

108th

INDIAN SCIENCE CONGRESS

Science and Technology for Sustainable Development
with Women Empowerment

3-7 JANUARY 2023

NAGPUR, MAHARASHTRA



Hosted by :



**RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY
NAGPUR**

**THE INDIAN SCIENCE CONGRESS ASSOCIATION
KOLKATA**



Shri Bhagat Singh Koshyari
Hon'ble Chancellor and Governor of
Maharashtra



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General President
Indian Science Congress Association



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Chairman, Advisory Committee of
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Dr. Rajesh Singh
Local Secretary
108th Indian Science Congress



Dr. G. S. Khadekar
Local Secretary
108th Indian Science Congress

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3-7 January 2023

Nagpur, Maharashtra



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Development with Women Empowerment**

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**RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY
NAGPUR**



**THE INDIAN SCIENCE CONGRESS ASSOCIATION
KOLKATA**



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नितीन गडकरी
NITIN GADKARI



सत्यमेव जयते



आज़ादी का
अमृत महोत्सव
MESSAGE

मंत्री
सड़क परिवहन एवं राजमार्ग
भारत सरकार

Minister
Road Transport and Highways
Government of India

It is indeed a great pleasure to pen down a few words on the occasion of Centennial Celebrations of my Alma Mater- The Rashtrasant Tukdoji Maharaj Nagpur University of which one of the significant event will be 108th Indian Science Congress in our beloved city of Nagpur. At the outset, I congratulate each one associated with our varsity for centennial celebrations and I extend a warm welcome to all the delegates from across the globe who is participating in the Indian Science Congress.

The great cosmologist and theoretical physicist Stephen Hawking had once said that- Scientists have become the bearers of the torch of discovery in our quest for knowledge. This line of Mr. Hawking is true to its core. Had there been no quest for knowledge, science would not have developed this much and took entire mankind so far from its primitive condition. I am proud to say that, India is amongst one of the best examples the world has ever witnessed about what miracle scientific temperament can play. We are the emerging global power named 'India' today of which a backbone is science.

Rashtrasant Tukdoji Maharaj Nagpur University is one of the oldest varsities in India and is well known for its academic standards. Academic institutions have their first mandate to impart a quality education. However, their main aim is to nourish the minds and souls of youths so that they become competent enough to serve the mankind through any occupation of their choice. I am happy and proud to say that our University has proved itself to be one of such institutions through its long journey of a century. Rashtrasant Tukdoji Maharaj Nagpur University is celebrating its centenary year from 04th August 2022 and under the aegis of celebration, 108th Indian Science Congress is being organized during the period of 03 -07 January 2023. It is after a long gap of about 50 years that the conference of Indian Science Congress is being organized in Nagpur. This, altogether, holds importance because centenary year is coinciding with our 'Azadi Ka Amrit Mahotsava' (75th Year (platinum jubilee) of Independence of India) and an added value to this celebration is an ISC conference in which Nobel laureates, Scientists, Teachers, Industry leaders from all over world as well as large number of students from all over India will participate.



नितीन गडकरी
NITIN GADKARI



सत्यमेव जयते



आज़ादी का
अमृत महोत्सव

(2)

मंत्री
सड़क परिवहन एवं राजमार्ग
भारत सरकार

Minister
Road Transport and Highways
Government of India

It will be a great feast of the scientific knowledge when we are also celebrating 75th year of our independence.

The theme of the Congress is "Science and Technology for Sustainable Development and Women Empowerment". I am sure that, a quality discourse and discussion on economic growth, social development, environmental sustainability and women empowerment policies will enrich participants along with some concrete take away for the further development of our motherland.

I hope that this Congress will offer numerous opportunities for sharing and exchanging original research ideas and opinions, gaining inspiration for future research, and broadening knowledge about various fields of science and technology. The participants will have an ample opportunity to witness and enjoy the cultural and recreational activities as well along with a pleasure of site visits.

Being the Chairman of the Advisory Committee of Centenary Celebration, I again extend a very warm welcome to all the delegates consisting of Nobel laureates, scientists, researchers, plenary and invited speakers and express gratitude in advance towards them for being with us here to preach, teach, experiment, exchange, share and learn.

Yours,


(Nitin Gadkari)



Invitation and the Welcome Message from the General President

Dr. (Mrs.) Vijay Laxmi Saxena

Science and Technology with its embodying dimensions has proved its landmark relevance in the journey traversed by it to stimulating height of advancement and development. With this perspective, I take this rare opportunity in according a hearty, cordial and warm welcome to the esteemed delegate of **108th session of ISCA**. Indeed, the sprawling campus of the renowned RTM Nagpur University, Maharashtra would sincerely provide a positive aura to the cause of scientific temper among the upcoming talents.

This year the focal theme is **“Science and Technology for Sustainable Development with Women Empowerment”** —truly befitting the quest for knowledge cum research-oriented excellence on scientific front, leading to a fantastic approach of social integration as well as global technological innovation. Scientific policies for Sustainable Development with committed contribution of women folk has quintessential relationship with overall development. Women are indelible force of the sustainable development programme in every walk of life of a country. In their absence the idea or the target of complete sustainable development- could not be envisaged or can be realized. The fact was well recognized by the Former Prime Minister **Sri Atal Bihari Vajpayee** he said, “Developing countries that have made remarkable social progress, have done so primarily through the empowerment of women, which has had enormous impact in terms of literacy, health and economic well-being of families”.

History is the witness that science has been gender neutral. Yet the contribution of women for Science and Technology could never come to the fore and that males remain dominating the scientific stream. But now women were inducted in various National Science Academies or in decision making position in such establishment. Now the pertinent issue is this that how should we make Science stream in the country more inclusive by encouraging the participation of women Scientist, which is vital for country sustainable development.

A Nations competitive sustainability in the present scenario demands an enriching and significant role on part of scientific policies which, in turn, manifests in multi-winged domain of Scientific Applications, Education, Health, Energy, Environment, Biotechnology Space Mission, Nuclear Front, Food and Nutrition etc. However, focal points should be assigned to the fact that automated scientific advances lie essentially approached with an element of ethics and a human face.



Throughout these years, considerable development has been made in different sectors such as agriculture, health care, space research, nuclear power etc. through scientific research. In spite of all these achievements in science, technology and sustainable development, a large number of our population are poor, living below the poverty line. To improve the quality of life of these poor people, which includes a large number of farmers; Hon'ble Prime Minister of India **Sri Narendra Modi-ji** aspired for a new India by doubling the income of farmers by 2022. Indian scientists are working aggressively towards establishing itself a leader of technological development through advances in computing power, nanotechnology, biotechnology, artificial intelligence and data science etc.

It is my firm belief that 108th session of ISCA would serve as a pivotal platform towards exchange of ideas, knowledge, core values and innovative skills by the youth fraternity to their utmost. Finally, I once again take this proud and performance oriented opportunity to welcome this galaxy of esteemed Scientist, who can serve as torch-bearers to our upcoming educationists, scientists and entrepreneur in the making—in reaping the fruitful benefits of science and technology –which require right directional efforts and great amount of submission on the part of all –on the road to sustainability with focus on women empowerment.

I, on behalf of the Indian Science Congress Association and the host University, invite you to attend 108th Indian Science Congress to be held at RTM Nagpur University, Maharashtra from 3rd to 7th January, 2023.

Dr. (Mrs.) Vijay Laxmi Saxena
General President
The Indian Science Congress Association



Welcome Message of the Vice Chancellor

I am delighted to inform you that Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in association with the Indian Science Congress Association (ISCA), Kolkata, is organizing the 108th Indian Science Congress during 03–07 January 2023. The theme of this congress is “Science and Technology for Sustainable Development and Womens' Empowerment”.

Science and Technology bring economic growth and well-being to a Nation and mankind as a whole. It can bring new findings about empowerment of women and also the enrichment of Science and Technology through participation.

This congress is a major focal point for Scientists, Researchers, Academicians and Students interested in various aspects of novel discoveries of Science and innovation in Technologies related to diverse field of Sustainable Development in general and Womens' Empowerment in particular. Progress in field of various Sciences like Mathematical, Physical, Chemical, Engineering, Earth Sciences, Life Sciences and Agricultural Sciences have significantly contributed to the development of modern Technologies as well as betterment of society. Many inventions in Science and Technology are altering the way people live, connect, communicate, transact and work, which would pave the way for economic development.

I hope that the 108th Indian Science Congress will serve as a platform for Researchers, Academicians, Students and Industries to share their findings and research in various fields of Sciences.

On behalf of the organizing committee, it is my great pleasure to extend a very warm Welcome to all the dignitaries and be a part of what may well turn out to be a historic event. The host University and Indian Science Congress Association look forward to your active participation in the 108th Indian Science Congress. I hope that your presence would add value and new dimension to this prestigious National event.

(Dr. Subhash R. Chaudhari)
Chairman, Organizing Committee,
108th Indian Science Congress



ISCA Executive Committee: 2022-23

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Immediate Past General President

Prof. K. S. Rangappa Mysuru

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Prof. Arvind Kumar Saxena Jaipur

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ISCA Council : 2022-2023

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General President-Elect

Prof.Arvind Kumar Saxena Jaipur

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Representative of Indian National Science Academy (INSA) Council

Dr.Hemanta Kumar Majumder Kolkata



ISCA Origin and Growth

GENESIS

The Indian Science Congress Association (ISCA) owes its origin to the foresight and initiative of two British Chemists, namely, Professor J. L. Simonsen and Professor P.S. MacMahon. It was their view that scientific research in India would be stimulated if an annual meeting of research workers somewhat on the lines of the British Association for the Advancement of Science could be arranged.

The Association was formed with the following objectives :

- a) To advance and promote the cause of Science in India;
- b) To hold an annual Congress at a suitable place in India;
- c) To publish such proceedings, journals, transactions and other publications as may be considered desirable;
- d) To secure and manage funds and endowments for the promotion of Science including the rights of disposing of or selling all or any portion of the properties of the Association;
- e) To do and perform any or all other acts, matters and things as are conducive to, or incidental to, or necessary for, the above objects.

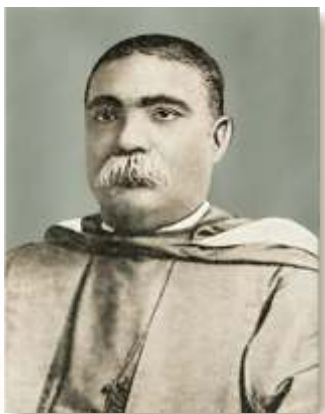
ISCA AND THE ASIATIC SOCIETY OF BENGAL

The generous and sympathetic attitude of the Asiatic Society towards scientific development in India created conditions for the holding of the first meeting of the Congress in 1914. From that time onwards, the Asiatic Society took considerable care in nurturing the infant organization and managing its affairs. In fact, the ISCA continued to enjoy the hospitality of the paternal home for 25 years since its inception. But the rapid growth of

activities of the ISCA made it impossible for the Asiatic Society to look after it properly. Therefore, soon after the Silver Jubilee Session of the Congress (1938) the headquarters of the Association were shifted elsewhere, to be easily accessible to the then General Secretaries of the Association, First in the premises of the Calcutta University and later, in the Presidency College, Calcutta. In 1947, the Indian Science Congress Association again returned to the buildings of the Asiatic Society of Bengal and continued to carry on its steadily increasing activities from this centre at 1, Park Street, Calcutta. The need for having a permanent habitation of the Association was keenly felt in 1948-49 and Dr. B. Mukerji, the then General Secretary, broached the subject in several meetings of the Association and proposed creation of a "Building Fund" for the Association.

The question of a permanent habitation was kept in abeyance till 1952, when the Executive Committee of the Association ultimately created a "Building Fund" out of its savings. The Calcutta Corporation generously agreed, as a mark of their interest in the cause of the progress of science in India, to give on 99 years lease a piece of land measuring about 20,800 sq. ft. at 64, Dilkhusa Street, Calcutta 17, on a nominal rent of ₹ 1/- per year. The announcement about the gift of this land was made at the inaugural function of the 40th Session of the Indian Science Congress held at Lucknow in January, 1953.

As the Association had little resources of its own, attention was now diverted to the procurement of the necessary money for constructing the building. Representations were made to the Government of India, for a capital grant of ₹ 5.5 lakhs in 1955. The Government of India agreed to sanction ₹ 2 lakhs in early 1956, and subsequently Government of West Bengal also sanctioned a sum of ₹ 1 lakh.



Sir Asutosh Mookerjee

The structure was completed in 1957 and the office of the Association was shifted there from the premises of the Asiatic Society.

The first meeting of the Congress was held from January 15-17, 1914 at the premises of the

Asiatic Society, Calcutta, with the Honourable Justice Sir Asutosh Mookerjee, the then Vice-Chancellor of the Calcutta University, as President. One hundred and five scientists from different parts of India and abroad attended. The 35 papers presented were divided into six sections—Botany, Chemistry, Ethnography, Geology, Physics, Zoology under six Sectional Presidents.

From this modest beginning with hundred and five members and thirty five papers communicated for reading at the first session, ISCA has grown into a strong fraternity with more than Forty thousand members till to date. The number of papers communicated for reading has risen to more than two thousand. Upto year 2000 there were Sixteen sections, two committees and six forums, namely Sections on Agricultural Sciences, Anthropology & Archaeology, Biochemistry, Biophysics & Molecular Biology, Botany, Chemistry, Computer Sciences, Earth System Sciences, Engineering Sciences, Material Sciences, Mathematics, Medical & Veterinary Sciences, Physics, Physiology, Psychology & Educational Sciences, Statistics, Zoology, Entomology & Fisheries; Committees – Home Sciences, Science & Society; Forums-Communication & Information Science, Environmental Sciences, Forensic Science,

Science Education, Science for School Students and Women & Science.

There are now fourteen sections namely Agriculture and Forestry Sciences, Animal, Veterinary and Fishery Sciences, Anthropological and Behavioural Sciences (including Archaeology, Psychology, Education and Military Sciences), Chemical Sciences, Earth System Sciences, Engineering Sciences, Environmental Sciences, Information and Communication Science & Technology (including Computer Sciences), Materials Science, Mathematical Sciences (including Statistics), Medical Sciences (including Physiology), New Biology (including Biochemistry, Biophysics & Molecular Biology and Biotechnology), Physical Sciences, Plant Sciences and one Committee Science & Society.

SILVER JUBILEE

The Silver Jubilee Session of the Science Congress was held at Calcutta in 1938 under the Presidentship of Lord Rutherford of Nelson but due to his sudden demise, Sir James Jeans took the chair. It was at this Jubilee Session that the participation of foreign scientists in session of the Indian Science Congress was first initiated.

PANDIT JAWAHARLAL NEHRU PRESIDES OVER THIRTY FOURTH SESSION - 1947



Pandit Jawaharlal Nehru

On the eve of Indian Independence, the 34th Annual Session of the Indian Science Congress was held at Delhi in January 1947 with Pandit Jawaharlal Nehru, Prime Minister of India, as General President. Pandit Nehru's personal



interest in the Science Congress continued ever since and there had been hardly any session during his lifetime which he did not attend. He has immensely enriched the activities of the Congress by his sustained interest in the development of scientific atmosphere in the country, particularly among young generations.

Interaction with Foreign Scientific Academies/Associations from 1947, and programme for inviting representatives from foreign societies and academies were included in the Science Congress. This trend still continues with the support of the Department of Science & Technology, Government of India. After independence ISCA has actively represented in various foreign scientific academies/associations, namely British Association for the Advancement of Science, American Association for the Advancement of Science, French Academy of Sciences, Bangladesh Academy of Sciences, Sri Lanka Association for the Advancement of Science, etc. with a view to have a first hand knowledge on topics of mutual interest.

GOLDEN JUBILEE

The Science Congress celebrated its Golden Jubilee in October, 1963 at Delhi with Prof.D.S. Kothari as General President. On this occasion two special publications were brought out :

- (1) A short History of the Indian Science Congress Association and
- (2) Fifty Years of Science in India (in 12 volumes, each volume containing reviews of particular branch of science).

DIAMOND JUBILEE

The Diamond Jubilee Session of the Science Congress was held at Chandigarh in January 3-9,

1973, under the Presidentship of Dr. S.Bhagavantam. On this occasion two special publications were brought out :

- (1) A Decade (1963-72) Indian Science Congress Association (with life-sketches of General Presidents) and
- (2) A Decade (1963-72) of Science in India (in section-wise).

INTRODUCTION OF FOCAL THEME

The year 1976 witnessed a significant development in the trend of deliberations during the congress. It was being felt for sometime that such a gathering of scientists, covering a wide spectrum ought to be seized of national issues that have scientific and technological implications. In 1976, Dr.M.S.Swaminathan, the then General President of ISCA introduced the Focal Theme of national relevance which is now discussed in every section, committee and forum during the annual session. These apart, several plenary sessions are organised around various facets of the Focal Theme in which scientists and technologists as well as policy makers and administrators interact with one another. ISCA has thus become a platform where members from different disciplines and from different walks of life can contribute to discussions on the Focal Theme.

TASK FORCE

Another significant breakthrough was made in 1980 when the Department of Science & Technology, Government of India, set up a permanent Task Force involving representatives of ISCA and chiefs of different agencies and voluntary organizations chaired by Secretary, DST, as being responsible for following up various recommendations on the Focal



Theme. Every year follow-up actions on recommendations made in the previous Science Congress are discussed at a General Session organized by DST during the Science Congress. Through this process, the Indian Science Congress Association has been contributing to the development of Science in general and National Science Policy, in particular.

YOUNG SCIENTIST'S AWARD PROGRAMME

Indian Science Congress Association introduced the programme for Young Scientists from the 68th session of the Indian Science Congress in 1981. The programme enables Young Scientists to present their research work with opportunities to exchange ideas in the relevant scientific problems with their counterparts and specialists. The ISCA Young Scientist Awards are given to candidates for making the best presentations. Fourteen such awards are given at present. The award amount has been enhanced from ₹ 5,000/- from 93rd session and now carries ₹ 25,000/- and a certificate of merit.

PLATINUM JUBILEE

The Indian Science Congress Association celebrated its Seventy Fifth year of its inception, popularly called otherwise, Platinum Jubilee, in 1988, with Prof.C.N.R. Rao as General President. Keeping this in view, a special brochure, entitled "Indian Science Congress Association – Growth & Activities" was published so as to highlight the programme of the Association over the years. The main programmes were:

- (i) Bringing out special publication on the occasion of the Platinum Jubilee
- (ii) Presentation of Plaques to the General Presidents of the Association

- (iii) Establishment of Platinum Jubilee Lectures to be organised in each section during the annual session of the Science Congress and
- (iv) Extension of the recent activities of the ISCA and its further diversification to generate scientific temper and popularize science.

CENTENARY SESSION

The Indian Science Congress Association celebrated its Hundredth year of its inception in June 2, 2012 and the Centenary Session was held at Kolkata in 2013 under the Presidentship of Dr. Manmohan Singh, the then Honourable Prime Minister of India.

On this occasion:



Dr. Manmohan Singh

Ten number of Asutosh Mookerjee Fellowships were instituted to honour and encourage senior scientists in India.

The Science, Technology and Innovation Policy 2013 was released.

India Postage Stamps were released by Department of Posts for the centenary celebration.

A special book entitled "The Centenary Session of the Indian Science Congress Nationwide Celebration" was published so as to present the information about the initiatives of the Indian Science Congress Association towards the centenary celebration through its various chapters in India.



PRESENTATION OF PAPERS

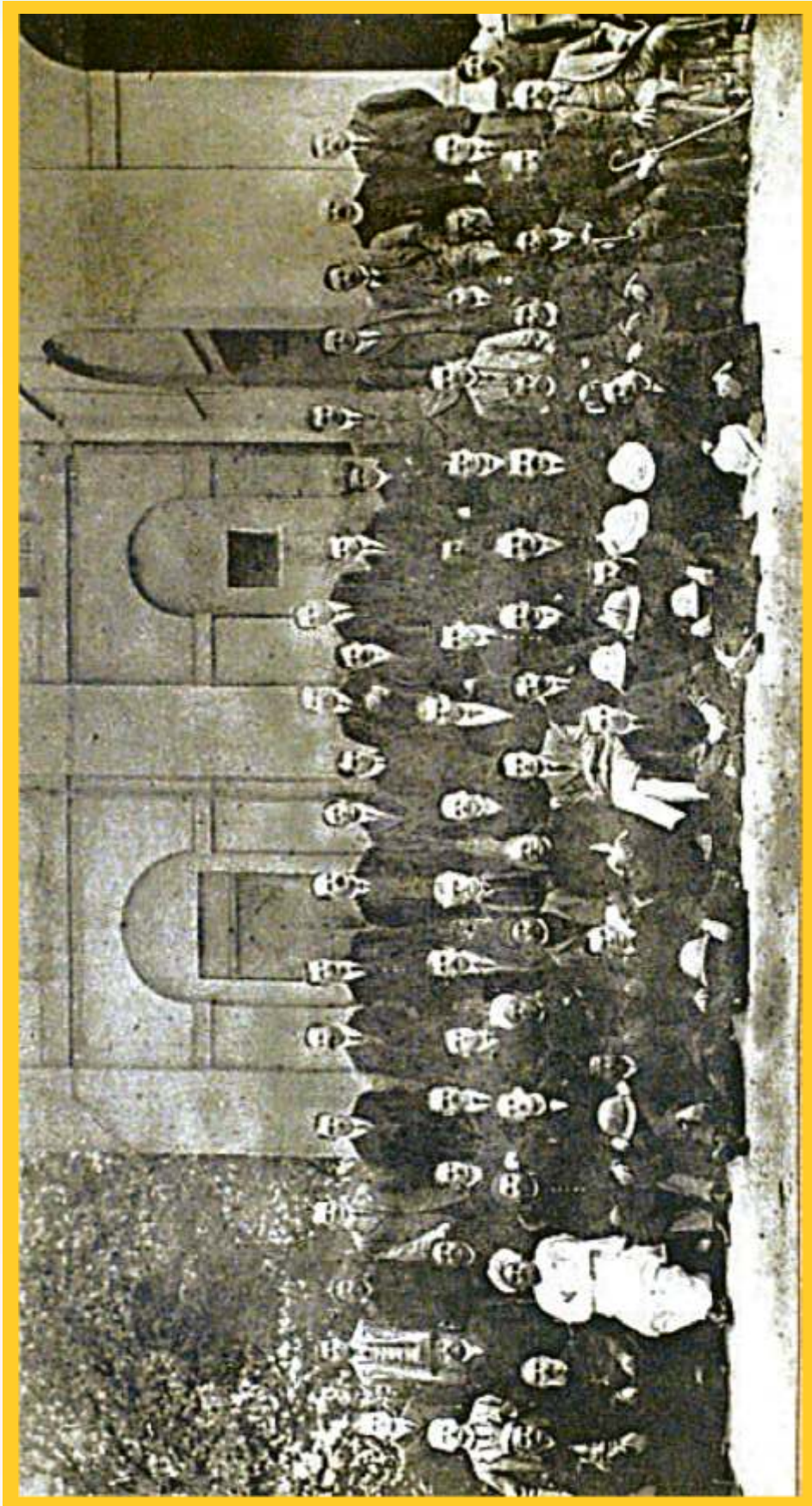
It was decided that generally most of the contributed papers, which were accepted on the basis of a careful screening by the concerned Sectional Presidents will be presented as posters. Further, to encourage scientists it was decided that at most two Prizes of ₹ 1,000/- in cash along with a certificate to be awarded to the best presentation in each Section from 86th Session. The award money has been enhanced to ₹ 5,000/- from 94th Session. Since 2013-14 best poster presentation award has been converted to a separate programme.

ISCA CHAPTERS

The Association started organizing popular science lectures in different centers in India from 1962-63. The scheme envisages constructive work for the popularization and advancement of

science throughout the year. Till 1985-86 these lectures were delivered at seventeen centres spread over the country. However, this was restructured with the formation of Regional Chapters from 1986-1987. One of the major objectives of the ISCA is to inculcate the Scientific temper among the people and to encourage young scientists to grow up steadily in this direction involving them in the programmes relevant to fundamental, experimental and operational activities. With these objectives in view, ISCA started Chapters from 1986-87 in different places in India. At present twenty nine ISCA Chapters are at Allahabad, Amravati, Bangalore, Baroda, Bhubaneswar, Bilsapur, Chandigarh, Chennai, Cochin, Coimbatore, Delhi, Dharmanagar, Haridwar, Hyderabad, Imphal, Jaipur, Jammu, Kanpur, Kolkata, Laddakh, Patiala, Patna, Pondicherry, Rohtak, Shillong, Shimla, Srinagar, Tirupati, Vijayapura.





First Indian Science Congress, 1914, Calcutta



100th INDIAN SCIENCE CONGRESS

03 - 07 January 2013, Kolkata

“Science for shaping the future of India”

University of Calcutta

The Indian Science Congress Association



Left to Right – 1st Row : Prof.S.Baha (Local Secretary), Dr.M.K.Chakrabarti (General Secretary), Prof.K.C.Pandey, Prof.R.Ramanurthi, Dr.R.A.Masolkar, Dr.P.Rama Rao, Prof.D.K.Sinha, Prof.G.Bali, Prof.Suranjan Das (Vice-Chancellor, C.U.), Smt. Mamata Banerji (Chief Minister of W.B.), Shri Pranab Mukherjee (President of India), Dr.Mamohan Singh (Prime Minister & General President), Shri M.K. Narayanan (Governor of W.B.), Shri Jaijpal Reddy (Union Minister of S & T), Prof.R.C.Sobti (President-Elect), Prof.L.S.Swaminathan, Prof.S.K.Joshi, Dr.(Mrs.) M.Sharma, Prof.A.K.Sharma, Prof.S.S.Kaityar, Dr.K.Kaviratnam, Prof.A.Datta, Prof.H.Gupta, Dr.T.Ramasami, Dr.N.B.Basu (Treasurer), Dr.(Mrs.) V.L.Saxena (General Secretary), Prof.D.Chattopadhyay (Local Secretary)

2nd Row : Prof.B.P.Chatterjee, Prof.H.P.Tiwari, Prof.S.P.Singh, Prof.B.Satyannarayana, Prof.Uma Kani, Dr.(Mrs.) Y.Puthak, Dr.(Miss) S.P.Arya, Mr.L.K.Gite, Dr.S.S.Prakash, Prof.D.Kumar, Prof.Gangadhar, Mr.V.M.Tribhan, Smt.K.Swarup, Dr.A.K.Saxena, Dr.A.Samanta, Prof.S.Kumar, Dr.S.K.Jain, Prof.S.P.Trivedi, Dr.M.Arachami, Prof.C.Muthaiahchebban, Prof.A.Shastry, Prof.S.P.Mukherjee, Dr.A.B.Banerjee, Prof.A.Banerji, Dr.S.B.Mahapatra

3rd Row : Dr.P.Asthana, Dr.Ajai, Prof.A.P.Sharma, Prof.K.K.Drivedi, Prof.S.Ram, Dr.P.K.Ghosh, Prof.D.D.Paul, Dr.U.C.Lavania, Prof.T.Ghosh, Prof.D.Singh, Prof.N.R.Jagannathan, Prof.A.R. Bandyopadhyay, Prof.U.A.Singh, Prof.A.K.Rai

100th Indian Science Congress, 2013, Kolkata



Chronology of ISCA Sessions

Session	Year	Place	President	General Secretaries	Title/Theme
1st	1914	Calcutta	Hon. Justice Sir Asutosh Mookerjee	Mr. D. Hooper	About Science Congress
2 nd	1915	Madras	Hon. Surgeon-General Dr. W. B. Bannermann	Dr. J. L. Simonsen Mr. P. S. MacMahon	The Importance of Knowledge of Biology to Medical, Sanitary and Scientific Men Working in the Tropics
3 rd	1916	Lucknow	Colonel Sir Syndey Burrard	Dr. J. L. Simonsen Mr. P. S. MacMahon	The Plains of Northern India and their Relationship to the Himalayan Mountains
4 th	1917	Bangalore	Sir Alfred Gibbs Bourne	Dr. J. L. Simonsen Mr. P. S. MacMahon	On Scientific Research
5 th	1918	Lahore	Dr. Gilbert T. Walker	Dr. J. L. Simonsen Mr. P. S. MacMahon	On Teaching of Science
6 th	1919	Bombay	Lt. Colonel Sir Leonard Rogers	Dr. J. L. Simonsen Mr. P. S. MacMahon	Researches on Cholera
7 th	1920	Nagpur	Acharya Prafulla Chandra Ray	Dr. J. L. Simonsen Mr. P. S. MacMahon	Dawn of Science in Modern India
8 th	1921	Calcutta	Sir Rajendra Nath Mookerjee	Dr. J. L. Simonsen Dr. C. V. Raman	On Science and Industry
9 th	1922	Madras	Mr. C. S. Middlemiss	Dr. J. L. Simonsen Dr. C. V. Raman	Relativity
10 th	1923	Lucknow	Sir M. Visvesvaraya	Dr. J. L. Simonsen Dr. C. V. Raman	Scientific Institutions and Scientists
11 th	1924	Bangalore	Dr. T. N. Annandale	Dr. J. L. Simonsen Dr. C. V. Raman Dr. S. P. Agharkar	Evolution Convergent and Divergent
12 th	1925	Banaras	Dr. M. O. Forster	Dr. J. L. Simonsen Dr. S. P. Agharkar	On Experimental Training
13 th	1926	Bombay	Mr. Albert Howard	Dr. J. L. Simonsen Dr. S. P. Agharkar Dr. Roland V. Norris	Agriculture and Science
14 th	1927	Lahore	Sir J. C. Bose	Dr. S. P. Agharkar Dr. Roland V. Norris	The Unity of Life
15 th	1928	Calcutta	Dr. J. L. Simonsen	Dr. S. P. Agharkar Dr. Roland V. Norris	On Chemistry of Natural Products
16 th	1929	Madras	Professor C. V. Raman	Dr. S. P. Agharkar Dr. Roland V. Norris	On Raman Effect
17 th	1930	Allahabad	Col. S. R. Christophers	Dr. S. P. Agharkar	The Science and Disease
18 th	1931	Nagpur	Lt. Col. R. B. Seymour-Sewell	Dr. S. P. Agharkar Dr. H. B. Dunicliff	The Problem of Evolution - Experimental Modification of Bodily Structure



Session	Year	Place	President	General Secretaries	Title/Theme
19 th	1932	Bangalore	Rai Bahadur Lal Shiv Ram Kashyap	Dr. S. P. Agharkar Dr. H. B. Dunicliff	Some Aspects of the Alpine Vegetation of the Himalaya and Tibet
20 th	1933	Patna	Sir Lewis L.Fermor	Dr. S. P. Agharkar Mr. W. D. West	The Place of Geology in the Life of a Nation
21 st	1934	Bombay	Professor M.N.Saha	Dr. S. P. Agharkar Mr. W. D. West	Fundamental Cosmological Problems
22 nd	1935	Calcutta	Dr.J.H.Hutton	Dr. S. P. Agharkar Mr. W. D. West	Anthropology and India
23 rd	1936	Indore	Sir U.N.Brahmachari	Mr. W. D. West Prof. J. N. Mukherjee	The Role of Science in the Recent Progress of Medicine
24 th	1937	Hyderabad Venkatraman	Rao Bahadur T.S. Prof. J. N. Mukherjee	Mr. W. D. West Present and Future	The Indian Village - its Past,
25 th	1938	Calcutta	Sir James H.Jeans (Lord Rutherford of Nelson died prematurely)	Mr. W. D. West Prof. J. N. Mukherjee	Researches in India and in Great Britain
26 th	1939	Lahore	Professor J.C.Ghosh	Prof. J. N. Mukherjee Prof. P. Parija	On Research in Chemistry in India
27 th	1940	Madras	Professor B.Sahni	Prof. P. Parija Prof. S. K. Mitra	The Deccan Traps: An Episode of the Tertiary Era
28 th	1941	Banaras	Sir Ardeshir Dalal	Prof. P. Parija Prof. S. K. Mitra	Science and Industry
29 th	1942	Baroda	Dr.D.N.Wadia	Prof. P. Parija Prof. S. K. Mitra	The Making of India
30 th	1943	Calcutta	Dr.D.N.Wadia	Prof. P. Parija Prof. S. K. Mitra	Minerals' Share in the War
31 st	1944	Delhi	Professor S.N.Bose	Prof. P. Parija Prof. S. K. Mitra	The Classical Determinism and the Quantum Theory
32 nd	1945	Nagpur	Sir Shanti S.Bhatnagar	Prof. S. K. Mitra Prof. P. C. Mitter Prof. M. Qureshi	Give Science a Chance
33 rd	1946	Bangalore	Professor M.Afzal Husain	Prof. M. Qureshi Prof. P. C. Mahalanobis	The Food Problem of India
34 th	1947	Delhi	Pandit Jawaharlal Nehru	Prof. M. Qureshi Prof. P. C. Mahalanobis	Science in the Service of the Nation
35 th	1948	Patna	Colonel Sir Ram Nath Chopra	Prof. M. Qureshi Prof. P. C. Mahalanobis Dr. B. Mukerji	Rationalisation of Medicine in India
36 th	1949	Allahabad	Sir K.S.Krishnan	Prof. M. Qureshi Dr. B. Mukerji Dr. B. Sanjiva Rao	—
37 th	1950	Poona	Professor P.C. Mahalanobis	Dr. B. Mukerji Dr. B. Sanjiva Rao	Why Statistics ?



Session	Year	Place	President	General Secretaries	Title/Theme
38 th	1951	Bangalore	Dr.H.J.Bhabha	Dr. B. Mukerji Dr. B. Sanjiva Rao	The Present Concept of the Physical World
39 th	1952	Calcutta	Dr.J.N.Mukherjee	Dr. B. Mukerji Dr. B. Sanjiva Rao	Science and Our Problems
40 th	1953	Lucknow	Dr.D.M.Bose	Dr. S. R. Sen-Gupta Dr. B. N. Prasad	The Living and the Non-living
41 st	1954	Hyderabad	Dr.S.L.Hora	Dr. B. N. Prasad Dr. U. P. Basu	Give Scientists a Chance
42 nd	1955	Baroda	Professor S.K.Mitra	Dr. B. N. Prasad Dr. U. P. Basu	Science and Progress
43 rd	1956	Agra	Dr.M.S.Krishnan	Dr. U. P. Basu Mr. B. B. Joshi	Mineral Resources and Their Problems
44 th	1957	Calcutta	Dr.B.C.Roy	Dr. U. P. Basu Mr. B. B. Joshi	On Science for Human Welfare and Development of the Country
45 th	1958	Madras	Prof.M.S.Thacker	Mr. B. B. Joshi Dr. A. K. Dey	Grammar of Scientific Development
46 th	1959	Delhi	Dr.A.L.Mudaliar	Dr. A. K. Dey Dr. B. N. Prasad	Tribute to Basic Sciences
47 th	1960	Bombay	Professor P.Parija	Dr. A. K. Dey Dr. B. N. Prasad	Impact of Society on Science
48 th	1961	Roorkee	Professor N.R.Dhar	Dr. B. N. Prasad Prof. B. C. Guha	Nitrogen Problem
49 th	1962	Cuttack	Dr.B.Mukerji	Prof. B. C. Guha Prof. P. S. Gill	Impact of Life Sciences on Man
50 th	1963	Delhi	Professor D.S.Kothari	Prof. P. S. Gill Dr. Atma Ram	Science and the Universities
51 st	1964	Calcutta	Professor Humayun Kabir	Prof. P. S. Gill Dr. Atma Ram	Science and the State
52 nd	1965	Calcutta	Professor Humayun Kabir	Prof. P. S. Gill Dr. Atma Ram	
53 rd	1966	Chandigarh	Professor B.N.Prasad	Dr. Atma Ram Prof. Chandra	Science in India
54 th	1967	Hyderabad	Professor T.R.Seshadri	Dr. Atma Ram Prof. Chandra Sekhar Ghosh Prof. A. K. Saha	Science and National Welfare
55 th	1968	Varanasi	Dr.Atma Ram	Prof. A. K. Saha Dr. R. S. Mishra	Science in India - Some Aspects
56 th	1969	Bombay	Dr.A.C.Joshi (Prof.A.C.Banerjee prematurely)	Prof. A. K. Saha Dr. R. S. Mishra	A Breathing Spell: Plant Sciences in the Service of Man Man died



Session	Year	Place	President	General Secretaries	Title/Theme
57 th	1970	Kharagpur	Dr.L.C.Verman	Dr. R. S. Mishra Prof. (Mrs.) Asima Chatterjee	Standardization: A Triple Point Discipline
58 th	1971	Bangalore	Dr.B.P.Pal	Dr. R. S. Mishra Prof. (Mrs.) Asima Chatterjee	Agricultural Science and Human Welfare
59 th	1972	Calcutta	Professor W.D.West	Prof. (Mrs.) Asima Chatterjee Prof. Ram Chand Paul	Geology in the Service of India
60 th	1973	Chandigarh	Dr.S.Bhagavantam	Prof. Ram Chand Paul Dr. S. M. Sircar	Sixty Years of Science in India
61 st	1974	Nagpur	Professor R.S.Mishra	Prof. Ram Chand Paul Dr. S. M. Sircar	Mathematics – Queen or Handmaiden
62 nd	1975	Delhi	Professor (Mrs.) Asima Chatterjee	Dr. S. M. Sircar Prof. R. D. Tiwari	Science and Technology in India : Present and Future
63 rd	1976	Waltair	Dr.M.S.Swaminathan	Prof. R. D. Tiwari Dr. S. M. Sircar	Science and Integrated Rural Development
64 th	1977	Bhubaneswar	Dr.H.N.Sethna	Prof. R. D. Tiwari Prof. A. K. Sharma	Survey, Conservation and Utilisation of Resources
65 th	1978	Ahmedabad	Dr.S.M.Sircar	Prof. A. K. Sharma Dr. B. Ramachandra Rao	Science Education and Rural Development
66 th	1979	Hyderabad	Professor R.C. Mehrotra	Dr. B. Ramachandra Rao Prof. A. K. Sharma	Science and Technology in India During the Coming Decade(s)
67 th	1980	Jadavpur	Professor A.K.Saha	Dr. B. Ramachandra Rao Dr. D. Basu	Energy Strategies for India
68 th	1981	Varanasi	Professor A.K.Sharma	Dr. D. Basu Prof. Arun K. Dey	Impact of the Development of Science and Technology on Environment
69 th	1982	Mysore	Professor M.G.K. Menon	Prof. Arun K. Dey Dr. D. Basu	Basic Research as an Integral Component of Self-reliant Base of Science and Technology
70 th	1983	Tirupati	Professor B. Ramachandra Rao	Prof. Arun K. Dey Prof. (Mrs.) Archana Sharma	Man and the Ocean – Resource and Development
71 st	1984	Ranchi	Professor R.P.Bambah	Prof. (Mrs.) Archana Sharma Prof. M. K. Singal	Quality Science in India – Ends and Means
72 nd	1985	Lucknow	Professor A.S.Paintal	Prof. M. K. Singal Prof. (Mrs.) Archana Sharma	High Altitude Studies
73 rd	1986	Delhi	Dr.T.N.Khoshoo	Prof. M. K. Singal Prof. D. K. Sinha	Role of Science and Technology in Environmental Management



Session	Year	Place	President	General Secretaries	Title/Theme
74 th	1987	Bangalore	Professor (Mrs.) Archana Sharma	Prof. D. K. Sinha Dr. (Mrs.) S. P. Arya	Resources and Human Well-being Inputs from Science and Technology
75 th	1988	Pune	Professor C.N.R.Rao	Dr. (Mrs.) S. P. Arya Prof. D. K. Sinha	Frontiers in Science & Technology
76 th	1989	Madurai	Dr.A.P.Mitra	Dr. (Mrs.) S. P. Arya Dr. S. C. Pakrashi	Science & Technology in India : Technology Missions
77 th	1990	Cochin	Professor Yash Pal	Dr. S. C. Pakrashi Dr. (Mrs.) Gouri Ganguly	Science in Society
78 th	1991	Indore	Professor D.K.Sinha	Dr. (Mrs.) Gouri Ganguly Dr. S. C. Pakrashi	Coping with Natural Disaster : An Integrated Approach
79 th	1992	Baroda	Dr.Vasant Gowariker	Dr. (Mrs.) Gouri Ganguly Prof. D. P. Chakraborty	Science, Population and Development
80 th	1993	Goa	Dr.S.Z.Qasim	Prof. D. P. Chakraborty Prof. H. P. Tiwari	Science and Quality of Life
81 st	1994	Jaipur	Professor P.N. Srivastava	Prof. H. P. Tiwari Prof. D. P. Chakraborty	Science in India: Excellence and Accountability
82 nd	1995	Calcutta	Dr.S.C.Pakrashi	Prof. H. P. Tiwari Prof. S. P. Mukherjee	Science, Technology and Industrial Development in India
83 rd	1996	Patiala	Professor U.R.Rao	Prof. S. P. Mukherjee Dr. (Mrs.) Yogini Pathak	Science and Technology for Achieving Food, Economic and Healthy Security
84 th	1997	Delhi	Dr.S.K.Joshi	Dr. (Mrs.) Yogini Pathak Prof. S. P. Mukherjee	Frontiers in Science & Engineering and Their Relevance to National Development
85 th	1998	Hyderabad	Professor P.Rama Rao	Dr. (Mrs.) Yogini Pathak Prof. A. S. Mukherjee	Science & Technology in Independent India : Retrospect and Prospect
86 th	1999	Chennai	Dr.(Mrs.) Manju Sharma Prof. Uma Kant	Prof. A. S. Mukherjee and Challenges as We Move into the Next Millennium	New Bioscience : Opportunities and Challenges as We Move into the Next Millennium
87 th	2000	Pune	Dr.R.A.Mashelkar	Prof. Uma Kant Prof. A. S. Mukherjee	Indian S & T into the Next Millennium
88 th	2001	New Delhi	Dr.R.S.Paroda	Prof. Uma Kant Prof. A. B. Banerjee	Food, Nutrition and Environmental Security
89 th	2002	Lucknow	Professor S.S.Katiyar	Prof. A. B. Banerjee Prof. B. Satyanarayana	Health Care, Education and Information Technology
90 th	2003	Bangalore	Dr.K.Kasturirangan	Prof. A. B. Banerjee Prof. B. Satyanarayana	Frontier Science and Cutting Edge Technologies
91 st	2004	Chandigarh	Professor Asis Datta	Prof. B. Satyanarayana Prof. B. P. Chatterjee	Science and Society in the Twenty First Century : Quest for Excellence



Session	Year	Place	President	General Secretaries	Title/Theme
92 nd	2005	Ahmedabad	Professor N.K.Ganguly	Prof. B. P. Chatterjee Prof. S. P. Singh	Health Technology as Fulcrum of Development for the Nation
93 rd	2006	Hyderabad	Dr.I.V.Subba Rao	Prof. B. P. Chatterjee Prof. S. P. Singh	Integrated Rural Development : Science and Technology
94 th	2007	Annamalainagar	Prof.Harsh Gupta	Prof. S. P. Singh Prof. Avijit Banerji	Planet Earth
95 th	2008	Visakhapatnam	Prof.R.Ramamurthi	Prof. Avijit Banerji Dr. Ashok K. Saxena	Knowledge based Society using Environmentally Sustainable Science and Technology
96 th	2009	Shillong	Dr. T. Ramasami	Prof. Avijit Banerji Dr. Ashok K. Saxena	Science Education and Attraction of talent for Excellence in Research
97 th	2010	Thiruvananthapuram	Dr. G. Madhavan Nair	Dr. Ashok K. Saxena (dual charge)	Science and Technology challenges of 21 st Century National perspective
98 th	2011	Chennai	Prof. K.C.Pandey	Dr. Vijay Laxmi Saxena Dr. Manoj Kumar Chakrabarti	Quality Education and excellence in Scientific Research in Indian Universities
99 th	2012	Bhubaneswar	Prof. Geetha Bali	Dr. Vijay Laxmi Saxena Dr. Manoj Kumar Chakrabarti	Science and Technology for Inclusive Innovation – Role of Women
100 th	2013	Kolkata	Dr. Manmohan Singh	Dr. Vijay Laxmi Saxena Dr. Manoj Kumar Chakrabarti	Science for Shaping the Future of India
101 st	2014	Jammu	Prof. Dr. Ranbir Chander Sobti	Prof. Arun Kumar Dr. Nilangshu Bhusan Basu	Innovations in Science & Technology for Inclusive Development
102 nd	2015	Mumbai		Prof. Arun Kumar Dr. Nilangshu Bhusan Basu	Science and Technology for Human Development
103 rd	2016	Mysuru	Dr. Ashok Kumar Saxena	Prof. Arun Kumar Dr. Nilangshu Bhusan Basu	Science and Technology for Indigenous Development in India
104 th	2017	Tirupati	Prof. D. Narayana Rao National Development	Prof. Gangadhar Prof. Premendu P.Mathur	Science and Technology for
105 th	2018	Imphal	Prof. Achyuta Samanta	Prof. Gangadhar Prof. Premendu P. Mathur	Reaching the Unreached Through Science and Technology
106 th	2019	Jalandhar	Dr. Manoj Kumar Chakrabarti	Prof Gangadhar Prof. Premendu P Mathur	Future India: Science and Technology
107 th	2020	Bengaluru	Prof. K. S. Rangappa	Dr. S. Ramakrishna Dr. Anoop Kumar Jain	Science and Technology: Rural Development
108 th	2023	Nagpur	Dr. Vijay Laxmi Saxena	Dr. S. Ramakrishna Dr. Anoop Kumar Jain	Science and Technology for Sustainable Development with Women Empowerment .



Focal Theme of the Congress

Science and Technology for Sustainable Development with Women Empowerment

By the year 2050, it is estimated that our global population will likely reach 9 billion people. And we have to ensure that every single one of these people will be able to enjoy a substantial quality of life without being detrimental to our natural resources & environment. Sustainable Development can be said to be Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

There are 3 primary objectives of Sustainable Development; Economic Growth- building a strong & competitive economy, **Environmental protection** contributing to protecting and enhancing our natural & developed environment and **Social inclusion** supporting strong, vibrant and healthy communities.

To promote sustainable and inclusive development the issues of Science, Technology and Innovation (STI) are paramount. Access to new & appropriate technologies promote steady improvements in living conditions, which can be life saving for most vulnerable populations and drive productivity gains which ensure rising incomes.

It is important that Science, Technology and Innovation (STI) be integrated into public policy goals, giving particular focus to the nexus between STI, culture, education and development. Science, Technology and Innovation (STI) will need to be made more participatory including women, young people and indigenous communities. Boosting the number of women and girls entering careers involving STEM (Science, Technology, Engineering and Maths) is vital to achieving Sustainable Development.

A well-functioning STI ecosystem needs to include an educated workforce; sound research and education infrastructure and linkages between public and private innovation actors; enterprises committed to research and development; as well as a balanced intellectual property rights (IPRs) framework. As the United Nations Task Force on Science, Technology and Innovation noted, innovation and technology are needed to transform countries from reliance on the exploitation of natural resources to technological innovation as the basis for development.

Women have played a significant role in the field of Science since the emergence of modern civilization. Women should be encouraged to bring their vision and leadership, knowledge and skills, views and aspirations into the development agenda from the grassroots to international levels. Science and technology brings economic growth and well-being to people and it is not only the empowerment of women through science and technology, but also the enrichment of science and technology through women's participation.



It is necessary to recognize that the participation of women in science and technology is no longer simply an issue of gender equity: it is also an issue that should be considered in national economic development. Women are both consumers and producers, they can make a difference if they are involved and considered in economic development plans. With science and technology at the heart of economic development, women's participation in science and technology is therefore an essential part of economic development strategies.

Science, Technology and Innovation (STI) can also help women grow business & social enterprise and provide opportunity for greatly improving health outcomes. Science and technology squarely underlie the enjoyment of human - and women's - rights and are intrinsic to sustainable development, citizenship and personal empowerment. It is imperative that we enhance the use of enabling technology, to promote the empowerment of women.

The 108th Indian Science Congress will discuss issues of Sustainable development, Women empowerment and the role of Science & Technology in achieving this in all its dimensions. The very relevance of the topic has its manifestations in the global scenario of digital India- where connectivity and communication skills have a prime major role to play in trading towards goals of sustainability and women empowerment by a scientific as well as technological futuristic approach. In lieu of our honourable Prime Minister Modis' vision and mission of an ' Atmanirbhar Bharat ' , the fact remain that technology has the ability to transform the life style – especially the lives of women towards their self- dependence, educational and participation selves in all domains of competitive development. For ensuring socio-economic development, the quality of higher education coupled with a scientific bent of mind provides greater employment opportunities.

108th ISC will discuss and deliberate on ways to increase the number of women in higher echelons of Teaching, Research and Industry. It will focus on all the issues that are obstacles to the growth of Women in the fields of Science & Technology. **The 108th Indian Science Congress** will find ways to provide Women with equal access to STEM (Science, Technology, Engineering, Mathematics) education, research opportunities, economic participation which are fundamental requirements to fuel holistic growth, renewed economies and achieve sustainable development.



Venue of the 108th Indian Science Congress

ABOUT MAHARASHTRA STATE

Maharashtra is one of the most industrialized and developed states in India. The state is divided into six divisions and thirty-eight districts with the state capital being Mumbai and Nagpur as second/ winter capital. Godavari and Krishna are the two major rivers in the state. The state has played a significant role in the country's social and political scenario and is widely considered as a leading state in agricultural and industrial products. It is equally famous for trade, transport and education. Maharashtra is among the most developed Indian states and continues to be the single largest contributor to the national economy with the presence of Indian film Industry in the State capital along with head quarter of other business houses.

The region that encompasses the state has a very long cherished history. This history dates



Shri Bhagat Singh Koshyari
Hon'ble Chancellor and Governor of Maharashtra

back to the period of pre independent India dominated by the notable dynasty such as the Maurya, the Western Satraps, the Satavahana dynasty, Rashtrakuta dynasty,



Shri Eknath Shinde
Hon'ble Chief Minister of Maharashtra

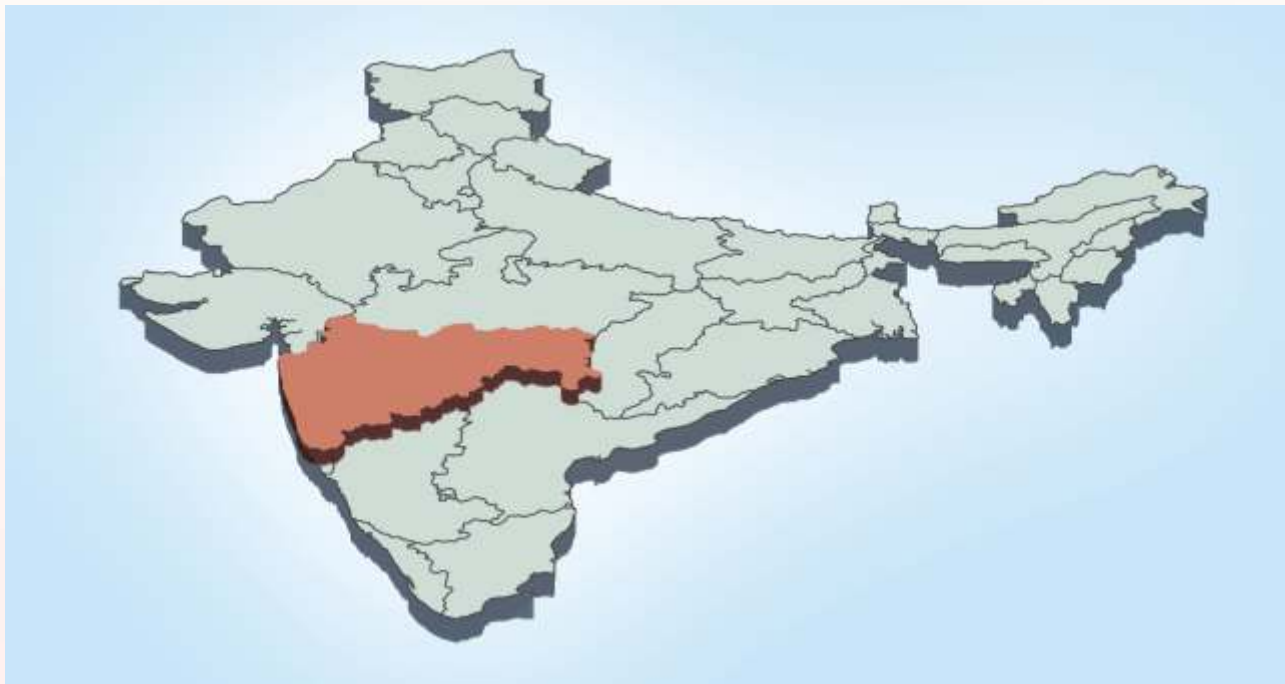


Shri Devendra Fadnavis
Hon'ble Deputy Chief Minister of Maharashtra



Western Chalukyas, the Bahamanis, Deccan sultanates, Mughals, Marathas and British. The Maratha Empire founded by Shri Chatrapati Shivaji Maharaj in 1674. The historic architectural ruins, monuments, tombs, forts, and places of worship left by these rulers are dotted around the state. Maharashtra has always been a land of Saints and warriors, for revolutionary wars “Swarajya” as well as social reforms. Chatrapati Shivaji Maharaj is a very famous warrior and idol of Marathas. The

person who has contributed substantially for making the Constitution of India, Dr. Babasaheb Ambedkar was also from this state. The state is home to five UNESCO World Heritage Sites: Ajanta, Ellora, Elephanta caves, the Chhatrapati Shivaji Maharaj Terminus (formerly Victoria Terminus) and western Ghats. There are some national parks namely Chandoli, Gugamal, Navegaon, Sanjay Gandhi (Borivilli), Todoba, Bhamragarh and Bhimashankar etc.





Venue of the 108th Indian Science Congress

ABOUT NAGPUR CITY

Nagpur, popularly known as the 'Orange City', is one of the fastest growing metropolis and the third largest city after Mumbai and Pune in Maharashtra. The city is located on the eastern part of the state and is the geographical 'center' of India. Nagpur also has a rich history which can be traced back to 8th century BC. Present city Nagpur is originally established by tribal King of Gond dynasty. Also known as the tiger capital of the state, the city has completed 300 years of establishment in the year 2002. The city is also counted amongst the most secure cities of the country; and hence, India's majority gold asset is kept in Nagpur's Branch of Reserve Bank of India. As far as roads, railways and air-flights are concerned, the city is well connected and well served to all the major cities of India. Since ages, it has been a city of cultural and political importance. It is worth mentioning

that the MIHAN is the biggest project of its type concerning economic investments. Interestingly, MIHAN has a Maintenance, Repair and Overhaul facility constructed by Boeing and it is the second such facility in the world after Shanghai.

Nagpur is a hub of different activities such as IT and Technical hubs, different occupations, educational centers, Government establishments and various acclamatory buildings and associations. Nagpur is a culturally rich Indian city with an agglomeration of people from different castes and creed. The city holds a number of events and festivals that interests all the inhabitants of the city, and everyone participates happily. Religious occasions are watched in the city all around the year.





Important Places to Visit

Ambazari lake : is situated near the Southwest border of Nagpur. It is one of the 11 lakes in Nagpur and is the largest lake in the city. The Nag River of Nagpur originates from this lake. This was built in the year 1870, under Bhonsle rule, for supplying water to the city. This lake is behind the University campus and surrounded by mango trees, gaining the name Ambazari as "Amba" means "mango" in Marathi. The lake is beautiful and serene.



Balasaheb Thackeray Gorewada International Zoological Park : in the honour of Late Marathi leader Balasaheb Thackeray (earlier known as the **Gorewada Zoo**) is a zoo which is 08 Km away



from the University. On commission, this is likely to be one of the largest captive Zoo Safari in India with over 1914 Hectares of land adjoining the Gorewada Lake. The Park shall be having various features showcasing Tribal Art, Rescue Centre for Wildlife, Indian Safari, African Safari, Interpretation Centre, Trail of Senses, and Night Safari.

Deekshabhoomi : is a sacred monument of Navayana Buddhism located at Nagpur city in Maharashtra state of India, where B. R. Ambedkar, embraced Buddhism on the day of Vijaya Dashami, 14 October 1956. Deekshabhoomi is a location regarded as a sacred place, pre-nabhoomi (inspiring land) of social revolution and also the first pilgrimage centre of Ambedkarite Buddhism in India.



Dragon Palace Temple : also known as the Lotus Temple of Nagpur, is a Buddhist temple in Kamptee, Maharashtra, India. The temple was established in 1999 with funds from the Japan-based Ogawa Society, a charitable trust. The temple complex encompassing the Dragon Palace houses a carved sandalwood idol that is



associated with the Buddha, and the building is a pilgrimage site for practitioners of the faith. The foundation envisioned the Dragon Palace Temple as both a place for Buddhist education and meditation, as well as a symbol of Indo-Japanese friendship.



Futala Lake : is a lake 200 Meters away from the University. The lake covers 60 acres (24 ha). Built by the Bhosle kings of Nagpur, the lake is known for its coloured fountains. In the evenings, the site is illuminated with halogen lights and Tanga (carriage) rides. The lake is surrounded on three sides by forest and a landscaped beach on the fourth side. It is recently beautified with a world-famous colourful fountain to attract the visitors round the year.



Gorewada Lake : Beautiful bio reserve created around the Gorewada lake and surrounding forest. It is a bird-watcher's paradise. Other than the conveniently placed sitting benches and a gazebo, the place has not been unnecessarily spoiled in the name of 'development for the sake of tourism'. The scenery is breath-taking! It is a place to experience raw nature and various ecosystems that is, the birds, the wetlands, the marine life that is seen at the edge of the lake, bamboo groves, squirrels and at times, large monkeys on the trees, a variety of migratory and local birds. Herons, egrets, ducks, cormorants etc are seen in plenty. This Lake is located almost 10-12 kms from Nagpur.



Japanese Rose Garden : is located near the Civil Lines area of Nagpur city. It is about 4 km northwest of the city. The Japanese rose garden is designed in such a way that people in Japan grow





roses or any type of flower and hence it is called Japanese rose garden. Red and yellow roses are most beautiful here. Some of these are hybrid varieties, some are local. Apart from these there are other green plants and trees as well. Many birds of different species are seen soaring above the clear sky of the Japanese rose garden, while some chirping while sitting on the branches.

Lata Mangeshkar Musical Garden : is located in east Nagpur. There is a fantastic aquarium where many varieties of fishes and rare species are seen. The musical fountains are the major attraction of this place. This garden has a good musical show at evenings. Located in Surya Nagar Colony in East Nagpur, it is exactly opposite to a Durga Maa Temple. The Garden is full of lush green trees and lawn, nice place for doing morning walks and yoga.



Raman Science Centre and Raman Planetarium Complex is an interactive science centre affiliated with Mumbai's Nehru Science Centre. The centre was developed to promote a scientific attitude, portray the growth of science and technology and their applications in industry and human welfare, and hold science exhibits. The centre is named after famous Nobel Prize winner Indian physicist Chandrasekhara Venkata Raman. The Raman Science Centre was inaugurated on 7 March 1992 and the planetarium was started on 5 January

1997. The centre is located opposite Gandhi Sagar Lake in the heart of Nagpur.



Ramtek Temple or Ram Temple : located at Ramtek area of Nagpur which is 45 Kms from Nagpur city and is dedicated to Lord Rama. According to popular belief, Lord Rama rested in this place while he was in exile before he went ahead to win over Lanka. Tek in Marathi means vow and thus Ramtek signifies 'Vow of Lord Rama'. The present temple is believed to be over 400 years old. It is away from the hustle bustle of city life and located inside a fort on a hill. It has a tranquil atmosphere, the mystical surrounding of a fortress and a place of worship so very rich in Mythological value. It is also very popular and revered for its OM structure that is a whopping 350 feet long. The temple is also famous for its notorious yet super smart monkeys roaming around the premises. Cars can go up to the last step post which you need to climb around 60 steps to the temple.





Shri Ganesh Mandir Tekdi : is one of the oldest temples in the city of Nagpur and is one of the most famous too. It is dedicated to Lord Ganesh. The temple is situated at the top of a hill and thus the name of Tekdi Ganesh as tekdi in Marathi means hill. It is an extremely serene place, ideal for those who like to worship in solitude away from the noise of the city. The temple is believed to be constructed over 250 years ago. The idol of Lord Ganesh's head is decorated with gold and has other silver ornaments. The devotees refer to the place as Jagrata Devasthan since pilgrims flock to the place from dawn till midnight. However, it is suggested to visit this place late afternoon to witness the beautiful setting of the sun and the lush greenery along with the cool air of the hilltop.



Swaminarayan Temple : located near Middle Ring road is the largest Swaminarayan temple among over 1,000 temples set up by Swaminarayan Sanstha across the world. It's grand architecture and illuminating hues during the night forms the main attraction. The temple holds regular Satsang programmes and has idols of various deities. The architecture is stunning and had beautiful carvings on the roof. If one goes

just before sunset, the temple looks ever more glorious with the rays shining on it directly.



Tadoba Andhari Tiger Reserve : is a wildlife sanctuary in Chandrapur district of Maharashtra state in India. It is Maharashtra's oldest and largest national park. Created in 1955, the reserve includes the Tadoba National Park and the Andhari Wildlife Sanctuary. The reserve consists of 577.96 square kilometres (223.15 sq mi) of reserved forest and 32.51 square kilometres (12.55 sq mi) of protected forest. Melghat Tiger Reserve (258 Kms), Navegaon Nagzira Tiger Reserve (118 Kms), Pench Tiger Reserve (60.8 Kms) and Bor Wildlife Sanctuary (63 Kms) are some other nearby wildlife sanctuaries.



Zero Mile Stone : is a monument built by British during the Great Trigonometrical Survey of India



in 1907 in Nagpur. Considering it as geographical centre of India, British used this point to measure all the distances. The Zero Mile Stone consists of a pillar made up of sandstone and another small stone representing the GTS Standard Bench Mark, and four stucco horses that were added later. The height of the top of the pillar is 1020.171 feet above mean sea level.



Chikhaldara : is a hill station and a municipal council in Amravati district which is 230 Kms from Nagpur city. Featured in the epic of the Mahabharata, this is the place where Bheema killed the villainous Keechaka in a herculean bout and then threw him into the valley. It thus came to

be known as Keechakadara—Chikhaldara is its corruption. The sole hill resort in the Vidarbha region, it is situated at an altitude of 1118 meters with highest being Vairatpoint 1188 meters and has the added dimension of being the only coffee-growing area in Maharashtra. Chikhaldara has an annual rainfall of 154cm. Temperatures vary from 39°C in summer to 5°C in winter. The best months to visit are from October to June.



It abounds in wildlife, such as tigers, panthers, sloth bears, sambars, wild boar, and rarely seen wild dogs. Close by is the famous Melghat Tiger Project which has 82 tigers. The scenic beauty of Chikhaldara can be enjoyed from Hurricane Point, Prospect Point, and Devi Point.



Rashtrasant Tukadoji Maharaj Nagpur University



The Rashtrasant Tukadoji Maharaj Nagpur University, is one of the largest and oldest Universities of central India and is celebrating its centenary year. Established since 1923, the premises of University are spread over 373 acres which consist of heritage building, 7 lush green campuses with gardens and enriched biodiversity. The University firmly believes, and follows prophecy of Rashtrasant Tukadoji Maharaj who propounds "Hya Bharatat Bandhu-Bhav-Nitya Vasude, de varchasa de" which means may brotherhood prevail in this country, grant us this blessing. As Nagpur being located in the heart of India and has connectivity with every part of the country, RTMNU is preferred by students of other states of the country.

For formal learning, the University boasts of 46 Postgraduate Teaching Departments (PGTD) and

3 Constituent Colleges/Institutions, 503 affiliated colleges offering UG, PG and PhD courses to more than Four lakh students. All departments have independent buildings which are ICT enabled. Around 8 Science departments are UGC-Special Assistance Program (SAP) and DST_FIST recognized. The university indulged into academic collaborations with prestigious institutions like UGC, CSR, DAE, New Delhi, Pennsylvania state university, USA, University of Florida, USA, University of Washington, USA to name a few.

These programs are supplemented with non-formal mode of education to inculcate human values and cover local need based education. They are:

1. Rajiv Gandhi Biotechnology Centre, Nagpur University, Nagpur.





2. Extension activities through life-long learning programme,
3. National service scheme,
4. Dr. Babasaheb Ambedkar chair,
5. Ravindranath Tagore Chair,
6. Shri Chakaradhar Swami Chair,
7. Rashtrasant Tukadoji Maharaj Chair etc .

The three tier library facility of the University is the classic example of its enriched reading culture. The V.B. Kolte Central library of the University, the Narsimharao Digital library and departmental libraries are well equipped with thousands of books along with wide range of national and international journals.





61th Indian Science Congress, 1974, Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur



Sitting (Left to Right)—Dr. B. H. Shastri (Local Secretary), Dr. S. M. Sircar (General Secretary—Hqs.), Dr. (Mrs.) Arubana Sharma, Prof. W. D. West, Prof. D. S. Kothari, Dr. P. B. Meo (Vice-Chancellor), Shri C. Subramanian (Union Minister of Science & Technology), Shri AH Yawar Jung (Chancellor), Dr. (Smt.) Indira Gandhi (Prime Minister of India), Prof. B. S. Mishra (General President), Shri V. P. Nalk (C. M., Maharashtra), Shri A. N. Namjoshi (Education Minister, Maharashtra), Prof. N. E. Dhar, Dr. M. S. Swaminathan, Prof. R. C. Paul (General Secretary—Outstation), Prof. A. K. Saha (Treasurer), and Dr. C. Manode (Local Secretary).

Standing (Left to Right)—Shri P. G. Adyalkar (Local Secretary), Prof. B. N. Singh (President, Section of Botany), Dr. H. E. Chaudhuri (President, Section of Zoology & Entomology), Prof. T. V. Avadhani (President, Section of Statistics), Prof. H. S. Athana (President, Section of Psychology & Educational Sciences), Prof. B. S. Kishwaha (President, Section of Mathematics), Prof. K. L. Malhotra, Prof. S. R. K. Chopra (President, Section of Anthropology & Archaeology), Dr. B. S. Chaturhan, Dr. A. K. Maiti (President, Section of Physiology), Dr. Arun K. Dey, Prof. B. C. Halder (President, Section of Chemistry), Prof. L. S. Kothari (President, Section of Physics), Dr. B. Choudhury (President, Section of Agricultural Sciences), Dr. B. R. Sen Gupta (President, Section of Medical & Veterinary Sciences), Shri Mukti Nath (President, Section of Geology & Geography), Prof. B. D. Tiwari, Prof. P. K. Bose, and Dr. S. K. Mukherjee, Shri P. Sagar (Deputy Secretary, Department of Science & Technology, Government of India), Dr. V. R. Dnyanagar (Local Secretary), and Shri Jivan Datt (President, Section of Engineering & Metallurgy).

[Patchak Br. 6, Mahal, Nagpur.]



Provisional Programme of 108th Indian Science Congress

3-7 January 2023

3 rd Jan	Inauguration		Plenary/Public Lectures/ Endowment Lectures		
4 th Jan	Plenary Lectures	Plenary Lectures	L U N C H	Sectional Programme	Cultural Programme
		Inauguration of Children's Science Congress			
5 th Jan	Plenary Lectures	Inauguration of Tribal Meet		Sectional Programme	Cultural Programme
		Plenary Lectures			
		Inauguration of Science Communicators' Meet			
6 th Jan	Plenary Lectures	Inauguration of Farmers' Meet	Sectional Programme	Cultural Programme	
		Valedictory Session of Women's Science Congress			
7 th Jan	Plenary Lectures	Inauguration of Science & Society	Valedictory Session of Children's Science Congress Programme Valedictory Programme of Science Communicators' Meet	Cultural Programme	
		ISCA Meetings			General Body Programme



108th ISC Sectional Sessions and Symposia

Section	Sectional President	Sectional Recorder	Local Sectional Secretary	Topic for Symposia
Agriculture and Forestry Sciences	Dr. Dipak Ranjan Biswas , Principal Scientist, Division of Soil Science and Agricultural Chemistry, ICAR-Indian Agricultural Research Institute, New Delhi-110 012; Res. : NRC-13, Type-IV, Pusa Campus, ICAR-Indian Agricultural Research Institute, New Delhi-110 012; Tel : 011-25841991 / 25841494 (O); Mobile : 09868554968 / 09718811245 E-mail : dipakbiswas.iari@gmail.com / drb_ssa@yahoo.com	Dr. S. Chandra Nayaka , Professor & Officer In-charge - ICAR (AICRP – Mysore Centre), Pearl Millet Pathology Laboratory, Department of Studies in Biotechnology, University of Mysore, Manasagangotri, Mysore-570 006, Karnataka; Res. : #2265/30, 1 st Main Road, Vinayaka Nagara, Mysore-570 012, Karnataka; Tel : 0821-2419883; Mobile : 09886640778; E-mail : moonnayak@gmail.com / chandranayak@apbotunimysore.ac.in	Dr. Rupesh S. Badere , Associate Professor, Dept. of Botany, MJP Educational Campus, RTM Nagpur University, Amravati Road, Nagpur- 440033 ; Res :123, Narayan, Kothiwan lane, Kelibag Road, Mahal, Nagpur- 440032 ; Mobile No : 9822714733 ; Email : rupeshbadere@gmail.com	<ol style="list-style-type: none"> 1. Technology Innovation for Sustainable Natural Resources Management: Food and Nutrition Security. 2. Women Empowerment for Resilient and Adaptation under changing Paradigm.
Animal, Veterinary and Fishery Sciences	Prof. Kamal Jaiswal , Professor & Head, Department of Zoology, Babasaheb Bhimrao Ambedkar University, Vidya Vihar, Raebareilly Road, Lucknow-226 025; Res. : HIG 138B, Sector E, Aliganj, Lucknow-226 024, U.P.; Mobile : 09415109611 / 08765530611; E-mail : drkamaljaiswal@gmail.com	Dr. Dileep Kumar Gupta , Head, Department of Zoology and Biotechnology, Bareilly College, MJP Rohilkhand University, Bareilly-243 006; Res. : 188, Kanoongoyan, P.O. Shamatganj, Bareilly-243 003, U.P.; Tel : 0581-2544116 / 2548686; Mobile : 09412290544; E-mail : guptagrwal@gmail.com	Dr. Varsha Dhurvey , Professor and Head, Department of Zoology RTM Nagpur University, Nagpur- 440033; Res. : Rachana Madhuban B- 307 B/H Indian Oil Petrol Pump, Koradi road, Mankapur, Nagpur-440030; Mobile No : 9423684768; E-mail : varshadhurvey@yahoo.com	<ol style="list-style-type: none"> 1. Science and Technology for Sustainable Development and Empowerment of Rural Masses, Marginalized Groups, and Women 2. Role of Animal, Veterinary and Fishery Sciences for Security of Food, Health, Livelihood, and Environment
Anthropological and Behavioural Sciences (including Archaeology, Psychology, Education and Military Sciences)	Dr. Manoj Kumar Singh , Department of Anthropology, University of Delhi, Delhi-110 007; Res. : D-7 (29-31), Chhatra Marg, University of Delhi, Delhi-110007; Tel : 011-27667329 (O), 011-27666575 (R); Mobile : 09899756887; E-mail: mksinghanthro@rediffmail.com	Dr. Abhaya Kumar Srivastava , Associate Professor, Department of Military Studies, D.A.V.College, Kanpur-208 001; Res. : Flat - 301, Trimurti Apartment, 128/570, K-Block, Kidwai Nagar, Kanpur-208 011; Tel : 0512-2603022; Mobile : 09451140485; E-mail : kumarabhaya60@yahoo.co.in / kabhaya58@gmail.com	Dr. Preety A Trivedi , Professor and Head, PG Dept of Ancient Indian History Culture and Archaeology, RTMNU ; M.J.P. Academic Campus, Amravati Road, Nagpur – 440033; (Res)B-906, Phase II, Rachana Sayantara, HazariPahad, Nagpur- 440007; Mobile No : 9373109077; Email: trivedipreety5663@gmail.com	<ol style="list-style-type: none"> 1. Anthropological Perspectives of Sustainable Development with Women empowerment 2. Technology and its Inclusive Role in Redefining Education in the Changing World.
Chemical Sciences	Prof. Ranjana Aggarwal , Director, CSIR – National Institute of Science, Technology & Development Studies, Dr.K.S.Krishnan Marg, Pusa Gate, New Delhi-110 012; Res. : V.C.Residence, J.C.Bose University of Technology, YMCA., 6, Mathura Rd., Sector 6, Faridabad-121 006, Haryana; Tel : 011-25846064 / 25843227 (O); Mobile : 09896740740; E-mail : director@nistads.res.in / ranjanaaggarwal@nistads.res.in	Prof. R.P.S. Chauhan , Professor and Head P.G.Department of Chemistry, Magadh University, Bodh Gaya & Dean of Student Welfare, Magadh University, Bodh Gaya-824 234, Bihar; Res. : 70, Ashok Nagar, Gaya-823 001, Bihar; Mobile : 09771622951 / 09399292116 / 09430092376; E-mail : rpschauhangaya@gmail.com	Dr. Niraj Khaty , Professor, Department of Chemistry, Laxminarayan Institute of Technology, Rashtrasant Tukadoji Maharaj Nagpur University, Opposit Bharat Nagar , Nagpur -440033; Res: 77, Sant Abaji Sadan, Sunderban Layout, Narendra Nagar , Nagpur-440015; Mobile-8421316635; Email nirajkhaty1512@gmail.com	<ol style="list-style-type: none"> 1. Chemical Sciences: Challenges Ahead 2. Chemistry and Engineering: this subsection would be able to broadly covers several aspects such as Pharmaceutical Chemistry, Chemical Sciences, Bio Chemical catalysis, Drug Discovery, Energy Material and Energy Devices, Synthesis and catalysis, nuclear Chemistry.



Section	Sectional President	Sectional Recorder	Local Sectional Secretary	Topic for Symposia
Earth System Sciences	Prof. Atul Kumar Varma , Professor, Coal Geology and Organic Petrology Lab., Department of Applied Geology, Indian Institute of Technology (Indian School of Mines), Dhanbad-826 004; Res. : Qr.No.27, Block-II, Teachers Enclave, UGC Area, Indian Institute of Technology (Indian School of Mines), Dhanbad-826 004; Tel : 0326-2235449 (O), 0326-2235549 (R); Mobile : 09431724156; Fax : 0326-2296563; E-mail : atulvarma@hotmail.com / atul@iitism.ac.in	Dr. G.L. Srivastava , Head, Department of Geography, D.A.V.College, Kanpur-208 001; Res. : 117/Q/27, Radha Krishna Housing Society, Sharda Nagar, Kanpur-208 025; Tel : 0512-2584899 (R); Mobile : 09450133213 / 8400924311; E-mail : sgirijesh@gmail.com	Dr. Kirtikumar Ramkrushna Randive , Designation: Professor & HOD, Department of Geology, RTM Nagpur University, RBD Laxminarayana Campus, Law College Square, Amravati Road, Civil Lines, Nagpur - 440 001 (MH), India; (Res): R7 - R8, Kushal Enclave, Kamala Nagar, Amravati Road, Near Wadi Naka, Nagpur - 440 023 (MH), India; Mobile No. : 9850827151; Email: randive101@yahoo.co.in	<ol style="list-style-type: none"> 1. New Paradigms of Geosciences for Sustainable Energy and Mineral Resources Development in Climate Change Framework 2. Space Science and Sustainable Goals 2030.
Engineering Sciences	Prof. B. Santhaveerana Goud , Professor and Former Chairman, Department of Civil Engineering, Bangalore University, Jnana Bharathi Campus, Bangalore-560 056; Res. : No.56/14, KshemaNilaya, 2 nd Main, Binny Layout 3 rd Stage, Vijayanagar 2 nd Stage, Bangalore-560 040, Karnataka; Tel : 080-22961932 (O); Mobile : 09844196400; E-mail : drbsvgoud23@rediffmail.com	NO RECORDER.	Dr. Bharat Apparao Bhavase , Professor and Head, Chemical Engineering Department, Laxminarayana Institute of Technology: Chemical Engineering Department, Laxminarayana Institute of Technology, RTMNagpur University, Amravati Road, Opposite to Bharatnagar, Nagpur 440033: (Res). Flat No. 903, Neelkanth Apartment, Malviy Nagar, Khamla, Nagpur 440025; Mobile No : 9850637449; Email : bharatbhavase@gmail.com	<ol style="list-style-type: none"> 1. Sustainable Engineering / Development 2. Entrepreneurship and Need of Inclusive and Sustainable Innovation.
Environmental Sciences	Prof.(Dr.) Amar Prakash Garg , Vice-Chancellor, Shobhit Institute of Engineering & Technology, (Deemed-to-be-University), NH-58, Modipuram, Meerut-250 110; Res. : D-258, Green Estate, A2Z Colony, Roorkee Road, Modipuram, Meerut-250 110; Tel : 0121-2575091 (O); Mobile : 09675190001 (O), 08077633273 / 09410608377; Fax : 0121-2575724; E-mail: amarprakashgarg@yahoo.com / vicechancellor@shobhituniversity.ac.in	Dr. Arup Kumar Mitra , Associate Professor, P.G.Deptt. of Microbiology, St.Xavier's College, 30, Mother Teresa Sarani, Kolkata-700 016; Res. : 62B, Alipore Road, Kolkata-700 027; Tel : 033-22551276 / 22551295 (O); Mobile : 09831041051; E-mail : drakmitra01@sxccal.edu	Dr. Dadasaheb M. Kokare , Professor in Pharmacology, Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur - 440 033; Res. : Flat No. 304, Rajat Utsav Apartment, Amravati Road, Nagpur - 440 033; Mobile No. : 9850318502; E-mail : kokaredada@yahoo.com	<ol style="list-style-type: none"> 1. Environmental Conflict, Rights of Nature and Human Life 2. Environment and Infectious Diseases.
Information and Communication Science & Technology (including Computer Sciences)	Dr. Paras Nath Singh , Professor (CSE), CMR Institute of Technology, AECS Layout, Kundalahalli, Bangalore-560 037; Res. : S1, Prabhavati Shadows, BTS Layout, Arekere, Bannerghatta Road, Bangalore-560 076; Mobile : 08763240059 / 08825168846; E-mail : drpn.singh@cmrit.ac.in / pnsingh2000@rediffmail.com	Dr. Ujjwal Verma , Faculty, Department of Electronics and Communication Engineering, Former Assistant Director (Research and Consultancy), Manipal Institute of Technology, Manipal Academy of Higher Education (MAHE), Manipal, Udupi-576 104, Karnataka; Res. : B4, Vasudha Comforts, Shanthi Nagar, Manipal-Alevoor Road, Manipal, Udupi-576 104 (Karnataka); Tel : 0820-2924821 (O); Mobile : 09741672469; E-mail : ujjwal.verma@manipal.edu / verma.magadh@gmail.com	Dr. Satish Sharma , Professor and Head, Department of Electronics and Computer Science, RTM Nagpur University, Nagpur – 440033; Res: 104, Neel Tarang Apartment, Telangkheddi Layout, Amravati Road, Ravi Nagar, Nagpur -440033; Mobile No: 9422805298; Email: sharmasat@gmail.com	<ol style="list-style-type: none"> 1. Chain the resources Blocks for Rural Development & Women Empowerment 2. Artificial Intelligence / Multidisciplinary Prospective on Emerging Challenges, Opportunities, Research Practices and Policy for Sustainable Development.



Section	Sectional President	Sectional Recorder	Local Sectional Secretary	Topic for Symposia
Materials Science	Prof.GuduruPrasad , Professor, Department of Physics, University College of Science, Osmania University, Hyderabad-500 007, Telangana State; Res. :Plot No.111, Sri Raghavendra Nagar, Near Annapurna Nagar, Uppal, Hyderabad-500 039; Tel : 040-27200527 (R); Mobile : 09440157980; E-mail : gudurup@gmail.com / gudurup@osmania.ac.in	Prof.D.Velmurugan , Honorary Emeritus Professor, Centre of Advanced Study in Crystallography and Biophysics, University of Madras, Guindy Campus, Chennai-600 025; Res. : Block 2, G4, Queens Park, 9, SSR PankajamSalai, Saligramam, Chennai-600 093; Tel : 044-23762085; Mobile : 09841075847; E-mail : shirai2011@gmail.com	Dr. Sanjay J. Dhoble , Professor, Department of Physics, RashtrasantTukadoji Maharaj Nagpur University, Nagpur-440033, India; Resident : 42, East Samarth Nagar, Near F.C.I.Godown, Nagpur-440015, India; Mobile No; 9822710204; Email: sjdhoble@gmail.com.	<ol style="list-style-type: none"> 1. Novel composite materials for Space, Defense & Energy Application 2. Advanced Materials for Health Monitoring and Skin-Based Wearable Devices
Mathematical Sciences (including Statistics)	Prof.Shishir Gupta , Professor, Department of Mathematics & Computing, Indian Institute of Technology (Indian School of Mines), Dhanbad-826 004 (Jharkhand); Res. : Flat No. : 25, Teachers Enclave, UGC Colony, Indian Institute of Technology (Indian School of Mines), Dhanbad-826 004 (Jharkhand); Tel : 0326-2235464 (O), 0326-2296746 (R); Mobile : 09431725281; Fax : 0326-2296563; E-mail : shishir@iitism.ac.in	Dr.B.S.Mudagi , Ex-Senior Lecturer, Department of Mathematics, Nowrosjee Wadia College, 19, Late Prin.V.K.Joag Path, Pune-411 001, Maharashtra; Res. : Survey Number 37-37/1, Sassoon Road, C-12, Sharadaram Park, Pune-411 001; Tel : 020-26162944 (O); Mobile : 09373991536; E-mail : basaweshwarmudagi@yahoo.co.in	Dr. Ganesh Kedar , Professor and Head, Department of MathematicsRTM Nagpur University, Mahatma Fule Educational CampusAmravati Road Nagpur- 440033; Res: 78, Bhole Nagar Pipla Road, Nagpur- 440034; Mobile No: 9422835129,9511764844; Email:gdckedar@rediffmail.co.in/gdckedar2013@gmail.com	<ol style="list-style-type: none"> 1. Intrinsic Behaviour of Elastic Solid due to Waves and Vibrations 2. Women in Data Analytics, Modeling and Optimization- A Big Red Flag: Bridging the Gender Gap for Sustainable Development.
Medical Sciences (including Physiology)	Prof. (Dr.) Goutam Paul , Pro-Vice-Chancellor, Kalyani University, Kalyani, Molecular Neurotoxicology Laboratory, Department of Physiology, Kalyani University, Kalyani-741 235, Dist. Nadia, W.B.; Res. : B-8, Pubali Garden, P.O. Narendrapur, Kolkata-700 103; Tel : 033-25827315 (O), 033-25828750 / 25828378 (Ext.335) (D), 033-2428710 (R); Mobile : 09433266873; Fax : 033-25828282; E-mail : goutampaul.ku@gmail.com / gpaul.kalyani@rediffmail.com	Dr. HemantaKoley , Scientist E, Deputy Director, Division of Bacteriology, ICMR - National Institute of Cholera and Enteric Diseases, P-33, C.I.T..Road, Scheme XM, Beliaghata, Kolkata-700 010; Res. : A/7, Cluster-IX, Purbachal Housing Estate, GA-Block, Salt Lake City, Sector-III, Kolkata-700 097; Tel : 033-2353-7470 Ext.3015 (JICA); Mobile : 09831031307; Fax : 033-23705066 / 23632398; E-mail : hemantakoley@hotmail.com / koleyh.niced@gov.in	Dr. Pramod Bhujangrao Khedekar , Professor and Head, Department of Pharmaceutical Sciences, RashtrasantTukadoji Maharaj Nagpur University, Mahatma JyotibaFuleyShaikshankParisar Amravati Road, Nagpur - 440 033, Maharashtra, India; (Res) :Plot no. 06, Gajanan Housing Society, Guruprasad Nagar, Dattawadi Nagpur- 440023; Mobile No: 9822472093 Email: pbkhedekarudps@gmail.com	<ol style="list-style-type: none"> 1. Recent Advancement of Research in Physiology and Medicine for Sustainable Development. 2. Economics of Indian Health Industry before Covid and after Covid.
New Biology (including Biochemistry, Biophysics &)	Dr.R.Kavyashree , Principal, Professor & Head of Biotechnology, Co-ordinator –BISEP, The Oxford College of Science, No.32, 17 th B Main, Sector IV, HSR Layout, Bengaluru-560 102; Res. : No.110, Ferns City, Doddanekundi, Marathahalli, Outer Ring Road, Bengaluru-560 037; Tel : 080-61754547/61754548 (O); Mobile : 09886023272; Fax : 080-61754745; E-mail : isc23newbiology@gmail.com / hodbiotechoxford@gmail.com / cavyarun@gmail.com	Dr.P.N.Narase Gowda , Head of the Department of Biotechnology (P.G.), Visveswarapura College of Science, K.R.Road, Bangalore-560 004; Res. : #177, 2G, Main Road, XI Block, Nagarabhavi, IIInd Stage, Bangalore-560 072; Tel : 080-26675575 (O); Mobile : 09886674793; E-mail : pnn_gowda@rediffmail.com	Dr. Archana Moon , Professor, Post Graduate Teaching Department of Biochemistry, RashtrasantTukadoji Maharaj Nagpur University, LIT Premises, Amravati Road, Nagpur-440033, M. S, India; (Res): 501, Apoorva Complex, Mohan Nagar, Nagpur-440001, M. S, India; Mobile No : +91 7798744244; Email : moon.archana@gmail.com	<ol style="list-style-type: none"> 1. Current and Future Trends in Health Care: Women Health 2. Stem Cells and Regenerative Medicine.



Section	Sectional President	Sectional Recorder	Local Sectional Secretary	Topic for Symposia
Physical Sciences	Prof. (Dr.) Suresh Chandra , Deputy Director & Professor, Amity Centre for Astronomy & Astrophysics, Amity Institute of Applied Sciences, Amity University, Sector-125, Noida-201 313, U.P.; Res. : Sector III-A, HIG 21, Rachna, Vaishali, Ghaziabad-201 019; Mobile : 09915519345 / 09818005663; E-mail : schandra2@amity.edu / suresh492000@yahoo.co.in	Dr. Vipin Bahadur Singh , Head, Department of Physics, Udai Pratap (Autonomous) College, Varanasi-221 002, U.P.; Res. : G-4, Block-I, Varuna Enclave, S.2/636, Club Road, Secrole, Varanasi-221 002; Mobile : 09519343388; E-mail : vipinvns680@gmail.com / vipin2_vns@rediffmail.com	Dr. Omprakash P. Chimankar , Professor and Head, Department of Physics Rashtrasant Tukadoji Maharaj Nagpur University, Mahatma Jyotiba Phule Educational Campus Amravati Road Nagpur-440033, Maharashtra India; (Res.): Plot no. 22, Hawra Peth Marg No. 7, Dwardapur, Manewada Ring Road, Nagpur-440027, Maharashtra, India; Mobile No.: 7020696950, 9766969894; Email: opchimankar28@gmail.com / opcrtmnu@gmail.com	<ol style="list-style-type: none"> 1. Contribution of Women in Science 2. Physics and Health care and medicine.
Plant Sciences	Prof. Sunil Kumar Chaturvedi , Professor and Head, Department of Botany, Nagaland University, Lumani-798 627, Dist. Zunheboto, Nagaland; Res. : 206, Arkong Ward, Mokokchung-798 601, Nagaland; Mobile : 09436006204 / 09862747862; E-mail : sunchat1@rediffmail.com / skchaturvedi@nagalanduniversity.ac.in	Dr. L. Rajanna , Professor, Department of Botany, Bangalore University, Jnanabharathi Campus, Bangalore-560 056; Res. : #569, 7 th Cross, North Block, Upkar Residency, Ullal Hobli, Bengaluru-560 056, Karnataka; Tel : 080-22961323; Mobile : 09916028370; E-mail : lrajannabot@gmail.com	Dr. Nitin Manohar Dongarwar , Professor and Head, Department of Botany, Rashtrasant Tukadoji Maharaj Nagpur University, Mahatma Jyotiba Phule Educational Campus Amravati Road Nagpur-440033, Maharashtra India; (Res.): Plot no. 29, Vivekanand Nagar, Khamla Road, Nagpur-440015, Maharashtra, India; Mobile No.: +919923738422; Email: dmnitin26@gmail.com/botanysem2@gmail.com	<ol style="list-style-type: none"> 1. In Situ and Ex Situ Conservation of Land Biodiversity and Sustainability. 2. Sustainability and Health Care Food Security and Climate Change Innovation in Plant Science.



Vigyan Sancharak Sammelan

(Science Communicators' Meet)

An initiative for Science communicators for professional growth, this Sammelan will focus on the theme Science and technology for Sustainable Development with Women Empowerment Participations are invited from outstanding academics, activists, journalists, film maker, scientists, communicators, etc., who are members of the Indian Science Congress Association. Abstract of 100 words along with a brief bio-data must reach the Convener of the Local Chapter of ISCA (Chapter details are available in www.sciencecongress.nic.in) before 10th October, 2022. A Peer group will select promising papers. Short listed entries will be invited to submit a full paper. Fellowship will include travel support to Nagpur and waive off registration fees for participation in the 108th Indian Science Congress. Some entries may be selected for poster presentation and others for oral presentation.

For further details contact :

DR. ANOOP KUMAR JAIN

251 Anandpuri, Kanpur-208 023.

Mobile : 09336035646

Email : anupjainmumbai@gmail.com

anoop.jain1960@yahoo.com

DR. RITA N. WADEWAR

Assistant Professor, Department of Pharmaceutical Sciences,

Rashtrasant Tukadoji Maharaj, Nagpur University,

Mahatma Jyotiba Fuley Shaikshanik Parisar, Nagpur-440033;

Res: L-58, Vasant Nagar, Near Deeksha Bhoomi, Nagpur-440022;

Mobile No: 8007995551;

E-mail: rnwadetwar@gmail.com

Rashtriya Kishore Vaigyanik Sammelan Children's Science Congress

As a part of this great event, the Children Science Congress is organized simultaneously to provide an unique opportunity to children to use their Scientific temperament and knowledge and to quench their thirst for creativity by conducting Scientific experiments. It generally comprises of a three days event which encourages children to visualize science and stimulate their Scientific temperament by giving the school children a unique platform to showcase their innovation and creativity in Scientific projects. You are cordially invited to be a part of Children Science Congress to be hosted by Rashtrasant Tukadoji Maharaj, Nagpur University, Nagpur at the University Campus.

Details for participation in Children Science Congress is given:

1. There is no registration fee.
2. ID card will be provided at the venue.
3. Accommodation (if necessary) will be given.
4. Food coupons will be provided at the venue.

The event will comprise of invited talks by renowned scientists, science exhibitions, workshop, competitions and scientific quizzes for students.

For further details contact:

DR. ANOOP KUMAR JAIN

251 Anandpuri, Kanpur-208 023.

Mobile : 09336035646

Email : anupjainmumbai@gmail.com

anoop.jain1960@yahoo.com

DR. NISHIKANT A. RAUT

Professor, Department of Pharmaceutical Sciences & Director Department of Lifelong Learning & Extension, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur-440033 INDIA; (Res.): 'Kalpasiddhi', Plot No. 20, ChikhaliGruhNirman Sanstha,

Air Force Civilians' Society, Dabha, Nagpur-440023;

Mobile No. +919422803768; Email.: rautna.udps@gmail.com



Science Exhibition

The achievements of Science and Technology should ultimately benefit the Society at large. In this regard, Indian Science Congress serves as a platform towards inspiring the students, academicians and the common man to appreciate the value of science and to cultivate scientific attitude. The Science Exhibition will be one of the major events of the 108th Indian Science Congress. The prominent developments, major achievements and the significant contributions largely of Indian Science and Technology to the Society will be showcased by leading scientific institutions which are expected to participate in the Exhibition. This Exhibition will focus on India's development, especially the country's recent emergence as a major power in different sections of the Society, especially the large student community. This exhibition will provide a wealth of learning to all the visitors, the student community being the special focus.

For further details contact:

DR. ANOOP KUMAR JAIN

251 Anandpuri, Kanpur-208 023.

Mobile : 09336035646

Email : anupjainmumbai@gmail.com

anoop.jain1960@yahoo.com

DR. SANTOSH KASBEKAR

Superannuated as Former Principal incharge,

Plot No 8 Nehru Nagar, Near Surendra Nagar

Nagpur 440015, Maharashtra;

Mobile No: 9823038383; Email santosh.kasbekar@gmail.com

Women's Science Congress

The 108th Indian Science Congress is organizing a special programme for women on Science and technology for Sustainable Development with Women Empowerment. This programme is intended to showcase the contribution of women in Science and Technology. Renowned women scientists will be delivering lectures in this session. The session will also deliberate on the role of Science and Technology in empowering and ways and means of tapping their potential as innovators, implementers of innovations in addition to being beneficiaries of innovators.

Details for the participation in Women Science Congress is given below:

- Registered Women members can participate.
- There is no separate registration fee.

For further details contact:

DR. ANOOP KUMAR JAIN

251 Anandpuri, Kanpur-208 023.

Mobile : 09336035646

Email : anupjainmumbai@gmail.com

anoop.jain1960@yahoo.com

DR. KALPANA PANDE,

Retired, Department of Mathematics, VMV Commerce,
JMT Arts and JJP Science college, Wardhaman Nagar, Nagpur;

Res: Plot No. 248, Hanuman Nagar, Nagpur-440009;

Mobile No: 9923754561; Email: kalpanappande@gmail.com



ISCA Awards

Indian Science Congress Association (ISCA) has instituted many Awards to honour and encourage scientists in India mainly through special endowments received from individuals and groups and also from its own funds. The concept of Awards was started from 1965 onwards and as of date, there are more than 40 Awards/Lectures/Fellowship :

Sl.No.	Name of the Award/Lecture	Year
1.	Asutosh Mookerjee Memorial Award →	1988-89
2.	C.V.Raman Birth Centenary Award →	1989-90
3.	Srinivasa Ramanujan Birth Centenary Award →	1989-90
4.	S.N.Bose Birth Centenary Award →	1994-95
5.	S.K.Mitra Birth Centenary Award →	1994-95
6.	Birbal Sahani Birth Centenary Award →	1994-95
7.	S.S.Bhatnagar Memorial Award →	1997-98
8.	D.S.Kothari Memorial Award →	1997-98
9.	Vikram Sarabhai Memorial Award →	1997-98
10.	M.K.Singal Memorial Award →	2009-2010
11.	Prof.R.C.Mehrotra Memorial Life Time Achievement Award →	2005-2006
12.	Jawaharlal Nehru Birth Centenary Award →	1989-90
13.	B.C.Guha Memorial Lecture →	1965-66
14.	G.P.Chatterjee Memorial Award →	1981-82
15.	Millennium Plaques of Honour	2000-2001
16.	Excellence in Science and Technology Award →	2004-2005
17.	Jawaharlal Nehru Prize →	1998-99
18.	Professor R.C.Mehrotra Commemoration Lecture – Chemical Sciences →	2005-2006
19.	Prof. Sushil Kumar Mukherjee Commemoration Lecture – Agriculture and Forestry Sciences →	1999-2000
20.	Prof. S.S.Katiyar Endowment Lecture – Chemical Sciences / New Biology →	2003-2004
21.	Prof. Archana Sharma Memorial Award – Plant Sciences →	2010-2011
22.	Prof. G.K.Manna Memorial Award – Animal, Veterinary and Fishery Sciences →	2010-2011
23.	Dr. V. Puri Memorial Award – Plant Sciences →	2011-2012
24.	Prof. William Dixon West Memorial Award – Earth System Sciences →	2004-2005
25.	Professor Hira Lal Chakravarti Memorial Award – Plant Sciences →	1984-85
26.	Pran Vohra Award – Agriculture and Forestry Sciences →	1989-90
27.	Professor Umakant Sinha Memorial Award – New Biology →	1991-92
28.	Dr.B.C.Deb Memorial Award for Soil/Physical Chemistry →	1994-95
29.	Dr.B.C.Deb Memorial Award for Popularisation of Sciences →	1994-95
30.	Prof.R.C.Shah Memorial Lecture – Chemical Sciences →	1995-96
31.	Prof.(Mrs.) Anima Sen Memorial Lecture – Anthropological & Behavioural Sciences →	2000-2001
32.	Dr.(Mrs.) Gouri Ganguly Memorial Award for Young Scientist – Animal ,Veterinary and Fishery Sciences →	2002-2003
33.	Prof.Dr.(Mrs.) Dharitri (Mitra) Tarafdar Memorial Award for Zoology / Entomology / Microbiology – Animal , Veterinary and Fishery Sciences →	2021-2022
34.	Asutosh Mookerjee Fellowship for 2023-2024	Last date 15 th July, 2022
35.	ISCA Fellows	Last date 10 th September, 2022
36.	Infosys Foundation—ISCA Travel Award	Last date 15 th November, 2022



Young Scientist's Awards Programme

To encourage Young Scientists, The Indian Science Congress Association has introduced a number of awards in different disciplines. These awards carry a sum of ₹ 25,000/- besides a Certificate of Merit.

1. Applications are invited from members (Life & Annual) of the Association who have paid their subscription on or before **July 15, 2022**. The upper age limit of the candidates for the award is 32 years as reckoned on **December 31, 2022 (born on and after January 01, 1991)**.
2. Four copies of the abstract (not exceeding 100 words) along with four copies of full length paper must reach the office of the General Secretary (Membership Affairs) not later than **August 16, 2022**. At the top of each copy of the paper and its abstract, the name of the Section under which the paper is to be considered should be indicated. For details of Sections see <http://www.sciencecongress.nic.in/html/paper/presentations.php>
3. Along with the Four copies of paper, Four copies of the Application Form (to be downloaded from ISCA website (http://www.sciencecongress.nic.in/html/young_sc_programme.php) with brief bio-data of the candidate (not exceeding 2 pages), list of publications, with copies of reprints of already published papers if any and a soft copy of the duly filled application form with scanned copies of enclosures (excluding reprints), full length paper and abstract in MS Word (not PDF) along with bio data in the form of a CD must also be sent simultaneously along with the hard copies.
4. The Paper submitted must be a **single author paper** and the research work should have been carried out in India and this has to be certified by the Head of the Institution from where the candidate is applying.
5. The candidate should give an undertaking that the paper being submitted has not been published in any journal or presented in any other Conference / Seminar / Symposium or submitted for consideration of any award.
6. A Young Scientist can present only one paper in any one Section (and not a second paper on the same or any other topic in any other Section).
7. A person who has already received Young Scientist Award in any section once will not be eligible to apply for the above Award in the same or any other section.
8. Incomplete Applications will not be considered.
9. The papers submitted will be subjected to verification for authenticity.
10. Full length paper will be evaluated by experts and the selected Young Scientists (maximum of six) in each section will be invited to make oral presentation of their paper during 108th Indian Science Congress. The selected candidates will be provided admissible travelling allowances by ISCA.
11. The final selection for the Awards will be made by a duly constituted committee and the awards will be given during the Valedictory Session of 108th the Indian Science Congress session to be held in Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur on January 7, 2023.
12. Applications submitted for the above award will not be returned.
13. The last date for receiving papers at ISCA Headquarters is **August 16, 2022**.

All correspondences should be made to: The General Secretary (Membership Affairs), The Indian Science Congress Association, 14, Dr. Biresw Guha Street., Kolkata-700017. Tel. Nos. (033) 2287-4530/2281-5323, Fax No. 91-33-2287-2551, Email: es.sciencecongress@nic.in, website: <http://www.sciencecongress.nic.in>



ISCA Best Poster Award Programme

To encourage Scientists, The Indian Science Congress Association has instituted two Best Poster Awards in each Section. These awards carry a sum of ₹.5,000/- besides a Certificate of Merit.

1. Applications are invited from members (Life, Annual & Student) of the Association who have paid their subscription on or before **July 15, 2022**.
2. Four copies of full length paper along with four copies of the abstract (not exceeding 100 words) must reach the office of the General Secretary (Membership Affairs) not later than **September 15, 2022**. At the top of each copy of the paper and its abstract, the name of the Section under which the paper is to be considered should be indicated. For details of Sections see http://www.sciencecongress.nic.in/html/paper_presentations.php
3. Along with the Four copies of paper, Four copies of the Application Form (to be downloaded from ISCA website <http://www.sciencecongress.nic.in>) with brief bio-data of the candidate (not exceeding 2 pages), full length paper, abstract in the form of a CD must also be sent simultaneously along with the hard copies.
4. The number of authors of each poster submitted for the award shall be limited to two only. **The first author of the poster shall be the presenting author. Both the authors should be the members of the Association and have paid their subscription on or before 15th July, 2022.**
5. The research work should have been carried out in India and this has to be certified by the Head of the Institution from where the candidate is applying.
6. The candidate should give an undertaking that the paper being submitted has not been published in any journal or presented in any other Conference / Seminar / Symposium or submitted for consideration of any award.
7. A scientist shall submit only one poster in any one Section (and not a second poster on the same or any other topic in any other Section) for consideration for poster presentation award.
8. A person who has already received ISCA Best Poster Award in any section once will not be eligible to apply for the above Award in the same or any other section.
9. Incomplete Applications will not be considered.
10. Full length papers will be evaluated by experts and twenty posters in each section will be selected for presentation during 108th Indian Science Congress.
11. The final selection for the Awards will be made by a duly constituted committee and the awards will be given during the Valedictory Session of 108th Indian Science Congress session to be held in Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur on **January 7, 2023**.
12. Applications submitted for the above award will not be returned.
13. The last date for receiving applications for the above award at ISCA Headquarters is **September 15, 2022**.

All correspondences should be made to:

The General Secretary (Membership Affairs), The Indian Science Congress Association, 14, Dr. Biresh Guha Street, Kolkata-700017, Tel. Nos. (033) 2287-4530/2281-5323, Fax No.91-33-2287-2551, E-mail: es.sciencecongress@nic.in, Website: <http://www.sciencecongress.nic.in>



Presentation of Papers (Oral/Poster)

1. All papers to be submitted for presentation at the 108th Science Congress must be sent to the Concerned Sectional Presidents. Each paper must be accompanied by *three copies* of abstracts (within 100 words, without any sketches, tables, etc.) and a copy of the *full paper*. The name of the Section where the paper is to be presented should be indicated. The model format for abstract along with addresses of Sectional Presidents are given under 108th ISC Sectional Sessions and Symposia (page 34-37, 44).
2. Each author is entitled to submit only two papers.
3. All authors must be members of ISCA. Corresponding author must give a declaration that authors/co-authors are members of ISCA or will become members of ISCA before the Session.
4. Papers should reach on or before **September 15, 2022**. The abstracts of these papers if approved will be printed in Part II of the Proceedings of the 108th Science Congress. Papers (along with abstracts) received after **September 15, 2022** will not be considered.
5. Contributed papers would be presented primarily by way of posters. Authors of the accepted papers will be advised by the concerned Sectional Presidents about preparation of posters. Size of each poster should be **1 meter X 1 meter** and should be neatly prepared which can be read from a distance of 3 feet.

Delegates are requested to register with the 108th ISC Secretariat using the prescribed registration form as early as possible.

The delegates can also register through website: www.isc2023.org

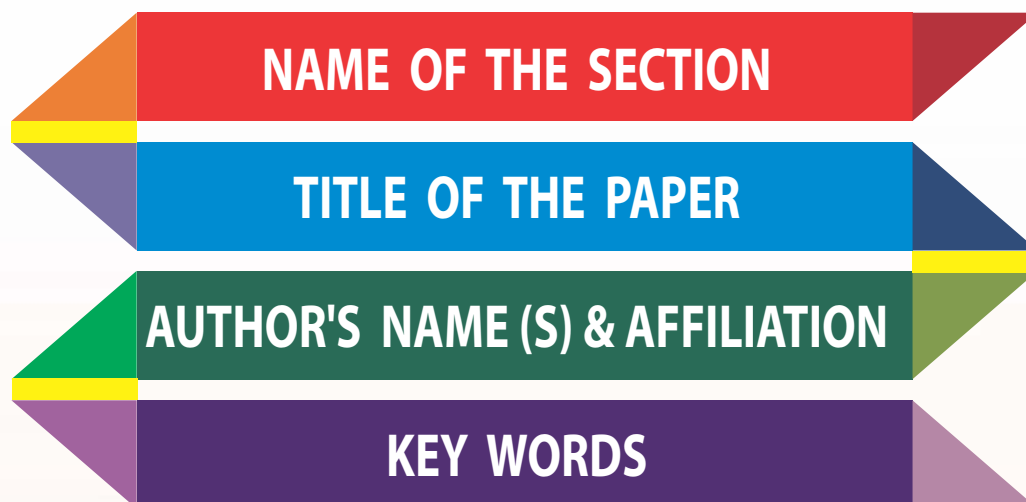
Note:

All participants kindly note that they should collect their Participation / Paper Presentation Certificate during the session of Science Congress only.

In case unable to collect their certificates during the session then it should be requested for the same within 2023 only. Then after no such requests will be considered for issuing the Certificates.



Model Format For Abstract



A B S T R A C T

There are 14 Sections at present, viz.

1. Agriculture and Forestry Sciences
2. Animal, Veterinary and Fishery Sciences
3. Anthropological and Behavioural Sciences (including Archaeology, Psychology, Education and Military Sciences)
4. Chemical Sciences
5. Earth System Sciences
6. Engineering Sciences
7. Environmental Sciences

8. Information and Communication Science & Technology (including Computer Sciences)
9. Materials Science
10. Mathematical Sciences (including Statistics)
11. Medical Sciences (including Physiology)
12. New Biology (including Biochemistry, Biophysics & Molecular Biology and Bio-technology)
13. Physical Sciences
14. Plant Sciences



Registration Guidelines

All authors must be the members of ISCA; corresponding authors must give a declaration that the authors/co-authors are members of ISCA or will become members of ISCA before the session. Delegates are requested to register with the 108th ISC Secretariat using the prescribed online registration form as early as possible by visiting the website : www.isc2023.org only.

Registration	Member		Student Member	
	Indian	Foreign	Indian	Foreign
Early Registration (on or before 30 th November 2022) (without accommodation)	₹ 2000	\$ 150	₹ 1200	\$ 75
Late Registration* (after 30 th November 2022) (without accommodation)	₹ 2500	\$ 500	₹ 1500	\$ 100
Spot Registration at the venue (without accommodation)	₹ 3000	\$ 600	₹ 2000	\$ 250

* After 30th November, 2022 accommodation will not be guaranteed.

The Registration Fee is as follows:

1. For Senior Scientists/Delegates (of age 65 years or above) the organizing committee offers 50% concession in the Registration fees.
2. The Registration Fee (paid on or before 30th November, 2022) covers participation in the 108th ISC, the Congress kit, one set of Food Coupons valid from 3rd January morning to 7th January night.
3. For registered student delegates modest accommodation will be provided on shared basis.
4. For accompanying person(s), the charges will be ₹1500/- for Indian and \$100 for Foreign per head (of age 12 years or above).

They will not be entitled with the Congress kit. Accompanying persons of Sectional Presidents/Recorders/Invited speakers have to register for the congress.

5. Students applying for registration should invariably enclose a certificate about their bonafide studentship from the competent authority of the College/University.



Registration Fee Payment Details

Account Details for Money transfer NEFT/RTGS (Inter Bank Transfer)

Account Name	108 TH INDIAN SCIENCE CONGRESS RTMNU
Ac Number	002888700000547
Cust id	22589544
Swift Code	YESBINBB
MICR Code	440532002
Branch	Civil Lines, Nagpur

- The delegates can also register through website: <http://isc2023.org>
- Payment can be made using Debit Card & Credit Card while registering online.
- Money transfer can be done through Internet Banking.
- Payment through Demand Draft, multicurrency account payee cheque should be drawn in favour of "108 TH INDIAN SCIENCE CONGRESS RTMNU" payable at Nagpur.
- Please write your name and address on the back of the Bank Draft without fail and attach it with the registration form and also enclose two stamp size photographs.
- Foreign Remittance can be done through MICR code and Swift code.
- Students are requested to enclose their Photo ID or Institutional ID.

Address for Correspondence:

108th ISC-2023

Director, Innovation Incubation and Linkages,
Rashtrasant Tukadoji Maharaj Nagpur University,
Mahatma Jyotiba Phule Educational Campus, Amravati Road
Nagpur-440033, Maharashtra
Email:- isc108rtmnu@gmail.com
Tel: 9422840360, 8788956008, 9011323123
Website: www.isc2023.org



Registration Request Form

Photo

Personal Particulars

First Name Surname

Gender: Male Female

Date of Birth:

Designation:

Affiliated Institution Address:

Mailing Address

City: State: Country:

Pin Code: Tel. (ISD/STD code):

Fax: Mobile: Email:

Nationality: Indian NRI Foreign

Passport Details (Only for Foreigners) NRI

Nationality: Passport No:

Date of Issue: Place of Issue: Validity Date:



ISCA MEMBERSHIP DETAILS

ISCA Membership No.:

If not a Member, Please indicate :

Non-Member Applied for Membership

If applied for membership, specify the membership type :

Life Annual Sessional Student

CATEGORY OF PARTICIPATION

- Invited Speaker
- Student
- Council Member
- Chapter Convener
- Awardee
- Senior Scientist (evidence to be submitted)
- Recorder
- Delegate
- Other (Please Specify)

Are you submitting a paper : Yes / No If yes, Tick sections where paper(s) submitted)

- ◆ Agriculture & Forestry Sciences
- ◆ Information and Communication Science & Technology (including Computer Sciences)
- ◆ Animal, Veterinary & Fishery Sciences
- ◆ Materials Science
- ◆ Anthropological and Behavioural Sciences (including Archaeology, Psychology, Education and Military Sciences)
- ◆ Mathematical Sciences (including Statistics)
- ◆ Chemical Sciences
- ◆ Medical Sciences (including Physiology)
- ◆ Earth System Sciences
- ◆ New Biology (including Biochemistry, Biophysics & Molecular Biology and Bio-Technology)
- ◆ Engineering Sciences
- ◆ Physical Sciences
- ◆ Environmental Sciences
- ◆ Plant Sciences



Accommodation Request Form

Registration ID :

Name :

Accompanying Person (Spouse & Kids) Spouse : Kids:

Arrival Date : Time :

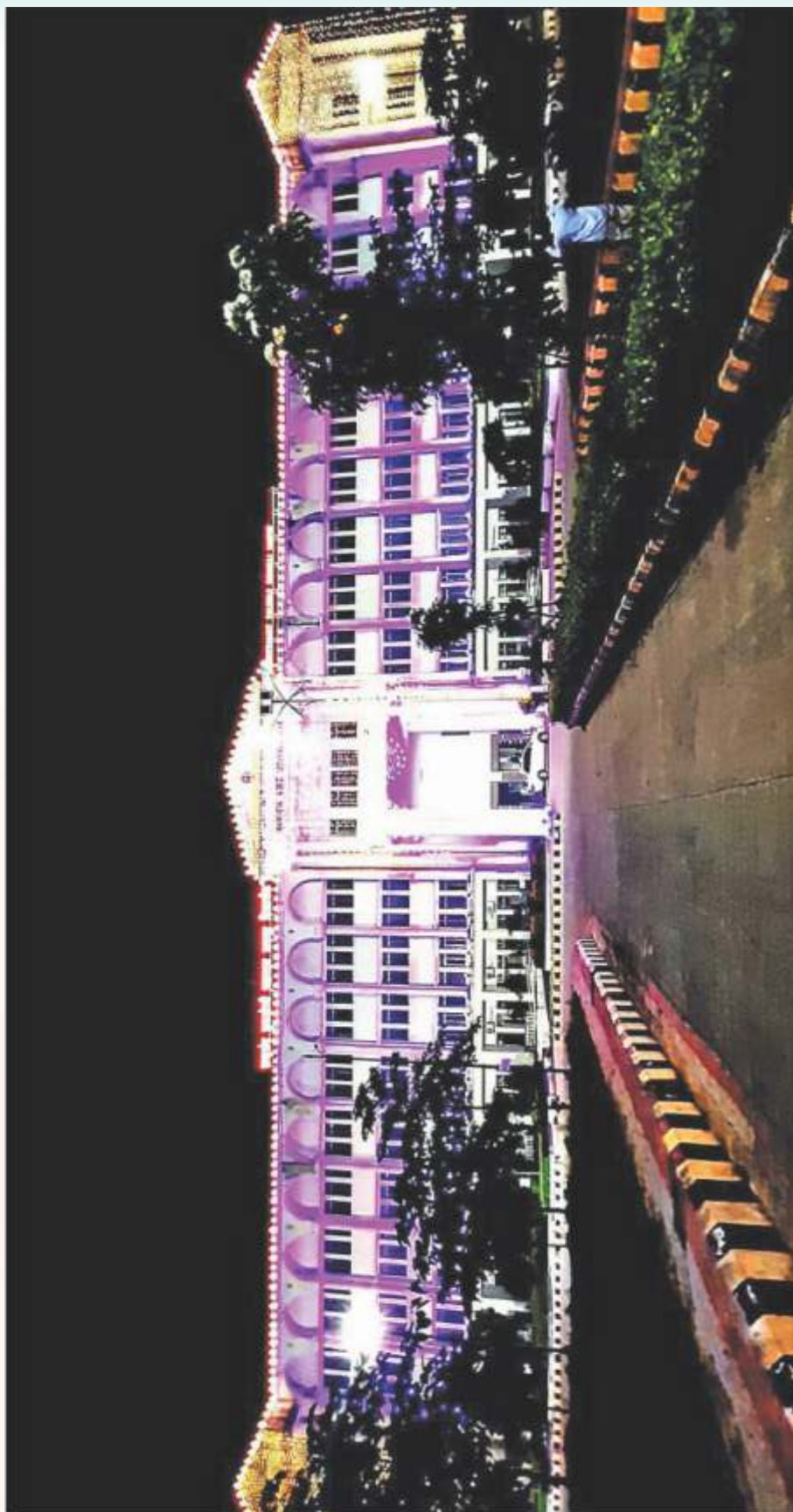
Departure Date : Time :

Indicate the category of accommodation preferred (rates mentioned are only indicative)

Sl. No.	Type	Occupancy	Tariff/Day	Advance Booking Amount	Booking Date		No. of Days	No. of Rooms Required
					From	To		
1	Five Star	Single/Double	INR 7000-12,000					
2	Four Star	Single/Double	INR 5500-8000					
3	Three Star	Single/Double	INR 3500-6000					
4	Two Star	Single/Double	INR 2500-4000					
5	Budget Hotel	a)Single/Double b)Single/Double	INR 2000-3500 INR 1500-3000					
6	Guest House (two categories)	Single/ Double Accommodation	INR 1200-2500					
7	MTDC Guest house	Single/ Double	INR 2000-3500					
8	Hostel	Single/ Double	INR 500-1000					
9	Dormatory	Single/ Double	INR 350-1000					

Note:

- Accommodation can be arranged in the Hotels at Nagpur only on receipt of advance payment for a minimum of two days on first come first serve basis.
- Accommodation can't be guaranteed after 30th November 2022.
 - Hotel booking is available on first come first serve basis and subject to advance payment directly to the hostel mentioned on 108 ISC website.
 - Shuttle service will be available on fixed timing for movement from hotel to campus in morning and campus to hotel in the evening.
 - All shared Rashtrasant Tukadoji Maharaj Nagpur University hostel accommodation is available on first cum first serve basis for conference period i.e. from the morning of 2nd January 2023 to 12:00 Noon of 8th January 2023.
 - In case any delegate required Rashtrasant Tukadoji Maharaj Nagpur University Hostel accommodation more than mentioned conference period, then they have to register for the same separately as per applicable terms and conditions.
 - All delegates, senior citizen, family member (spouse/ward) opting for Rashtrasant Tukadoji Maharaj Nagpur University Hostel accommodation on sharing basis has to pay 1000 INR per head for congress period (either registered for all or for partial congress days), irrespective of the allocated room occupancy type.



Jamnalal Bajaj Administrative Building, Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur



Travel Request Form

Full Name (in CAPS): Prof./Dr./Mr./Mrs./Ms.

Do you need a pickup or drop: Yes No Airport / Railway Station

Arrival Date: (DD/MM/YYYY) Time:

Return Date: (DD/MM/YYYY) Time:

Payment Details to be Enclosed

Registration fee ₹ Advance of ₹ Accommodation Total ₹

Demand Draft

DD No: Dated: Amount: Bank:

Multi City Account Payee Cheque

Cheque No: Date: Amount: Bank:

Money Transfer NEFT/RTGS

Bank name: Branch Amount: Date

Other General Information

Food Preferred Vegetarian Non-Vegetarian

Date & Place:

Signature



Tour Packages

OPTION I : ONE DAY CITY TOUR (LOCAL SIGHTSEEING)

Places to be covered (Departure 0900 hrs – 1600 hrs Arrival)

- a) Dr. Hedgewar Memorial, Reshimbag – Nagpur
- b) Dr. Hedgewar Home, Mahal – Nagpur
- c) Swami Narayan Temple, Wathoda - Nagpur



Swami Narayan Temple

Transport cost (in INR) (Min distance 250 km) Non AC (January)

Indica (03 pax)	Innova (6 pax)	Tavera (8 pax)	Tempo Traveller (12 pax)	Bus (30 pax)	Bus (45 pax)
3300	4000	4500	9000	14000	18000

OPTION II : ONE DAY CITY TOUR (LOCAL SIGHTSEEING)

Places to be covered (Departure 0900 hrs – 1700 hrs Arrival)

- a) Ramtek Gad Mandir, Tq. Ramtek – Nagpur
- b) Kalidas Memorial, Tq, Ramtek – Nagpur
- c) Vakatak Temple, Tq. Ramtek - Nagpur
- d) Yadav Temple, Tq. Ramtek - Nagpur



Yadav Temple

Transport cost (in INR) (Min distance 250 km) Non AC (January)

Indica (03 pax)	Innova (6 pax)	Tavera (8 pax)	Tempo Traveller (12 pax)	Bus (30 pax)	Bus (45 pax)
3600	4200	4800	10000	15000	18000



OPTION III : ONE DAY CITY TOUR (LOCAL SIGHTSEEING)

Places to be covered (Departure 0800 hrs – 1900 hrs Arrival)

- Dr. Babasaheb Ambedkar Memorial Deekshabhumi – Nagpur
- Mansar Excavation Site – Tq. Ramtek, Nagpur
- Dragon Temple Palace – Tq. Kamptee, Nagpur
- Naglok- International Buddhist Training Centre – Nagpur



Mansar Excavation Site

Transport cost (in INR) (Min distance 250 km) Non AC (January)

Indica (03 pax)	Innova (6 pax)	Tavera (8 pax)	Tempo Traveller (12 pax)	Bus (30 pax)	Bus (45 pax)
3200	4500	5000	12000	18000	20000

OPTION IV: ONE DAY CITY TOUR (LOCAL SIGHTSEEING)

Places to be covered (Departure 0900 hrs – 1800 hrs Arrival)

- Raman Science Centre, Gandhisagar Lake, Nagpur
- Central Museum, Civil Lines, Nagpur
- Botanical Garden, Wayusena Nagar, Nagpur
- Futala Lake, Musical Fountain Show - Nagpur



Futala Lake

Transport cost (in INR) (Min distance 250 km) Non AC (January)

Indica (03 pax)	Innova (6 pax)	Tavera (8 pax)	Tempo Traveller (12 pax)	Bus (30 pax)	Bus (45 pax)
3200	4200	4800	10000	15000	18000



OPTION V : ONE DAY JUNGLE SAFARI TOUR

Places to be covered (Departure 0800 hrs – 1900 hrs Arrival)

- a) Pench Tiger Reserver, Tq. Ramtek – Nagpur (80 km)

or

- a) Umred-Karahandla Tigre Reserve, Tq, Umred – Nagpur (70 km)

or

- a) Nawegaon-Nagzira Tirger Reserve, Gondia (120 km)



Umred-Karahandla Tigre Reserve

Transport cost (in INR) (Min distance 250 km) Non AC (January)

Indica (03 pax)	Innova (6 pax)	Tavera (8 pax)	Tempo Traveller (12 pax)	Bus (30 pax)	Bus (45 pax)
3500	5000	6000	14000	20000	28000

The Jungle Safari for 6 person = Rs. 4000

OPTION VI: (01 Night/02 Day): CHIKHALDARA or LONAR or MARKANDA TEMPLE

Places to be covered (Departure 0800 hrs – 1900 hrs Arrival)

- a) Rashtra Sant Tukdoji Maharaj Asrhrm – Mozari Amravati

- b) Chikhaldara Hill Station – Amravati

or

- a) Lonar Crator – Buldhana

or

- a) Markanda Temple - Gadchiroli



Lonar Crator – Buldhana

Transport cost (in INR) Non AC (January)

Indica (03 pax)	Innova (6 pax)	Tavera (8 pax)	Tempo Traveller (12 pax)	Bus (30 pax)	Bus (45 pax)
12000	14000	18000	28000	42000	55000



OPTINON VII : (02 Night / 03 Days): AJANTA-ELLORA (UNESCO'S HERITAGE SITE)

Places to be covered (Departure 0800 hrs – 1900 hrs Arrival)

a) Ajanta World Heritage

or

a) Ellora /Pitalkhora Heritage



Ellora /Pitalkhora Heritage

Transport cost (in INR) Non AC (January)

Indica (03 pax)	Innova (6 pax)	Tavera (8 pax)	Tempo Traveller (12 pax)	Bus (30 pax)	Bus (45 pax)
18000	24000	28000	42000	65000	90000

OPTINON VIII: (02 Night / 03 Days) : SANCHI-VIDISHA or SIRPUR HERITAGE SITES

Places to be covered (Departure 0800 hrs – 1900 hrs Arrival)

a) SANCHI - VIDISHA – SATDHARA –
SONORI – ANCIENT STUPAS

or

a) SIRPUR HERITAGE SITES



SIRPUR HERITAGE SITES

Transport cost (in INR) Non AC (January)

Indica (03 pax)	Innova (6 pax)	Tavera (8 pax)	Tempo Traveller (12 pax)	Bus (30 pax)	Bus (45 pax)
16000	20000	25000	45000	65000	80000



ISCA Membership and Privileges of Members

Membership of the Association is open to person with Graduate or equivalent Academic Qualifications and interested in the advancement of science in India.

1. Annual Member: A person willing to be enrolled as new Annual Member has to pay an annual subscription of ₹ 200/- along with an admission fee of ₹ 50/-* (for foreign ** U.S.\$ 70) only. The annual subscription of a Member shall become due on the 1st April of each year. Anyone who fails to pay the subscription on or before the 15th July in any year shall lose the right of voting and /or holding any office of the Association for that year. A member failing to pay the annual subscription by the end of March of the following year shall cease to be a Member. Annual members can renew their Membership without paying the admission fee in the next year by remitting subscriptions in time i.e. within 15th July. Members may contribute papers for presentation at the Science Congress. They will receive free of cost, reprints of the Proceedings of the Session of any one section of their interest and also the bi - monthly journal of the Association "Everyman's Science" for that year only. For Renewal of Membership please download the form from ISCA website.

2. Sessional Member: If for some reasons, Annual Members fail to renew their Membership by remitting subscription prior to 15th July each year, their Membership for the year would be restricted to Sessional Membership without voting right. Sessional Member has to pay ₹ 200/- (for foreign \$50). A Sessional Member shall have the right to present paper/poster at the session of the congress of which he/she is a member. A Sessional Member shall not be eligible to participate in the voting process. A Sessional member shall not be eligible to participate in the Business meetings of the Sections and the General Body.

3. Student Member: A person studying at the under - graduate level may be enrolled as a Student Member by paying an annual subscription of ₹ 100/- **only provided his/her application is duly certified by the Principal/Head of the Institution/Department.** A student member shall have the right to submit papers for presentation at the Session of the Congress of which he /she is a member, provided such papers be communicated through a Member or an Honorary Member of the Association. He/she shall not have the right to vote or to hold any office. A student member shall not be eligible to participate in the Business meetings of the Sections and the General Body.

4. Life Member: A Member may compound all future annual subscriptions by paying a single sum of ₹ 2000/- (for foreign** U.S.\$ 500) only. Any person who has been continuously a member for 10 years or more, shall be allowed a reduction in the compounding fee of ₹ 50/- for every year of such membership, provided that the compounding fee shall not be less than ₹ 1,200/- (for foreign **U.S.\$ 12.50 and U.S.\$ 300 respectively). A Life Member shall have all the privileges of a member during his/her lifetime.

5. Institutional Member: An Institution paying a subscription of ₹ 5,000/- (for foreign** U.S.\$ 2,500) only, can become an Institutional Member of the Association for that financial year. It shall be eligible to nominate one person as its representative to attend Annual Session of the Science Congress . An Institutional Member shall be eligible to receive, free of cost, a copy of the complete set of Proceedings of the Annual Science Congress Session as also a copy each of the Association's journal "Everyman's Science".



6. Donor: Any person paying a lump sum of ₹ 10,000/- (for foreign **U.S. \$ 5000) only, can become an Individual Donor of the Association. An INDIVIDUAL DONOR shall have all the rights and privileges of a member during his/her lifetime. An Institution paying a lump of ₹ 50,000/- (for foreign U.S.\$ 25,000) only, can become an INSTITUTIONAL DONOR of the Association forever, which shall have the right to nominate one person as its representative to attend Annual Session of the Science Congress. An Institutional/Individual Donor shall be eligible to receive, free of cost, a copy of the complete set of Proceedings of the Annual Science Congress Session as also the Association's journal "Everyman's Science".

* Admission fee of ₹ 50/- is needed only for becoming a new Annual Member and not for Sessional Member/Life Member/Institutional Member/Student Member/Donor.

** (A Foreign Member means one who is normally Resident outside India).

A) Presentation of Papers : A copy of complete paper accompanied by an abstract in triplicate not exceeding one hundred words and not containing any diagram or formula, must reach the Sectional President latest by September 15, each year.

B) Members of all categories are entitled to Railway Concession of return ticket by the same route with such conditions as may be laid down by the Railway Board for travel to attend the Science Congress Session provided that their travelling expenses are not borne, even partly, by the Government (Central or State), Statutory Authority or an University or a City Corporation and their total earning of or emoluments drawn do not exceed ₹ 5,000/- (Rupees Five Thousand per month). Please download the Railway Concession form from ISCA Website.

C) Members of all categories are entitled to reading facilities between 10.00 a.m. to 5.30 p.m. on all weekdays (except Saturdays & Sundays) in the library of the Association.

D) Members of all categories may avail Guest House facilities, Lecture Hall hiring at the rates fixed by the Association from time to time.

E) Members of all categories should bring the Membership Card always for attending any Seminar, Conference and Annual Congress organized by ISCA in future.

Note :

- (1) All **Bank Drafts** should be drawn in favour of "**The Indian Science Congress Association**" Payable at any branch in **Kolkata**. Members are requested to mention their Membership No. while making any correspondence to ISCA office.
- (2) **No Money Order, I.P.O., ECS or Cheque will be accepted by ISCA.** No Membership will be taken without duly filled in prescribed Membership Form (Application Form for New Membership/ Application for Renewal of Membership).
- (3) Cash will only be taken by hand at ISCA Hqrs. **Please do not send the Cash by Post within the envelope.**

Subscription should be sent by Bank Draft to "**The Indian Science Congress Association**" 14, Dr. Bireswari Guha Street, Kolkata - 700 017



THE INDIAN SCIENCE CONGRESS ASSOCIATION

14, DR. BIRESH GUHA STREET, KOLKATA 700 017, INDIA

APPLICATION FORM FOR MEMBERSHIP

To
The General Secretary (Membership Affairs),
The Indian Science Congress Association,
14, Dr. Biresh Guha Street,
Kolkata 700 017

Dear Sir,

I like to be enrolled as a Life Member / Annual Member / Donor / Sessional Member / Student Member/Institutional Member/ Individual Donor/Institutional Donor of The Indian Science Congress Association (Pl. Tick).

I am sending herewith an amount of ₹ in payment of my subscription by Cash / Bank Draft No. _____ dated _____ issuing bank _____ from the year 1st April 20..... to 31st March 20.....

I am interested in the following section (Please tick any one).

SECTIONS

- | | |
|---|---|
| 1. Agriculture and Forestry Sciences | 8. Information and Communication Science & Technology (including Computer Sciences) |
| 2. Animal, Veterinary and Fishery | 9. Materials Science |
| 3. Anthropological and Behavioural Sciences (including Archaeology, Psychology Education and Military Sciences) | 10. Mathematical Sciences (including Statistics) |
| 4. Chemical Sciences | 11. Medical Sciences (including Physiology) |
| 5. Earth System Sciences | 12. New Biology (including Biochemistry, Biophysics & Molecular Biology and Bio-technology) |
| 6. Engineering Sciences | 13. Physical Sciences |
| 7. Environmental Sciences | 14. Plant Sciences |



(Please type or fill up in Block Letters)

Name (in Block letters)

Mr./Ms./Shri/Shrimati/Dr./Prof (Please tick)

SURNAME	FIRST NAME	MIDDLE NAME
---------	------------	-------------

Academic Qualifications :

(Self attested xerox copy of last educational certificate/marksheet must be attached)

Designation

Address of communication :

(including state, city/town and pin code)

Phone No./Mobile Number & E-mail :

Permanent Address :

Yours Faithfully

Comments (if any)

Date :

Signature

Note:

- (i) All **Bank Drafts** should be drawn in favour of "**The Indian Science Congress Association**" Payable at any branch in **Kolkata**.
- (ii) All Application Forms for Membership and the renewal of Membership must be submitted by providing the addresses of the applicants themselves only and not any 'care of address'.
- (iii) Admission fee of ₹50/- is needed only for becoming a new Annual Member and not for Sessional Member/Life Member/Institutional Member/Student Member/Donor.
- (iv) Members are requested to mention their Membership No. while making any correspondence to ISCA office.
- (v) **No Money order, I.P.O., ECS or Cheque** will be accepted by ISCA.
- (vi) No Membership will be taken without duly filled in prescribed Membership Form (Application Form for New Membership/Application For Renewal of Membership)
- (vii) Cash will only be taken by hand at ISCA Hqrs. **Pl. do not send the cash by Post within the envelope.**





Vigyan Aur Samaj Science and Society

" Science will lose its meaning and purpose unless it is used in the betterment of Society" with this vision, The 108th Indian Science Congress is organizing a special program titled VIGYAN AUR SAMAJ (SCIENCE AND SOCIETY) with its focus towards Sustainable Development of Society and Women Empowerment.

The aim is portraying the contribution of science, researchers, and the young minds towards development of the society and women empowerment. The program will have lectures and panel discussions of renowned Scientists, Researchers, Academicians, Experts, Innovators and Policy makers to discuss the role of science, educational institutions, and young minds in the Sustainable Development of the society. Other than this it will also undertake the activities like conference, project exhibitions, etc focusing the theme.

Note: Participation through registration only.

For further details contact:

DR. ANOOP KUMAR JAIN

251 Anandpuri, Kanpur-208 023.

Mobile : 09336035646

Email : anupjainmumbai@gmail.com

anoop.jain1960@yahoo.com

DR. CHANDRAHAS CHANDRASHEKHAR HANDA

Professor, Department of Mechanical Engineering,

K. D. K College of Engineering, Nandanvan, Nagpur;

Mobile No: 9823342177, 9588412002;

Email: chandrahashanda@rediffmail.com ; chandrahashanda@gmail.com

Farmer Science Congress

108th Indian Science Congress is organizing Farmer's Science Congress (FSC) and technology for Sustainable Development with Women Empowerment. In this regards ISC will provide a platform to improve the bio-economy and attract youth to agriculture and encourage the farmers for organics farming. Renowned experts from the agriculture sector will be delivering lectures in this session.

This Farmers Science Congress will also focus on students, so that interest in agriculture can be created right from the school level through interaction. This session will also deliberate the role of farmer innovation on integrated agriculture and entrepreneurship for doubling farmer income, climate change, biodiversity, conservation, ecosystem services and Women former empowerments and Agrarian distress, ruler bio-entrepreneurship etc.

For further details contact:

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251 Anandpuri, Kanpur-208 023.

Mobile : 09336035646

Email : anupjainmumbai@gmail.com

anoop.jain1960@yahoo.com

DR. PRAKASH ITANKAR

Department of Pharmacy

Rashtrisant Tukadoji Maharaj Nagpur University,

Nagpur-440033

Mobile: 9766191818 ; Email: prakashitankar@hotmail.com



Tribal Science Congress

The 108th Science Congress is going to organize Tribal Science Congress. This showcase will be focusing on the empowerment of tribal Women. The experts on the same would be invited to deliver lectures to women participants. It will also be a platform for scientific display of indigenous ancient knowledge system and practice. It will also consist of exhibition and display of tribal art, artifacts, handicrafts, and practice of ayurvedic medicine etc. The tribal ayurvedic practitioners would be invited to share their traditional knowledge. It is also intended to present traditional tribal culture through the local tribal groups for the attendees. No registration fee will be charged on participants. Exhibition owners and dance group participants would be on invited by the university.

For further details contact :

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Email : anupjainmumbai@gmail.com

anoop.jain1960@yahoo.com

PROF. (DR.) SHAMRAO KORETI

Head, Dept. of Political Science & Associate Dean, Faculty of Humanities,
Rashtrasant Tukadoji Maharaj Nagpur University, Mahatma Jyotiba Phule

Educational Campus, Amravati Road, Nagpur-440033;

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Mobile No.:9527733001; Email:shyamkoreti@nagpuruniversity.nic.in

Nagpur, Maharashtra



108th Indian Science Congress

Nagpur, Maharashtra



Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur



The Indian Science Congress Association, Kolkata

108th ISC.-2023 SECRETARIAT

Director, Innovation Incubation and linkages
Rashtrasant Tukadoji Maharaj Nagpur University,
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Tel: 9422840360, 8788956008, 9011323123

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Website: www.isc2023.org

The Indian Science Congress Association

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