



Report of Webinar On Nataraja: A Confluence of Arts and Science

Held on June 18, 2020, 7:00 PM

Chairpersons



Prof. Ranjana Aggarwal
Director,
CSIR-NISTADS, New Delhi



Shri Jayant Sahasrabudhe
National Organising Secretary,
Vijnana Bharti, New Delhi

Keynote Speakers



Dr. Anil Kakodkar
Former Director, BARC,
Former Chairman of Atomic
Energy Commission of India
and Secretary to the
Government of India



Prof. Sharada Srinivasan
Professor, National Institute of
Advanced Studies, Bengaluru

Coordinators



Dr. Mohammad Rais
Chief Scientist,
CSIR-NISTADS, New Delhi



Dr. Suman Ray
Senior Scientist,
CSIR-NISTADS, New Delhi



Dr. Shiv Narayan Nishad
Scientist,
CSIR-NISTADS, New Delhi

**CSIR-National Institute of Science, Technology
and Development Studies and
Vijnana Bharti, New Delhi**

Nataraja: A Confluence of Arts and Science’

Report of Webinar held on June 18, 2020 Organized by CSIR-NISTADS and VIBHA

CSIR-National Institute of Science, Technology and Development Studies, New Delhi and Vijnana Bharati organised Webinar on June 18, 2020 on ‘Nataraja - A Confluence of Arts and Science’. On June 18, 2004 a statue of ‘Nataraja’ was unveiled in the precincts of CERN – European Organisation of Nuclear Research – at Geneva, Most sublime symbol of Indian culture was presented by the Government of India to CERN as a gift to celebrate the long association of India, starting from 1960, with the world’s largest particle physics laboratory.

To celebrate the anniversary of this event, a dialogue exchange programme on “Nataraja: A confluence of Arts and Science” was successfully organized on June, 18 from 7:00 pm to 8:00 pm by CSIR-NISTADS in collaboration with Vijnana Bharati (VIBHA). Prof Ranjana Aggarwal, Director, CSIR-NISTADS & Shri Jayant Sahasrabudhe, National Organising Secretary Vijnana Bharati (VIBHA) were the Chairpersons for this event. The webinar was coordinated by Dr. Mohammad Rais, Chief Scientist, CSIR-NISTADS, Dr Suman Ray, Senior Scientist, CSIR-NISTADS & Dr. Shiv Narayan Nishad, Scientist, CSIR-NISTADS.

Program details	
Introduction & Welcome Address 7:00 PM -7:10 PM	Prof. Ranjana Aggarwal Director, CSIR-NISTADS
Keynote Speakers	
7:10 PM -7:30 PM	Dr. Anil Kakodkar Former Director, BARC, Former Chairman of Atomic Energy Commission of India and Secretary to the Government of India
7:30 PM-7:50 PM	Prof. Sharada Srinivasan Professor, National Institute of Advanced Studies, Bangalore
Question and Answer Session 7:50 PM-8:00 PM	Coordinator Shri Vivekananda Pai Secretary, Vijnana Bharti
Vote of Thanks	Dr. Suman Ray Senior Scientist, CSIR-NISTADS



Prof. Ranjana Aggarwal, Director NISTADS welcomed the distinguished speakers Dr. Anil Kakodkar, former Director BARC; Former Chairperson of Atomic Energy Commission of India and Secretary to the Government of India, and Prof. Sharada Srinivasan, Professor, National Institute of Advanced Studies, Bengaluru and gave brief introduction of the distinguished speakers. Prof Ranjana Aggarwal also explained how a Hindu God statue is taken place in the research institution CERN and how the dancing Nataraja is related to physics with several examples. Dancing Nataraja Statue is the classical example of integration of science and arts. Nataraja statue, a merge of religion, Arts and Science was further strengthened by carrying forward the dialogue exchange by Prof. Ranjana Aggarwal with series of conversation with the distinguished speakers of the event.



The dialogue exchange program was followed by **Shri Vivekananda Pai, Secretary, Vijnana Bharti** with Dr. Anil Kakodkar & Prof. Sharada Srinivasan. He has asked several questions to Dr. Anil Kakodkar and Prof. Sharada Srinivasan like what was the thinking process and what were the expectations and the reasons to choose 'Nataraja' Statue to present at CERN.



Dr. Anil Kakodkar, Former Director, BARC, Former Chairman of Atomic Energy Commission of India and Secretary to the Government of India, beautifully explained the story behind thinking process, importance and expectations of the decision of gifting Nataraja statue to CERN, Geneva. He highlighted the collaboration of Indian scientists' right from 1960's, exploring research on subatomic particle at CERN located in Geneva. India's contribution to CERN and benefit in return was well mentioned. Dr. Kakodkar elaborated how the relationship strengthened between India and CERN. Nataraja statue was chosen to gift due to its very strong metaphoric connections.



Prof. Sharada Srinivasan, Professor, NIAS Bengaluru began her conversation from her journey to research incorporating various aspects of Nataraja. She talked about her fascination towards quantum physics and dance. Prof. Sharada gave in depth insights into how technology can help us to understand the archaeological facts. She highlighted the science behind the creation of the image, history of idea, history of philosophy captured in Nataraja bronze and also indicated the importance of the balance between 'Srishti'-creation and 'Samhara'-destruction. Different aspects & connections of Nataraja in arts and science was beautifully explained with emphasis on the 'Chidambaram Rahasya and so on.

Sailent Features of Dailouge Exchange

Vivekananda Pai: *Kakodkar Ji, What was the thinking process and expectations behind the gifting of 'Nataraja' statue to CERN and how did they receive this particular suggestion?*

Dr. Anil Kakodkar: India is having strong and comprehensive relationship with CERN. Indian Scientists have been collaborating with CERN since early 1960's. CERN is a place where Indian scientists have been exploring the research in sub-atomic particles. Earlier people were participating and collaborating as an individual in different research activities at CERN. Then, CERN decided to set up a billion dollar project on 'Large Hadron Collider' involving large number of countries and researchers across the world. For that, they were seeking contributions from different countries. India was also a participant and made contributions in some hi-tech areas like super conductive magnets and cryogenic equipment's, fast electronics, some precision mechanical equipment's and also grid computing softwares. So, India contributed in many ways and technologically got recognition too. Here, we got a chance to get involved at a large scale with several Indian industries. This was a very beneficial arrangements for India. As a result, the relationship between India and CERN was strengthened and India decided in some manner to express gratitude by making a good present and there was not a better present than a 'Nataraja' Statue. CERN was very happy to receive that piece of Art which has very strong metaphoric connections.

Vivekananda Pai: *We have seen pictures of yours along with sculpture at June 18 2004, and we have seen a picture of that particular statue casting a shade, its nice picture and it is available in social media in different formats. Where was it placed? Were we expecting this kind of a reception to this particular piece of Art?*

Dr. Anil Kakodkar: Frankly, this was no surprise that they received this so well. After all, presenting pieces of Art is a very common thing. It was a two meter tall statue, one of the tallest Nataraja statue in the world, so it required a little open space, placed between two buildings at CERN.

Vivekananda Pai: *Sharada Ji, Nataraja has captured the imagination of many generations and over centuries, today on the same date June 18, we have this image of Nataraja in main building at CERN also, and how did your research journey in various aspects of Nataraja Started?*

Prof. Sharada Srinivasan: Well, I should say that atomic energy is one of my biggest inspirations as my father has been in the area of nuclear energy. When I was young, I used to be taken some of the upcoming nuclear installations. So, I have already this fascination and understanding of potential use of Uranium and Thorium and process of fusion and fission.

That's how, I got interested in doing Physics and Quantum Mechanics. I also had lots of artistic interests because I was involved in Bharatnatyam dance too.

Vivekananda Pai: *Last year I was fortunate to visit to Chidambaram and also in the morning during that puja, that transition was very magical, it started with drums, music, the bells and the Aarti and then ultimately it reached crescendo and that movement there was so much of energy that we could feel and the same time a very magical silence or peace in mind. I would like to ask you little bit more about the concept of Nataraja Murti in Chidambaram and Akasha Lingam. How do they complement each other these two concept?*

Prof. Sharada Srinivasan: Usually in many Shiva temples in Chola region in South India, which is actually the firmness, the lingam in form of the pillar which is actually worshiped from centuries and the Utsah murti, which is a festival icon, which meant to be taken out in procession but Chidambaram is the only temple where Nataraja icon is worshiped in the main sanctum. The shiv Nataraja is connected to the five elements which represents Pancha Bhoota: Prithvi, Varuna, Agni, Vayu, and Akasha.

Vivekananda Pai: *You said, it is one of the biggest Nataraja statue in the world, where was it made and what are the unique aspects if that, how long did it take?*

Dr. Anil Kakodkar: When it was decided that we will present Nataraja to CERN, there were many traditional schools where this work of sculpture and making a bronzes goes on. So, we actually got interested in this job and discussed with Dr. Baldev Raj and his colleagues at Indira Gandhi Centre and Mrs Sudha Bhawe, Joint Secretary at DAE. These are the people who decided to take this project. They decided this work to be done at Swami Malay and the artist was Mr. Rajan Sthapati who agreed to Make Nataraja for us. We also decided that it should be done in traditional wax process as they practice for these bronzes. So it was a combination of modern scientists and technologist who were playing a secondary role. Primarily this work was done in a traditional manner. The whole process took around eight months.

Prof. Ranjana Aggarwal: *When we say that Nataraja at CERN, many atheist may totally disagree with an idea of placing a religious statue at CERN, which is an idol symbol of Hinduism. On the other hand CERN is a place full of people with practical intellect. So in the same time, there are scientists like Fritjof Capra and Carl Sagan who are driving a metaphor between dance of Shiva and dance of sub-atomic particles, these are thoughts of very high ordered thinking with the philosophy involved. As a physicist; how will you perceive this metaphor which a common man can understand in the simple way? So I would like to have your views on this metaphor between dance of Shiva and dance of sub atomic particles.*

Dr. Anil Kakodkar: Human beings are thinking animals, and In India, we have very long knowledge tradition that have been our strength on the basis of deep thinking. Our kind of sages have reached glorious conclusions and there are lots of similarities between them and modern science. Though, there are not 100% similarities, but there are some similarities.

Now talking about dance of Shiva, for an example we know sub-atomic particles, there are always continuous energy transition they move from one stage to another stage. There is actually energy dance which is going on in these particles. Some of the connections we have made. At this stage, I would say that the similarities exists and also appreciate with great respect to the great thinkers of past who came so close to visualizations.

Prof. Ranjana Aggarwal: *Whenever we talk about Shiva's dance, the picture which comes in our mind is that of Tandava which is 'Rudra Rupa'. But, as you said that there is 'Soumya Rupa' also. I would like to know why the 'Soumya Rupa' of Shiva is not so popular or not so prominent and why people are always connecting 'Tandava' with anger although you gave nice concept of 'Soumya Rupa'. I would like to have some your views because he is Nataraja: the king of dance and a dancer has all the expressions not only 'Rudra Rupa'. I would like to know why this so? And then in the sculptures, if you look at many temples, which one you find more and the reason?*

Prof. Sharada Srinivasan: You know whenever it comes to bronze depiction, there is technology that might also be driving the form that actually we see. Because of this form that has arrived actually that is very economically viable. Because with such a large amount of metal, in some way it also has to balance it and stone does not have much of concise strength that actually we can see in some of the Chola statue. In some of the Chola sculptures, there is a beautiful leg lifted but below it, there is fear of breaking, granite does not have that much of concise strength. So this particular form acts as a balancer. Materiality has role to play, bronze has that much of concise strength. In a way it is mix of that. The secret geometry of six sign star is also seen in the sculpture of Nataraja.

For dialogue exchange in detail, please visit the link
<https://www.youtube.com/watch?v=vVa3vj8fqy0>

Webinar was a very successful event with interactive questions and answers. On 18th June, 130 participants were on live event. Further, 1529 persons viewed the Nataraja YouTube Webinar link by the end of June 2020 and 84 persons liked it. Dr. Suman Ray, Senior Scientist, CSIR-NISTADS, gave vote of thanks by New Delhi.

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