subsequently, the focus group members were invited to participate in the Festival evaluation (see evaluation section). The first focus group meeting was guided by the following questions:

- a. What are your views on the current programme of ISF? Are there any aspects that are missing? Please share your inputs to design a well-rounded programme.
- b. What are your views on the overall social media marketing done for ISF? Where are we lacking, what are we doing right? How can we improve our reach?
- c. How can a science Festival contribute to celebrating and promoting science in India? How can we make science more 'popular' and 'mainstream'? How can we get non-specialist audiences to be more excited about science?

One of the focus group member had this to say "I feel that the focus group was made in a great manner, and would not change a thing about it. It contained members from different backgrounds and different walks of life. Further, there has been minimal communication (at least, that's the way it was with me) with other members. This ensures (in my view) that my opinions and thoughts are mine alone - and haven't been shaken by discussing the events with someone else."





B. FESTIVAL EVENTS

a. Pre-Festival events

The pre-Festival events, held online, were aimed at:

- creating a buzz around ISF 2022 with an aim to increase participation at the main Festival
- providing an opportunity to our audiences to explore science in innovative ways
- engaging with diverse set of S&T actors in the country, including the science communication community, to develop a well-rounded Festival programme
- promoting various formats of science communication, including science fiction writing in India
- showcase examples and best global practices in science communication to Indian audience

The following pre-fest events events were organised:

- 1. A panel discussion on science fiction writing and its portrayal on cinema
- 2. A digital walk-through of Science Gallery Bengaluru's exhibition CONTAGION
- 3. A virtual science communication conclave, The SciComm Huddle

Exploring Science Fiction and it's Portrayal in India Cinema

Since its launch two years ago, Spin Your Science (SYS), ISF's flagship science fiction writing competition has received a lot of interest. A panel discussion, held on 1st October 2021, to generate interest in science fiction and SYS, featured **Shiv Ramdas**, a Hugo and Nebula award nominated Indian science fiction writer, and **Arati Kadav**, a science fiction filmmaker; in conversation with **Sarah Iqbal**, Consultant, FAST India. The discussion touched upon the panelists' interest in science fiction (sci-fi), their motivation behind writing sci-fi stories and the challenges in pursuing a career in this field. The panellists spoke about the representation of science fiction in Hollywood and compared its portrayal in Bollywood, the blurry lines distinguishing sci-fi from fantasy, and the panellists take on - to what extent one can fictionalise science. The panel discussion ended with an engaging round of audience Q&A and was attended by around 80 people. Recording of the session can be viewed here.

"Shiv and Arati's session was super entertaining. It was good to see a topic like science fiction being talked about in such depth, we don't often hear much about scifi in India" - Session attendee

Following this event, SYS received riveting entries from young writers from across the world and the top 5 candidates received expert mentorship.





The SciComm Huddle

The SciComm Huddle took place on the 15th and 16th of December 2021 and brought together science communicators, engagement experts, educators, creatives, media professionals, researchers, and students from around the world to share skills, knowledge and experiences towards bridging the science and society gap. Through various knowledge-sharing sessions and discussions led by experts, the event explored local as well as global trends, practices and formats in science communication, and deliberated upon innovative and actionable ideas to enhance science and society engagement, which is critical for building a healthy and sustainable future for all. The SciComm Huddle featured 23 speakers from all over the globe and saw a total of 60 attendees. The recordings of the sessions can be viewed here. Read a brief report about The SciComm Huddle here.

"What I deeply appreciated about the SciComm Huddle is the diversity of speakers that it offered. Heard of some incredible SciComm projects and felt highly inspired listening to these speakers." Session attendee

A walk-through of a digital exhibition with Science Gallery Bengaluru

Science Gallery Bengaluru (SGB), not-for-profit public institution for research-based engagement, hosted an exhibition-season themed around CONTAGION from April-December 2021. The exhibition-season was designed as a public platform, especially for the young, to explore transmission of diseases, behaviours and emotions. ISF partnered with Science Gallery Bengaluru for ISF 2022 to open CONTAGION for the Festival audiences on 22nd December 2021. 6 mediators from the SGB led our Festival attendees through a digital exhibition in breakout rooms on Zoom. This session saw 30 attendees.

"When I signed up for this event, I was just curious to know what a digital exhibition would look like and had zero expectations, but was pleasantly surprised by how well thought-out the entire exhibit was. The mediator-led session recreated the feels of walking around a physical exhibition!" - Session attendee.





b. Main Festival events

The two-week long ISF 2022 saw 53 events which included talks, fireside chats, book launches, competitions, panel discussions, workshops and games. The split-up of our events is as follows:

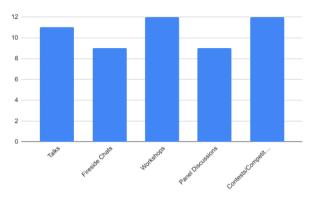


Figure 1: Events split-up

Popular science talks at the Festival covered themes like climate change, human consciousness, mental health, evolution of viruses, neuroscience behind fake news, insect-inspired robots, making of a celebrity scientist, future of automated robots (along with a live robot demonstration!), quantum computing, reporting science during a crisis, 5G and the future of communications, archaeology and more.





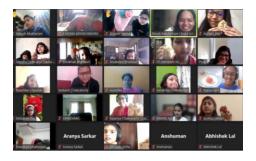
Panel discussions at ISF 2022 featured professionals from diverse backgrounds who discussed pertinent topics at the intersection of science and media, history, economics, management, ethics, literature, communication and more. Fireside chats at the Festival covered themes like science behind Indian cooking, understanding the nature and evolution of scientific research, deciphering our relationship with technology, uncovering the future of technology, breaking the psychology behind magic (with a LIVE mini-magic show!), science filmmaking and demystifying career trajectories in science.

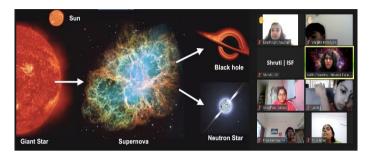
Interactive workshops on innovative topics such as science improvisation, demystifying science policy, fact-checking in science journalism, crafting careers in science, science writing, professional networking and science communication provided attendees with an opportunity to explore new themes, learn about exciting developments in the field, as well as pick up new knowledge and skills to pursue a career in science.





The **kids corner** at the Festival was bursting with energy as children engaged in conversations around supernovas, microbes, biofilms and brain! Our STEM games day provided families to come together and crack online codes and solve puzzles in order to - "Beat The Pandemic!"

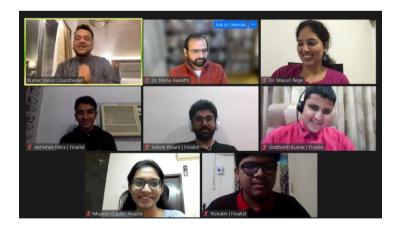








The Festival featured an interactive science quiz with comedian and quizmaster, Kumar Varun that deftly combined comedy with science. With multiple rounds that included a buzzer round, audience polls, ask-the-expert lifelines and more "InQuizitive India" had the audience engaged and entertained till the very end.



In a maiden initiative to promote books on science and related themes, ISF 2022 saw a successful series of science book talks, launches and giveaways.







The Festival hosted contests, games and competitions for children, young adults as well as professionals! **TalkYourThesis** (for MS/PhD students), **SpinYourScience** (science fiction writing) **Science in Focus**, (a photography competition and exhibition with the **National Science Centre, New Delhi)**, **Meme-Making, Just-A-Minute or JAM**, a live drawing competition and a social media contest kept the Festival buzzing through the fortnight. Our finalists from Spin Your Science were mentored by SciFi writers **Arati Kadav** and **Shiv Ramdas** in two hands-on workshops. receive mentorship from experts.

Lastly, ISF 2022 launched a new initiative, the <u>Science Word of the Year (SciWo)</u>, to inform the public about major developments in different scientific fields and to create a long term public memory and narrative of how science has evolved, a mechanism to reflect back on the journey and contribute towards the 'science of science'.

In its attempt to provide a platform where young people and the general public can engage with science and scientists, ISF 2022 offered an eclectic mix of events and opportunities for audiences to enjoy. While there were many hits and misses, the Festival went largely as planned.





6. FESTIVAL COMMUNICATIONS

The main Festival and the pre-fest events were promoted through various media channels that included the ISF website, social media channels (Facebook, Instagram, Twitter) and mailers.

Press releases circulated via the Press Trust of India (PTI) were picked up by online media outlets (see appendix). Live updates from different events at the Festival were posted on Instagram stories and Twitter.

7. ATTENDEE AND SPEAKERS' PROFILE

Attendees' profile

Based on the responses of 299 responses received through the Google Forms sent to them after the Festival, the India Science Festival saw audiences from diverse backgrounds and almost all age groups.

- Age: The majority of our Festival attendees belonged to the 16-35 category. 31.2% of the respondents belonged to the 16-20 age group, while 26.1% belonged to the 21-24 age group. 17.4% of the respondents belonged to the 35-44 age group (please refer to Figure 2 for details).
- Background: 47.5% of the attendees were undergraduate/postgraduate students studying STEM (Science, Technology, Engineering and Mathematics). The rest of our attendees had varied backgrounds (school students, non-STEM undergraduate and postgraduate students, researchers, faculty members, entrepreneurs, creative arts professionals, public engagement practitioners, education, etc) as described in Figure 3.
- **Gender:** The Festival observed a higher percentage of male attendees (60.5%) in comparison with 39.5% female attendees. The option of choosing 'non-binary' or 'prefer not to say' was not selected by any respondent (Figure 2).
- Geography: The respondents were from 5 continents (North America, Africa, Asia, Australia and Europe covering countries like Canada, USA, Botswana, South Africa, Nigeria, Singapore, South Korea, Bangladesh, Nepal, Sri Lanka, Australia, Switzerland, Netherlands, UK, Malta, France, Italy, etc). In India, the majority of respondents came from 21 states and 4 Union Territories,

Indian States and Union Territories: Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand, West Bengal, Chandigarh, New Delhi, Jammu and Kashmir, Puduchery.





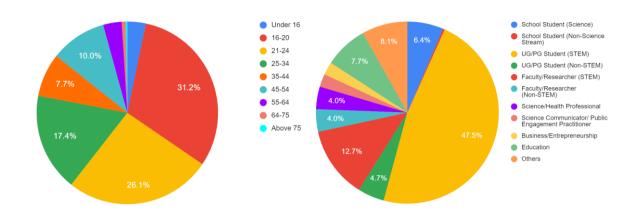


Figure 2: Age Group of attendees

Figure 3: Background of attendees

Speakers' profile

- Total number of speakers: ISF 2022 hosted 117 speakers, including speakers who
 participated in pre-Festival events.
- Gender: Equal number of male (58) and female (58) speakers; the Festival featured 1 nonbinary speaker (Figure 4).
- **Geography:** More than 50% of the speakers were from India, while 21.2% were from Europe, and 16.5% were from North America. The Festival observed 5.9% speakers from Africa (Figure 5).

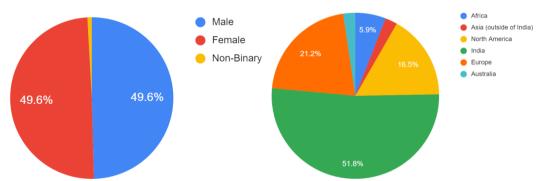


Figure 4: Gender distribution of speakers

Figure 5: Geographical distribution of genographies

Self Assessment: An equal number of male and female speakers at the Festival shows a significant improvement from the trends observed in the previous editions of the Festival. The Festival will strive to maintain gender diversity in the coming years too. We did not have any speaker from South America. While more than 50% of our speakers were Indian, they were predominantly part of panel discussions and workshops - and did not feature in talks or fireside chats.





8. FESTIVAL EVALUATION

In the absence of direct or face-to-face access to Festival participants to solicit feedback, a multipronged approach was adopted to evaluate the Festival:

- Qualitative (direct or participant observation, interviews, focus groups, and case studies and from written documents)
- Quantitative (numbers)
- Longitudinal (Observational)

The following tools and approaches were employed to evaluate the Festival:

- Focus Groups: Pre fest discussion, detailed feedback forms for any 3 events across the Festival, post fest discussion
- Feedback Forms/ Surveys: A Google Form was sent to attendees after the event/Festival
- Telephonic and Zoom Interviews
- Live Polling (during events): To gauge the background of attendees + their understanding of the session
- Social Media analytics
- Media coverage of the Festival

A. EVALUATION PARTICIPANTS

Feedback was solicited from the following groups of participants.

- Festival attendees
- Interns
- Speakers/Panellists
- Moderators/interviewers
- Focus Group participants
- Festival organising team

An online feedback form was sent to approximately 8000 evaluation participants after the Festival out of which 300 responded.





B. FEEDBACK FROM ATTENDEES

Participation at the Festival

- For majority of the respondents (75.9%), ISF 2022 was their first time at a science Festival
- 40.5% of our respondents wanted to learn something new and, hence, signed up to attend the Festival.
- 22.3% found the themes covered at the Festival very interesting and 20% enjoy attending science events, thus, decided to attend the Festival.

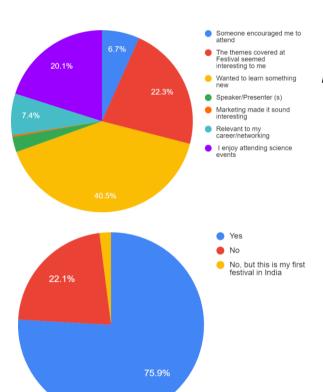


Figure 7: What made you attend the Festival?

Figure 8: Is this your first time attending a science Festival?





Festival experience

- 57.2% of our respondents had heard from a scientist/ researcher for the first time in their life at ISF 2022.
- A majority of our attendees (93.3%) wanted to be a part of the Festival again. 42.8 % of our respondents rated the overall Festival experience as 'Excellent', 38.8% rated it 'very good' and 15.7 % rated the Festival 'good'.

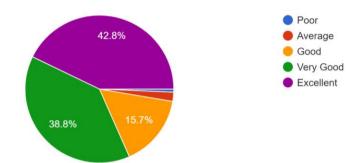


Figure 11: How would you rate your overall Festival experience?

• 65.9 % of our respondents gave the highest rating of recommending the Festival to others.

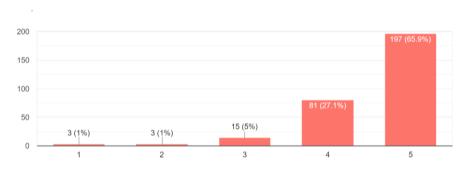


Figure 9: On a scale of 1 to 5, how likely are you to recommend the Festival to others?

• **82.6%** of our respondents would 'definitely' look out for and attend science events and activities after having attended the India Science Festival.

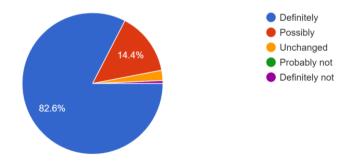


Figure 10: After attending this event are you more likely to look out for and attend science events and activities in the future?





Feedback summary

- Majority of the surveyed Festival participants attended a science Festival for the first time.
- Attendees appreciated the diversity of speakers and events at ISF 2022.
- Most attendees mentioned that that online medium of the Festival made it convenient to attend events.
- Attendees would have liked to see better social media engagement and marketing efforts.
- The website navigation and registration process was not very smooth, attendees did not receive event reminders and updates on time.
- Many attendees wanted to interact with the speakers personally, but due to lack of time/ speaker's tight schedules - interaction was primarily limited to the Q&A tab. Attendees specifically requested for more time for Q&A with the speakers.

Qualitative feedback from attendees:

"I was very thrilled to hear one of my favourite robotics speakers live at the Festival, the humanoid robot demonstration was also super cool. But I would have liked to see what my own country is doing in science and technology - is there a way ISF can bring our indegenous innovation to the limelight?"

"I was impressed by the children's workshops put together at ISF, my child first attended the Supernovas workshop and thereafter asked me to sign up for the others too. We attended the session on biofilms as well building a brain – I must appreciate how facilitators went out of their way to make sessions more accessible to children, despite the limitations of a virtual medium. Would like to see a greater variety of events for kids at the Festival." Parent of an 8 year old workshop attendee at ISF!

"A Festival like this offering so much variety deserves a wider audience and should be publicized more, especially to attract students from rural areas in India."

"The live polls conducted before each session made the talks very interacting. Really enjoyed the experience of attending the Festival and so did my son in his workshop. Would like to see more events for younger children, they're the ones that need most inspiration."

C. FEEDBACK FROM SPEAKERS AND MODERATORS

Speakers' response to the Festival was largely positive and encouraging, with the following themes emerging from their responses:

- Speakers were highly impressed by the diversity of themes and events
- Speakers were appreciative of the smooth organisation of the Festival events
- Speakers were most enthusiastic about the dynamic audience Q&A and would have liked to engage with the audiences for an increased amount of time
- Higher audience numbers would have made the experience more satisfying
- A few speakers mentioned that the marketing efforts for the Festivals could have been better.
 Some commented on the registration process not being very user-friendly.
- While most events started on time, a few were delayed by 10-15 mins and speakers were inconvenienced because of the same.
- 100% of the speakers would like to be a part of the Festival once again, and look forward to an
 offline, in-person engagement in the coming years.





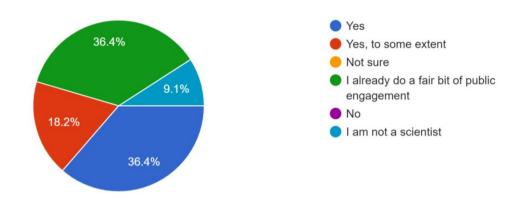


Figure 11: If you are a scientist, did the Festival encourage you to undertake/participate in more public engagement programmes?

"I really liked the variety and creative angle of the talks. I also appreciate that the talks are available online via YouTube - I'll be able to use some in future teaching." - Festival speaker

"I really enjoyed the conversation and the engagement from the audience. The audience wasn't that large, but the questions were insightful, which made me feel that I was engaging in a meaningful way with them." - Festival speaker

"The line-up of speakers and variety of topics covered was quite impressive. In spite of all of us dealing with online fatigue, I think the events at the fest were engaging." Festival moderator

D. FEEDBACK FROM FOCUS GROUP MEMBERS

Receiving critical and in-depth feedback from Festival audiences is usually challenging, particularly in an online setting. For this reason, the focus group members were requested to provide comprehensive feedback as a Festival audience. They were requested to choose any three events of their choice and critically evaluate them on the following questions:

- a. Did you learn anything new?
- b. Could a non-specialist audience have understood the session completely?
- c. What could have made the session better?
- d. What was your main takeaway from the session?

Qualitative feedback:

"Focus on two way engagement through emphasis on discussion, and Q&A.

Creative arts in science/scicomm was covered through a few events. Loved that.

Games and quiz. A lot of hard work was put in - we could seek that. It was a great fest!"

"The diversity of the events really caught my eye. I really liked the fact that the speakers came from varied backgrounds and countries. This made for interesting events and different perspectives, many of which I would not have been exposed to otherwise."





"Improve thematic classification of events, and enhance format of interviews to make them more visually engaging."

"In the future if the event happens offline, I would love to be on the ground assisting the event in any manner possible - from logistical support to being a moderator or an emcee. The event, although somewhat stilted due to the online mode, had an electric atmosphere that I would love to be a part of!"

"We might want to have more Indian scientists speaking at the event - if that fits with the mandate of ISF."

E. FESTIVAL PROMOTIONS

20.4% of the survey respondents heard about the Festival through their school/college/university, 17% through mailers sent by ISF and about 40% from different social media channels. Around 9% of our respondents heard about the Festival through friends and family (Figure 6).

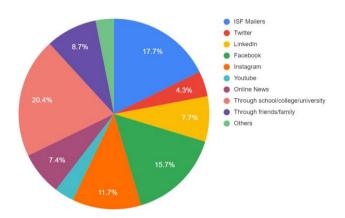


Figure 12: How did you hear about the Festival?

Media coverage

- The Festival saw online media coverage, but there was no coverage in print media.
- We advertised four different press releases through the Press Trust of India and these were picked up by multiple online news portals. However, there was no organic coverage of the Festival
- Our Festival digital media partner, the Indian Express, uploaded a detailed article about the Festival a few days before the launch of the Festival.
- Two student writers were employed to cover the events for the ISF blog.

Social media engagement

Our social media engagement for the Festival was primarily carried through LinkedIn, Instagram, Twitter and Facebook.





In the months leading up to the Festival, due to increased activity, higher engagement on our social media channels was observed. Engagement was significantly higher in December 2021 and January 2022. The increase in the number of followers on each social media platform can be seen below:

	Before ISF 2022 promotions	After Pre-fest (December 2021)	Post-fest (February 2022)
LinkedIn	950	1028	1500
Instagram	799	1032	2100
Twitter	829	932	1600
Facebook	1.9K	2.2K	2.6K

The focus group participants were also asked to share their feedback on marketing and social media efforts, as summarized below:

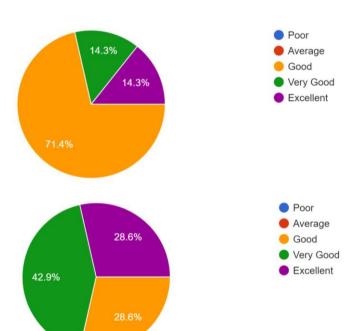


Figure 13: What did you think about the overall look of the Festival? This includes the website, Festival creatives, mailers, social media graphics, etc.

Figure 14: What did you think about the social media marketing done by ISF BEFORE the Festival?





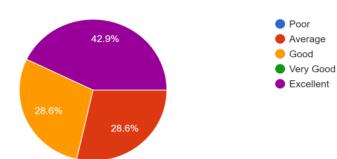


Figure 15: What did you think about the social media marketing done by ISF DURING the Festival?

9. REFLECTIONS AND CONCLUSIONS

On the whole, most partners, speakers and attendees indicated that they had an extremely positive experience at the Festival. Despite the limitations of the online format, the Festival organisers had a productive experience curating and executing the Festival. Reflections and conclusions drawn on the basis of the evaluation of the Festival as well as recommendations for the future are listed below:

Festival Experience

Festival satisfaction levels were high, and the results indicated that 93.3% of the surveyed attendees would return for the Festival and 100% speakers would like to be a part of the Festival once again. Words like "engaging", "informative", "entertaining", "interactive", "fun", "great diversity", "high quality" were repeated throughout the evaluation process. For most questions, attendees chose "Excellent", "Very good" or "good" as their responses. Majority (~40%) of the surveyed Festival attendees indicated that they attended the Festival because they wanted to learn something new. Interestingly, ~ 76% of them attended a science Festival for the first time and 57% heard from a scientist/ researcher for the first time in their life at ISF 2022. This foregrounds the need for such Festivals in India.

Festival programme

Feedback on the quality of speakers, variety of events and diversity of topics covered at the Festival was cited as one of the major strengths of this edition of the Festival. Many of the surveyed attendees also indicated that the themes covered at the Festival motivated them to attend ISF 2022. The Festival must continue to ensure that the future events deliver scientifically rigorous, educational and informative content in the most engaging, interactive and entertaining manner. To fulfil its mandate of highlighting India's S&T achievements, the Festival can feature more Indian scientists and home-grown S&T advancements. The programme must also strive to be more accessible to marginalised groups in the future.

Engagement

The overall audience engagement at the ISF 2022 was good as evidenced by the Q&A sessions at all the events. While the online medium has its limitations for engagement, the Festival must continue to strive to make its online events more engaging and interactive. This could be achieved through exploring more, participatory online platforms, working with the speakers and presenters to ensure that their presentations are engaging, creating polls, surveys and providing more opportunities for attendees to speak with scientists directly. Some respondents would have liked more information about each event, in advance.





Partnerships

ISF 2022 benefited tremendously from a wide-variety of partners. This also helped make the Festival more community-led and participatory. Establishing a strong and collaborative vision with partners right at the planning stage will be useful to maintain ties in a manner that expectations are set in the very beginning. While the Festival observed some high quality partnerships this year, it would benefit from greater focus and clarity in the future.

Website

Audience feedback highlighted that some people found it difficult to navigate the website and register for the Festival. This is of particularly high concern given the high reliance on digital platforms and communications in the current times. Better categorisation of events, more attractive creatives and a better "look" of the Festival on the website would attract more visitors.

Social Media

The majority of visitors heard about the event via word of mouth or the internet. This is a trend that is likely to continue. Therefore, establishing a strong social media strategy to provide more information and opportunity for audiences to interact with the Festival, and creating a strong social media presence throughout the year is critical. Creative campaigns and polls can be organised in the run up to the Festival to create interest and engagement.

Miscellaneous

There are many examples of good practices within the wider Festival and science communication community in India and globally. In future, it would be sensible to seek out exemplars in this area to make informed decisions about shaping the mission and programme of ISF. More stakeholder consultations, focus groups, creating an advisory committee and evaluation strategy in line with key Festival outcomes might also be helpful in improving the quality and impact of the Festival.





10. APPENDIX

Appendix 1: India Science Festival - previous editions

ISF 2020 - An overview

- The first edition of the Festival was conducted in IISER Pune and was completely free to attend.
- The Festival was a two-day event held on 11th and 12th January 2020. We had two key themes
 Artificial Intelligence and Neuroscience. Apart from this, we also had sessions on General Science and Art/History/Policy.
- The Festival saw a total of 13,000+ attendees in 50+ events (talks, panel discussions, competitions, games, roundtable conferences, workshops and demonstrations).
- We had 50+ speakers composed of scientists, researchers, educators, science communicators, journalists and writers.
- 43% of our attendees had met a scientist for the first time
- 74% of the attendees rated ISF 8 and above out of 10
- 95% of our speakers rated audience interaction 4 and above out of 5
- 82% of our speakers rated ISF's impact on society 4 and above out of 5

ISF 2021 - An overview

- Due to the COVID-19 pandemic, ISF 2021 was conducted virtually on Zoom and was completely free to attend.
- The fest began on 3rd January 2021 (Sunday) and concluded on 31st January 2021 (Sunday).
 We had three key themes Space, Health and Robotics. Apart from this, we also had sessions on General Science and Science Communication/Art/Policy.
- The Festival saw a total of 20,000+ session views in 65+ events (talks, panel discussions, competitions, games, roundtable conferences, workshops and demonstrations).
- We had 120+ speakers composed of scientists, researchers, educators, science communicators, journalists and writers.
- 9/10 attendees would recommend the Festival to a friend
- 9.2/10 attendees were satisfied with their experience at ISF
- ISF 2021 was rated an average of 9.6/10 by our speakers and panellists
- 62.2% of our attendees had heard from a scientist/ researcher for the first time in their life





Pre-Festival: The SciComm Huddle

List of speakers

Abraham Mamela, CEO & Founder Infers Group & Wellcome Engagement Fellow

Anastasia Koch, Co-founder and co-director, Eh!woza

Argha Manna, Comics artist, Visual and Graphics Art consultant

Banya Kar, Science Communication and Public Engagement Practitioner/ Consultant

Brian Lin, Editorial Content Strategy, EurekAlert! at AAAS

Edward Duca, Senior Lecturer, Science & Innovation Communication, University of Malta

lain Stewart, Co-Director, Centre for Climate Change and Sustainability (3CS), Ashoka University, India

Jenni Metcalfe, Consultant and Director, EConnect Communications

Lewis Hou, Founder and Director, Science Ceilidh

Madhushree Kamak, Programme Manager, Science Gallery, Bengaluru

Marina Joubert, Science Communication Strategist and Senior Researcher at Stellenbosch University

Mary Chambers, Head of Public and Community Engagement (PCE) at OUCRU

Mohamed Soliman Daoud, Science Communication Officer at The American University, Cairo

Namrata Sengupta, Program Manager for Scientific Public Engagement at Broad Institute of MIT and Harvard

Priyanka Dasgupta, Communication and Marketing Fellow at CERN

Rajesh Gopakumar, Senior Professor and Director, International Centre for Theoretical Sciences-TIFR **Sarah Jenkins**, Director & Principal Consultant, Jenesys Associates Ltd

Sean Ellis, Post Doctoral Scientist & Public Engagement with Research Leader Jenner Institute

Siddharth Kankaria, Communications & Program Coordinator for the Simons Centre for the Study of Living Machines, National Centre for Biological Sciences

Siuli Mitra, Communications Associate to the Principal Scientific Adviser of Government of India

Subhra Priyadarshini, Chief Editor, Nature India, Nature Research

Suchitha Champak, Founder, SciRio

T.V Venkateswaran, Scientist (F), Vigyan Prasar, Department of Science and Technology, Government of India

Yukti Arora, Senior Manager, Academic Communications at Ashoka University

Main Festival:

Abhishek Goel, Co-founder and CEO, Cactus Communications

Abhigyan Ray, Undergraduate student, Chemical Engineering, ICT Mumbai

Aditi Chandra, Executive Director at Kay Bouvet Engineering, Founder of Nisaba Education

Andrew Maynard, Associate Dean of Curricula and Student Success, Arizona State University College of Global Futures, Director of the ASU Risk Innovation Lab

Angela Saini, Science Journalist and Author

Anumita Raj, Associate Director, Knowledge & Policy at Asian Century Foundation

Anil Seth, Professor of Cognitive and Computational Neuroscience at the University of Sussex

Aiswarya Viswamitra, Science Communicator

Arati Kadav, SciFi Writer and Film Director

Arjun Kamdar, Science Communicator

Ayesha Chaudhary, Officer on Special Duty (OSD), Office of the Principal Scientific Adviser to the Government of India





B Chagun Basha, Senior Technical Specialist at Office of the Principal Scientific Adviser to the Government of India

Bambang Brodionegoro. Indonesian economist, former Minister of Finance

Banya Kar, Science Communication and Public Engagement Practitioner/ Consultant

Barbara Webb, Professor of Biorobotics, Institute for Perception, Action and Behaviour, School of Informatics University of Edinburgh

Bhramar Mukherjee, Chair of Biostatistics Professor of Epidemiology Professor of Global Public HealthSchool of Public Health, University of Michigan

Bruce Pon, Founder at Ocean Protocol; Global Innovator at World Economic Forum

Brooke Borel, Articles Editor at Undark

Chandra Shekhar Sharma, Associate Professor, Department of Chemical Engineering, IIT Hyderabad **Dashun Wang**, Founding Director, Centre for Science of Science and Innovation (CSSI) at Kellogg School of Management, Professor at Kellogg School of Management & McCormick School of Engineering at Northwestern University

Deborah Blum, Science Journalist, Director, Knight Science Journalism Program, Massachusetts Institute of Technology

Dhruv Raina, Professor, History and Philosophy of Science, Jawaharlal Nehru University, New Delhi **Gagandeep Kang**, Professor, Department of Gastrointestinal Sciences at the Christian Medical College (CMC)

Geetha Vani Rayasam, Scientist H and Head, CSIR-HRDG

Hari Pulakkat, Journalist

Harini Calamur, Head, Impact Science

lain Stewart, Co-Director, Centre for Climate Change and Sustainability (3CS), Ashoka University, India

Ilyas Khan, Founder and CEO at Cambridge Quantum Computing

Ipsa Jain, Science Illustrator

Janhavi Phalkey, Founding Director, Science Gallery Bengaluru

Jayant Krishna, Chief Executive Officer, Foundation for Advancing Science and Technology

Jenice Jean Goveas, STI Policy Postdoctoral Fellow · Office of the Principal Scientific Adviser to the Government of India

Jyotsna Dhawan, Interim CEO, DBT/Wellcome Trust India Alliance (India Alliance)

K. Vijay Raghavan, Principal Scientific Adviser, Government of India

Karishma Kaushik, Physician-Scientist/Assistant Professor Department of Biotechnology Savitribai Phule Pune University, Co-Founder - Talk To A Scientist

Kris Gopalakrishnan, Chairman of Axilor Ventures

Krish Ashok, Techie, Musician and Writer

Krithi Karanth, Chief Conservation Scientist and Director at the Centre for Wildlife Studies

Kumar Varun, Quizmaster and Comedian

L.S Shashidhara, Professor of Genetics, Molecular Biology and Evolutionary biology at Ashoka University and IISER Pune

Manu Awasthi, Associate Professor of Computer Science at Ashoka University

Manish Gupta, Investment Professional at GrowX Venture Management Pvt Ltd.

Marina Joubert, Senior science communication researcher at The Centre for Research on Evaluation, Science and Technology at Stellenbosch University

Masahito Ambashi, Associate Professor, Institute of Economic Research Research Center for Advanced Policy Studies, Kyoto University

Mayuri Rege, DST-INSPIRE Faculty at Ramnarain Ruia Autonomous College

Minhaj Sirajuddin, Associate Investigator at Institute for Stem Cell Science and Regenerative Medicine (DBT-inStem)





Mohit Kumar Jolly, Assistant Professor, Centre for BioSystems Science and Engineering (BSSE), IISc Bangalore

Muhammad Ali Imran. Professor of Communication Systems Dean University of Glasgow UESTC

Munmun Dhalaria, Independent filmmaker and National Geographic Storytelling Explorer

Nirupama Vishwanath, Illustrator and Designer

Nistha Tripathi, Founder and Director, Scholar Strategy

Parth Garg, Science Communicator

Piyali Mukherjee, Assistant Professor and Coordinator, School of Biotechnology, Presidency University; Founder - Brain Matters

Promit Moitra, Postdoctoral Research Associate, Institute For Plasma Research

Rajendra Kondapalli, Director, Pulse Media Pvt. Ltd

Rakesh Kumar, Professor, Electrical and Computer Engineering Department at the University of Illinois at Urbana Champaign

Renu Swarup, Senior Adviser for Department of Biotechnology (DBT), Ministry of Science & Technology

Richard Wiseman, Professor of the Public Understanding of Psychology at the University of Hertfordshire

Sajid Chougle, Co Founder and Creative Head, Luma World

Sayantan Datta, Science Journalist

Sarah Iqbal, Science Engagement Consultant, FAST-India

Savita Ayyar, Founder of Jaquaranda Tree

Sethu Vijayakumar, Professor of Robotics at Edinburgh University, Programme Director at The Alan Turing Institute, London, UK

Shahid Jameel, Principal Investigator, Public Health, Science and Technology in Muslim societies, Oxford University

Shantala Hari Dass, Associate Director - IndiaBioscience

Shane Ridquist, Head Of Content and Operations, Impact Science, Research Communication Services at Cactus Communications

Sharada Shrinivasan, Professor at National Institute of Advanced Studies

Shriya Naidu, Junior Project Fellow at IIT Gandhinagar

Shruti Sundaresan, Program Coordinator, India Science Fest, FAST-India

Shiv Ramdas, SciFi Writer and Author

Shivani Shah, Senior Managing Editor at Impact Science, Cactus Communications- Medical Communications

Snehal Kadam, Co-Founder, Talk To A Scientist; PHD Student at Hull York Medical School (HYMS)

Sonal Katyal, Science Communicator

Sonya Dutta Choudhury, Writer and Journalist

Spoorthy Raman, Science Journalist and Writer

Sri Sailaja Nori, Co-founder & Chief Scientific Officer at Sea6 Energy Pvt Ltd

Suchitha Champak, Founder, SciRio

Sumaiya Shaikh, Neuroscientist, Editor of Science - AltNews.in

Sunaina Singh, Freelance Editor & Consultant Academic Trainer

Tarun Khanna, Jorge Paulo Lemann Professor, Harvard Business School Director, Lakshmi Mittal and Family South Asia Institute, Harvard

Uma Ramakrishnan, Professor, National Centre for Biological Sciences-TIFR

Varun Aggarwal, Founder, FAST-India/ India Science Festival

Varun Bhalerao, Associate Professor at Indian Institute of Technology, Bombay

Venkatesh Narayanamurti, Benjamin Peirce Professor of Technology and Public Policy, Engineering and Applied Sciences, and Physics, Emeritus at Harvard University





Vikram Patel, Pershing Square Professor of Global Health, Harvard Medical School **Zille Anam,** Program Coordinator; Outreach, Community Building & International Grants Awareness Program at IndiaBioscience

Focus Group Participants at ISF 2022

Abhigyan Ray, Undergraduate student, Chemical Engineering, ICT Mumbai
Anjali Tiwari, About to begin undergraduate course in Applied Psychology, Delhi University
Manasi Patil, Student, St. Paul's Convent High School
Parth Garg, Postgraduate student, Chemical Engineering, IIT Roorkee
Promit Moitra, Postdoctoral Research Associate, Institute For Plasma Research, Gandhinagar
Somdatta Karak, Science Communication and Public Outreach Officer at Centre for Cellular and Molecular Biology, Hyderabad
Sonal Katyal, Science Communicator

Appendix 3: List of events at ISF 2022

Panel Discussion	FAST-India Inaugural panel discussion: Inspiring the next generation of scientists
Panel Discussion	The Role of Science and Technology Innovation in Revolutionizing Economies: An Asian Perspective





Panel Discussion	The history of science and its coming of age	
Panel Discussion	Grant Management in Higher Education Institutions	
Panel Discussion	How can Indian S&T contribute to the world?	
Panel Discussion	Science and Cinema: Documenting science on the silver screen	
Panel Discussion	Unravelling India's Space Adventures	
Panel Discussion	Importance of Research Communications	
Panel Discussion	Science Fiction Writing and its depiction in cinema	
Panel Discussion	Futurepreneurs - Book Launch	
Talk	Being 'You' – A New Science of Consciousness	
Talk	Tracing the evolution of climate change	
Talk	Mental Health - For All, By All	
Talk	Evolution of Viruses and What it means for Future Outbreaks	
Talk	What makes us believe in fake news?	
Talk	What can insects teach us about robots?	
Talk	Tracing the journey: From top scientists to science media stars	
Talk	The future of communications : Is 5G a game changer?	
Talk	Future of automated robots: How far have we come?	
Talk	Reporting Science During Times of Crisis	
Talk	Breaking Barriers - Bringing Science, Dance and Archaeology together	
Fireside Chat	Race, Caste, Gender and Science: Exploring inclusivity with Angela Saini	
Fireside Chat	Rethinking the Nature and Nurturing of Research	





Fireside Chat	Mind Games: Exploring the Psychology behind Magic with Richard Wiseman		
Fireside Chat	Computation in Nanoseconds : The emerging paths of quantum computing		
Fireside Chat	Utopia or Dystopia? The future of technology in our hands with Andrew Maynard		
Fireside Chat	Deciphering India's Complicated Relationship with Technology with Rakesh Kumar		
Fireside Chat	Masala Lab:The Science of Indian Cooking with Krish Ashok		
Fireside Chat	Decoding the Science of Science with Dashung Wang		
Workshop	Whose policy is it anyway		
Workshop	Brain Matters		
Workshop	Creating a picture book - Actually, Colours Speak		
Workshop	Talk To A Scientist (Microbes)		
Workshop	Science and Comedy - Science Improv		
Workshop	Fact Checking Workshop - Tackling misinformation		
Workshop	Navigating Careers in Science		
Workshop	Cactus Communications - Science Writing		
Workshop	Cactus Communications - Social media		
Workshop	Cactus Communications - Networking		
Workshop	Talk To A Scientist (Biofilm)		
Competition	Talk Your Thesis		
Competition	Luma World Online Game		
Competition	InQuizitive India - Finale with Quizmaster Kumar Varun		
Competition	Drawing Contest		
Competition	JAM		
Competition	Spin your Science Narration		

List of events at The SciComm Huddle





Science and Society: Global Trends and Perspectives

Show and Tell: Art and Science Collabs

- From droplets to cloud: Paradigm shift in infectious disease research through comics
- Science engagement through creative art projects a case of genome adventures and arting health for impact
- Exploring equitable community science engagement through traditional arts across Scotland

Increasing Impact through a Community of Practice for Science Communication

The Engaged Campus: Public Communication by Research Institutions

Science communication in 21st century: The Indian challenge

Show and Tell: Engaging Communities

- Youth Against Antimicrobial Resistance
- The Funlab Reaching the unreachable
- Moving a science and arts Festival online

Evaluation – your best friend in science engagement!

Lessons From a Crisis: Future of Science Communication

Leveraging research communication to improve visibility and impact





Appendix 4: Media Releases

https://www.theweek.in/wire-updates/business/2021/12/14/pwr25-fast-india.html

https://indiabioscience.org/news/2022/the-scicomm-huddle-exploring-pathways-to-connect-science-and-society

https://timesofindia.indiatimes.com/fast-indias-the-scicomm-huddle-spotlights-pathways-to-science-and-society-engagement/articleshow/88279246.cms

https://firstlook.co.in/the-scicomm-huddle

http://www.ptinews.com/pressrelease/51749 press-subFAST-India-s--The-SciComm-Huddle-Spotlights-Pathways-to-Science-and-Society-Engagement

https://www.tribuneindia.com/news/schools/india-science-Festival-announces-the-science-word-of-the-year-

373882#:~:text=India%20Science%20Festival%20celebrates%20India's,Science%20Word%20of %20the%20year!

https://www.tribuneindia.com/news/schools/india-science-Festival-launches-a-hunt-for-the-science-word-of-the-year-338389

https://www.telegraphindia.com/edugraph/news/india-science-Festival-announces-sciwo-or-science-word-of-the-year/cid/1854004

https://timesofindia.indiatimes.com/india-science-Festival-announces-the-science-word-of-the-year-on-national-science-day/articleshow/89898428.cms

https://www.theweek.in/wire-updates/business/2022/02/28/pwr38-india-science-Festival.html

https://www.rna-seqblog.com/india-science-Festival-names-rna-sequencing-the-science-word-of-the-year/

https://asiannews.in/india-science-Festival-launches-a-hunt-for-the-science-word-of-the-year/

https://tradebrains.in/features/india-science-Festival-2/

https://www.devdiscourse.com/article/entertainment/1871915-celebrate-the-wonders-of-science-and-technology-at-the-third-edition-of-india-science-Festival

https://timesofindia.indiatimes.com/celebrate-the-wonders-of-science-and-technology-at-the-third-edition-of-india-science-Festival/articleshow/88713136.cms





https://www.reportwire.in/celebrate-the-wonders-of-science-and-technology-at-the-third-edition-of-india-science-Festival/

https://biharengineering.in/celebrate-the-wonders-of-science-and-technology-at-the-third-edition-of-india-science-Festival/

https://www.theweek.in/wire-updates/business/2022/01/05/pwr18-india-science-Festival.html https://www.telegraphindia.com/edugraph/news/fast-india-hosts-third-edition-of-the-india-science-Festival-isf-from-january-8-to-

 $\underline{23/\text{cid}/1846721\#:} \sim : text = The \%20 Foundation \%20 for \%20 Advancing \%20 Science, and \%20 is \%20 open \%20 to \%20 all.$