

Following is the full text of the speech –

“Dear sisters and brothers,

I am very glad to be present with you virtually at the concluding session of the India International Science Festival. With a noble intent to further scientific spirit among common people and to showcase India’s scientific achievements, many events were meticulously organized over the past few days. It is heartening to note that this unique annual celebration of science avoided a break this year by utilizing the virtual format.

I congratulate CSIR, various ministries and Vijnana Bharathi for this outstanding success. I wish this event continued success in the future too.

Friends,

There is a two-fold purpose for organizing events like these, and both are equally important.

The first is to appreciate and make people aware of what science and scientists are doing for us. Science is the lifeline of human progress. Hardworking scientists gave us many things-- from a light bulb to an aeroplane, to vaccines that can fight deadly diseases.

In fact, we are on the verge of releasing our own indigenous COVID vaccine. It is science and hard-working scientists that have made this possible. Beginning with very few testing kits at the beginning of the pandemic, in a span of a few months, we have developed cheaper and rapid diagnostics, ventilators, and PPEs. Today, we are even able to export PPEs. It is in this context that people have to be made aware of scientific developments of the day and the work of the dedicated scientists.

In my opinion, there is a second and a more important purpose for this event. Science is not just about natural laws and state of the art technology. Science is also about the spirit of rational inquiry that can guide us in our lives. This is even recognized by our Constitution, which identifies the development of scientific temper as one of our Fundamental Duties.

If we imbibe this temper, we can apply scientific methodology to every endeavour of life and make informed decisions. The methodology is simple: enquire, investigate, reason, and when satisfied, accept.

The pandemic has also reinforced the importance of scientific temper in our lives. One of the major challenges in this pandemic has been the prevalence of the ‘infodemic’. False information on the nature of the virus, medication and the vaccine caused panic and anxiety among the people.

It is not vaccines or drugs that can defeat the infodemic, but a rational outlook among people. A citizenry that can think critically will be immune to such misinformation or fake news. This spirit of inquiry must be taken to the people and I commend India International Science Festival for its efforts in this regard.

Friends,

India has a very ancient background in science. We had stalwarts in every field of science. Their discoveries were truly amazing and much ahead of their time. But even long before these pioneers, our Indus Valley civilization had such expertise in city planning and construction that was unheard of at that time and still puzzles the modern mind.

Even in the field of science, India’s core philosophy has always been ‘share and care’. Our decimal system was borrowed by Arab traders, which later spread to medieval Europe. It is in the same spirit that we have not only become the pharmaceutical hub of the world, but we have been extensively sharing these life-saving drugs with the rest of the developing world. We believe in the concept of ‘VasudaivaKutumbakam’-- the world is one big family. That is perhaps why the great botanist, physicist, and the ‘Father of Radio Science’ JC Bose never filed a single patent despite the many inventions and discoveries he made.

It is an understatement to say that India has had a long and glorious history of science and scientists, but it is appalling that we don't know our own rich history. This should change. We must celebrate our scientific achievements, recognise our people excelling in STEM (Science, Technology, Engineering, Mathematics) - be it in India or abroad and encourage our children to take up careers in science. India must be a world leader in scientific research once again.

Brothers and Sisters,

There is a need to inculcate scientific temper at a young age. Children have an inherent curiosity. How we channelize that curiosity is very important. If we encourage them to ask questions and think critically, they will become confident, self-assured, and fearless for the rest of their lives. A confident generation means a confident nation! On the other hand, if we discourage them from asking questions and curtail their imagination, they will forever be dependent on others' solutions and remain and unsure of themselves.

That is why I suggest this to parents and educators:

Don't push children to give answers.

Instead nudge them to ask questions!

Children should be encouraged to 'do' experiments and not merely read about them in a textbook. Students should be encouraged to 'discover' rather than be 'told'. Rote memorization should be discouraged.

An important component to nurture inquisitiveness and kindle creativity in children is the innovative use of games and puzzles. Much more research should be done by designers and child psychologists in this area. I am happy to notice an exclusive event on toys and games in this event.

Dear sisters and brothers,

Science lays the path to progress and create material wealth for the country.

If there is one thing that the pandemic has taught us, it is that we need to invest and sustain R&D and to strive to become self-reliant. Our space programme is a sterling example of how self-reliance can be achieved.

I am happy that IISF 2020 has taken forward the Prime Minister, Shri Narendra Modi's exhortation for AtmaNirbhar Bharat through its theme – "Science for Self-Reliant India and Global Welfare".

To this extent, I also call upon the private sector to partner with various institutes to promote innovation in the country. We should also aim to first achieve self-reliance in critical sectors like electronics and defence. With the third-largest startup ecosystem in the world and nearly 10,000 technology-led startups, India has great potential to become AtmaNirbhar in many sectors.

We must also recognise that the fourth industrial revolution is underway and we cannot afford to miss the opportunity this time. We must quickly capitalize on our demographic dividend, skill our youth, and ride this revolution to make our unique mark in the world of science.

Brothers and sisters,

Before concluding, I would like to give three advises on how science and scientific thinking should progress in the coming years:

Firstly, we must increase the focus on science education, as I mentioned earlier. I am referring to both-- education in science (STEM) and in scientific thinking. We must encourage our children to pursue a career in STEM, improve the quality of research in our institutes, increase R&D investments, and encourage diversity in the field.

As regards scientific-thinking, there is no quick fix but to nurture critical thinking from a young age through a revamped pedagogy.

Secondly, sustainability should be an intrinsic part of scientific research. We cannot afford to look at sustainability and technology in silos. We need to go for a holistic and inter-disciplinary approach in science education that addresses ecological concerns. In this regard, I am pleased to see that many topics such as Bio-Diversity, Clean air, Energy, Waste & Sanitation, and Water have been highlighted in IISF.

Thirdly, science and technology should address the pressing needs of the common man. Cutting edge advancements like nanotechnology are strategically important, but what is critical is recognizing micro-innovations in agriculture, handicrafts, education, and health. For instance, a reliable low-cost water-purifier could potentially save millions of lives. A resilient seed variety can benefit an entire farming community.

In the end, science has to make common man's life comfortable.

Once again, I am very happy to be here with you all today. The India International Science Festival is gradually developing into a mammoth exercise of public engagement in science.

I compliment the organizers for the success in the virtual format. They must utilize the learning from this format to host future events in a mixed format. I wish IISF many more years of success in furthering the cause of science and scientific thought.

My dear friends,

In our eternal search for truth, let us imbibe the rigour of a scientist, the wisdom of our ancestors, and the inquisitiveness of a child. This is all the more relevant in the current times of the infodemic.

I would like to conclude with a very popular Telugu poem from Sumatisatakam that espouses a timely message on the spirit of rational thinking:

“వినదగునెవ్వరుచెప్పిన

విప్పినంతనెవేగపడకవివరింపదగున్

Which translates like this:

“Listen to anyone and everyone,

But don't rush to conclusions right away...

Analyze it and reason it out!"

Thank you.

Jai Hind!"

MS/RK/DP