



सीएसआईआर स्पोर्ट्स प्रमोशन बोर्ड  
CSIR SPORTS PROMOTION BOARD



# 50th Shanti Swarup Bhatnagar Memorial Tournament (SSBMT - 2018)

Zonal-IV: 08-11' December 2018



# Souvenir



## Organiser

**CSIR-CENTRAL MECHANICAL ENGINEERING RESEARCH INSTITUTE**

[Council of Scientific and Industrial Research]

Mahatma Gandhi Avenue, Durgapur – 713 209 [West Bengal]

<http://www.cmeri.res.in>





# **50<sup>th</sup> Shanti Swarup Bhatnagar Memorial Tournament**

December 08-11, 2018

## **SOUVENIR**

**CSIR-Central Mechanical Engineering Research Institute**  
Durgapur – 713209, West Bengal







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## शपथ

हम 50वे शांति स्वरूप भटनागर मेमोरियल टूर्नामेंट 2018 इनडोर एवं आउटडोर, जोनल IV के प्रतिभागी निष्ठापूर्वक वचन देते हैं कि हम अपने संगठन के सम्मान, खेलों के उत्कर्ष और सच्ची खेल भावना हेतु अपने व्यवहार और उसके परिणामों के प्रति जवाबदेही को स्वीकार करते हुए तथा उन नियमों का सम्मान करते हुए जो इन्हें नियंत्रित करते हैं, इन खेलों में भाग लेंगे।

## Pledge

We, the participants of 50th Shanti Swarup Bhatnagar Memorial tournament 2018, indoor and outdoor, zonal IV, solemnly affirm that we will take part in the games, respecting the regulations that govern them, accepting accountability for my behaviour and its outcomes, in the true spirit of sportsmanship for the honour of our organisation and glory of sports.

## SIR SHANTI SWARUP BHATNAGAR



(February 21, 1894 – January 1, 1955)

*I have always been associated with many prominent figures eminent in other ways, but Dr Bhatnagar was a special combination of many things, added to which was a tremendous energy with an enthusiasm to achieve things. The result was he left a record of achievement which was truly remarkable. I can truly say that but for Dr Bhatnagar you could not have seen today the chain of national laboratories.*

- Pandit Jawaharlal

Dr Bhatnagar was born in Shahpur, now in Pakistan. His father Parmeshwari Sahai Bhatnagar died when he was only eight months old and he spent his childhood in the house of his maternal grandfather, an engineer, where he developed a liking for science and engineering. He used to enjoy building mechanical toys, electronics batteries, string telephones, etc. From his maternal family he also inherited a gift of poetry, and his Urdu one-act play Karamati won the first prize in a competition.

Shanti Swarup Bhatnagar played a significant part along Homi Jehangir Bhaba, Prasanta Chandra Mahalanobis, Vikram Ambalal Sarabhai and others in building of post-independent S&T infrastructure and in the formulation of India's science and technology policies. Bhatnagar was the founder director of the Council of Scientific and Industrial Research (CSIR), which was to later become a major agency for research in independent India.

During 1919-21 Bhatnagar spent at the University of London earning his DSc degree on Surface Tension of Oils, under the supervision of Prof EC Donnan, FRS and with the support of the awards of a scholarship by Dyal Singh Trust.

On returning to India in August 1921 he joined the Banaras Hindu University (BHU) as Professor of Chemistry. It may be noted that the BHU was founded by Pandit Madan Mohan Malaviya in 1916. Bhatnagar stayed for three years in BHU and during this short span of time he was able to create active school of physico-chemical research. Bhatnagar wrote the 'Kulgeet' (University song) of the University.

In 1924, Bhatnagar moved from Banaras to Lahore where he was appointed as University Professor of Physical Chemistry and Director of University Chemical Laboratories. He spent 16 years in the Panjab University.



Bhatnagar did considerable work in applied and industrial chemistry. The first industrial problem undertaken by Bhatnagar was the development of a process to convert bagasse (peelings of sugarcane) into food cake for cattle. This was done for the Grand Old Man of Punjab, Sir Ganga Ram.

His long tenure in the University was characterised by intense research activity and significant contribution to the science of colloids. The most celebrated consultancy during the period was the mud problem brought in by M/s Steel Brothers, London. He was so pleased with the method developed by Bhatnagar that they offered a sum of Rs. 1,50,000/- to Bhatnagar for his research work on any subject related to petroleum. At the instance of Bhatnagar the company placed the amount at the disposal of the University. The grant helped to establish the Department of Petroleum Research under the guidance of Bhatnagar.

Bhatnagar jointly with KN Mathur wrote a book 'Physical Principles and Applications of Magneto Chemistry' and which was published by Macmillan publishers. This book was recognized as a standard work on the subject. Prafulla Chandra Ray wrote: "On turning over the pages of Nature my eyes chanced upon an advertisement of Macmillan's in which I find your book at last advertised".

Bhatnagar concurrently held a number of important posts in the Government. In 1948 and 1949 he worked as Secretary to the Ministry of Education and Educational Adviser to the Government of India. He was chosen to become the first Secretary to the Ministry of Natural Resources and Scientific Research, which was set up in 1951. He was also the Secretary of Atomic Energy Commission and later became the Chairman of the University Grants Commission.

He received a number of honours in recognition of his significant contributions. In 1936, the British Government conferred on him the Order of British Empire. In 1941, he was made the Knight Bachelor. The Society of Chemical Industry (UK) elected him as Honorary Fellow in 1943 and later, as Vice President. Still greater recognition of his contributions in Science was his election in 1943 as a Fellow of Royal Society of London. He was a past President of the Indian Science Congress and National Institute of Science and an Honorary Fellow of Asiatic Society. Among the Universities, which have conferred Honorary Doctorates on him include Oxford, Agra, Allahabad, Banaras, Delhi, Lucknow, Patna and Saugar. He was honoured with Padma Vibhushan in 1954.

The CSIR came into operation on 26<sup>th</sup> September, 1942. The BSIR and IRUC were designated as advisory bodies to the Government body of the CSIR. In 1943 the Governing Body of CSIR approved the proposal mooted by Bhatnagar to establish five national laboratories – the National Chemical Laboratory, the National Physical Laboratory, the Fuel Research Station and the Glass and Ceramics Research Institute. In 1944 in addition to its annual budget of Rs. 1 million, the CSIR received a grant of Rs. 10 million for the establishment of three laboratories. The Tata Industrial House donated Rs. 2 million for the Chemical, metallurgical and fuel research laboratories.

After his death, CSIR established Shanti Swarup Bhatnagar Award for eminent scientists in his honour. In remembrance of the services rendered by him, the Sports Promotion Board of CSIR conducts indoor and outdoor games every year.

**Message from**  
**President, CMERI Staff Club**  
**&**  
**Director, CSIR-CMERI, Durgapur**



We as Science & Technology professionals are obligated to focus our R&D efforts towards the empowerment of the Social Masses and alleviation of the Social Menaces. In this regard, it would be apt to state that for the holistic development of the Nation, it is of immense significance that the Physiological and Psychological dimensions of an Individual are progressively enhanced. Sports and Games play a critical role in the attainment of this Physical and Spiritual integration.

It is a moment of immense pride and honour that CSIR-CMERI, Durgapur will be hosting the Golden Jubilee Zonal Shanti Swarup Bhatnagar Memorial Tournament-2018. This August assembly of 440 sportspersons from across the CSIR National Laboratories will witness 7 Sports and Games events. The tournament will provide a platform for the CSIR family members to indulge in competitive sporting events which will eventually engage their physical and mental abilities to the fullest.

Participation in such events also helps in fostering a spirit of Team-Work amongst the participants. This exposure will not only enrich their experience, but will also aid them in inculcating high values of Team –Work and Competitive Mind-set, which in turn will help them to progressively imbibe the same spirit into their Professional Lives.

I welcome all and wish Luck to all the participants of this Sporting Extravaganza, and urge all to participate in their respective events with utmost zeal and vigour. I also urge all participants to enjoy the Hospitality and Environs of CSIR-CMERI, Durgapur, during their stay.

Jai Hind!!!

[Prof. (Dr.) Harish Hirani]





## CSIR SPORTS PROMOTION BOARD



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Council of Scientific & Industrial Research  
Rafi Marg, New Delhi-110001



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### From the Desk of Secretary, Sports Promotion Board



### MESSAGE

It is my utter complacency to have a chance in expressing my excitement through this message on the occasion of Golden Jubilee Shanti Swarup Bhatnagar Memorial Tournament Fourth Zonal, being organised by CSIR-CMERI, Durgapur during 8-11 December, 2018.

Commitment and goals of Sports fraternity of CSIR are not only very closely aligned to the vision and mission of CSIR but also playing a very significant role in creating a healthy and happy organization.

There is no better accolade to the founder of this great organization, Sir Shanti Swarup Bhatnagar, a great visionary, able leader and apt Scientist, than to organize Sport activities in his dotting memory. I am proud that since departure of his soul, we are organizing tournaments every year in his memory. Shanti Swarup Bhatnagar Memorial Tournament has not only created but maintaining a common platform to sports loving people of the Council. It instils a sense of belongingness to the organization. Sports bring immense personal and community assets. It teaches composure, fortitude, utter determination, teamwork, capacity to accept failure affably and to win with bliss yet humility.

I am certain that teams gathered here will play the games with true sportsman spirit and will take enamoured memory of the tournament to admire later.

I wish to extend my gratitude to CSIR-CMERI for organizing Fourth Zonal of 50<sup>th</sup> SSBMT. Hope your stay here will be very comfortable. I wish all the success to the participants.

***"Without your involvement, you can't succeed. With your involvement, you can't fail."*** - Dr. A P J Abdul Kalam

*Dr. Rakesh Kumar Sinha*

(Dr. Rakesh Kumar Sinha)

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प्रो. शुद्धसत्व बसु, एफ.एन.ए.एससी, एफ.आई.सी.एस  
निदेशक  
**Prof. Siddhasatwa Basu, F.N.A.Sc, F.I.C.S.**  
Director

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भुवनेश्वर-751013, ओडिशा, भारत

**CSIR - INSTITUTE OF MINERALS & MATERIALS TECHNOLOGY**

(Council of Scientific & Industrial Research)

Bhubaneswar - 751013, Odisha, INDIA



### Message

I am extremely happy to note that CSIR-Central Mechanical Engineering Research Institute (CMERI), Durgapur, is organising the 50<sup>th</sup> Shanti Swarup Bhatnagar Memorial Tournament (SSBMT) Indoor and Outdoor Zonal from 8<sup>th</sup> to 11<sup>th</sup> December, 2018. I extend my warm welcome to all the participants and officials from our sister laboratories and wish them a very comfortable stay there in Durgapur. I congratulate all the organising committee members of CSIR-CMERI for coming forward to host our CSIR family members with all spirit.

Sports is such a unique event by itself which helps all the members under its umbrella to lead a harmonious living and develop camaraderie among all. Winning and losing is not the primary objective of organising such events, rather playing together, knowing each other and maintaining the culture of sports in a peaceful manner to cherish the memory for ever are the important aspects of it.

I am confident of the participants playing the games with true sportsman spirit for developing friendships and better understanding among themselves. I wish all the participants and the organisers to join hands in making the program memorable.

On behalf of CSIR-Institute of Minerals and Materials Technology (IMMT) and on my own behalf, I extend my best wishes for the grand success of this event.



Professor Siddhasatwa Basu  
Director





सीएसआईआर-भारतीय विषविज्ञान अनुसंधान संस्थान  
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निदेशक

Professor Alok Dhawan

FNASc, FAMS, FRSC, ATS

Director



### Message

I am delighted that CSIR-CMERI, Durgapur is organizing 50<sup>th</sup> **Shanti Swarup Bhatnagar Memorial Tournament (SSBMT)** Zonal IV (Indoor & Outdoor) from December 08-11, 2018.

In today's era, participating in sports activities not only contributes to physical as well as mental fitness but also gives an opportunity to explore one's talent and enhance self-confidence. It also inculcates strong bonding among CSIR family members and hence immensely contributes towards building a New India. Such sports tournaments provide unique opportunities to the staff members of CSIR family for their enthusiastic participation to foster leadership and a team spirit amongst them. With a view to bring people of diverse cultural background on the same platform, CSIR-Sports Promotion Board was established and is continuously making efforts to encourage, promote and strengthen the core values among the staff members by organizing such events.

I am sure participants from CSIR family will cherish the traditional hospitality of Durgapur, share memories of the past SSBMT events and also carry fond memories of this tournament. On this occasion, on behalf of CSIR-Sports Promotion Board as President and on my own, I wish to extend my gratitude to CSIR-CMERI for organizing this great event and to all team members coming from different regions of the country to compete in various sports activities.

I wish the organizers a great success for this tournament.

  
Alok Dhawan  
President

CSIR - Sports Promotion Board

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## About Durgapur

Durgapur is a Tier-II city in Paschim Bardhaman district, in the state of West Bengal, India. Durgapur is the 3rd largest urban agglomeration after Kolkata and Asansol in West Bengal and happens to be the 2<sup>nd</sup> planned city in India after Chandigarh and has the only operational dry (inland) port in the Eastern part of India. Durgapur was planned by two American Architects- Joseph Allen Stein and Benjamin Polk in 1955. It is the only city in Eastern India to have an operational dry dock.

Durgapur is by far the most industrialized city in eastern India and the second planned city in India. It started with the first prime minister of independent India, Jawaharlal Nehru. His dream of transforming the backward agricultural country into an industrially advanced nation was picked up in West Bengal by Dr. B.C. Roy. At the earlier stages for the selection of a proper site for a new industrial township, Jnananjan Niyogi, a great business organizer and planner, was involved. The modernist American architect Joseph Allen Stein, invited to head the newly formed Department of Architecture and Planning at the Bengal Engineering College in Calcutta, plunged into a major project as soon as he reached India in 1952 – the designing of Durgapur city with Benjamin Polk, another American architect already living in Calcutta. Thereafter it was the task of local leaders such as Ananda Gopal Mukherjee and bureaucrats such as K.K. Sen to get Durgapur going.

The nearest domestic airport is Kazi Nazrul Islam Airport. The airport is roughly 15 kilometers from Durgapur's City Centre. It is India's first private-sector Greenfield airport. It is located in a place called Andal. An air force station at Panagarh (16.3 km from Durgapur City Centre), belonging to the Indian Air Force, is used as a base for a C-130J Hercules squadron.

Durgapur experiences a somewhat transitional climate between the tropical wet and dry climate of Kolkata and the more humid subtropical climate further north. Summers are extremely hot and dry, lasting from March to the middle of June, with average daily temperatures near 32 °C. They are followed by the monsoon season with heavy precipitation and somewhat lower temperatures. Durgapur receives most of its annual rainfall of around 52 inches during this season. The monsoon is followed by a mild, dry winter from November to January. Temperatures are quite moderate, with average daily temperatures near 20 °C. There is a short autumn at the end of October and a short spring in February, both of which have relatively moderate temperatures of around 25 °C.

Nehru Stadium is the biggest sports stadium in the city. It has a huge football ground, basketball and volleyball courts, athletic tracks, modern fully equipped gymnasium etc. ASP Stadium is another sporting centre with a large ground, with all facilities for cricket, football, gymnastics, etc. It is managed by the Alloy Steel Plant Authority.

Shahid Bhagat Singh Stadium is a newly developed stadium, which is run by the Durgapur Municipal Corporation. Its football ground is one of the best in West Bengal. Teams like Mohun Bagan A.C. conduct their pre-season training camps here.

Sidhu Kanu Indoor Stadium houses many sporting organisation and sporting association of Burdwan district, including Durgapur Sub-divisional Women's Sports Association, School Sports Association-Durgapur Sub-division, Burdwan District Badminton Association, Burdwan District Table Tennis Association and Burdwan District Physical Culture Association.



## CSIR-CMERI – An Introduction

The Central Mechanical Engineering Research Institute (also known as CSIR-CMERI Durgapur or CMERI Durgapur) is a public engineering research and development institution in Durgapur, West Bengal, India. It is a constituent laboratory of the Indian Council of Scientific and Industrial Research (CSIR). This institute is the only national level research institute in the field of mechanical engineering in India.

The CMERI was founded in February 1958 under the endorsement of the CSIR. It was founded to develop national mechanical engineering technology, particularly in order to help Indian industries. During its first decade, the CMERI mainly focused its efforts towards national technology and import substitution. Currently, the Institute is making R&D efforts in the front-line areas of research such as Robotics, Mechatronics, Microsystem, Cybernetics, Manufacturing, Precision agriculture, Embedded system, Near net shape manufacturing and Biomimetics. Besides conducting research, the Institute works towards different R&D based mission mode programs of country to provide suitable technological solutions for poverty alleviation, societal improvement, energy security, food security, aerospace, mining, automobile and defense.

### Campus

Three residential campuses extended over 72 acres of land and has civic amenities like Staff Quarters, Scientist Apartments, Children Park, Health Center, Staff Club, Guest Houses, Executive Hostels, Academic Hall of Residence, Dispensary, Market, Gymkhana and Schools. Kendriya Vidyalaya is situated inside the campus for providing the education from primary to higher secondary students and meant mainly for ward of the employees. A state-funded free primary school named Shishu Bani is also available in the campus to serve the educational need of nearby poor people. The institute also runs a free children computer training center named CSIR Kids' i-zone, which is situated in the colony campus.

### Achievements

The CMERI has developed as many as many products and processes, out of which 26 have been awarded prestigious national awards. The CMERI has filed more than 100 patents. Over 120 licensees have learned from the institute's products and processes for commercial exploitation.

During 1956-1962, Man Mohan Suri, the then Director of CMERI, has developed a novel concept of an integrated power pack involving reverse-governing techniques for the diesel engine superimposed on a hydro-mechanical transmission called Suri-Transmission. This has resulted in substantially increasing the efficiency of diesel locomotives. Suri-Transmission and its improvements are covered by 36 patents in 11 major countries.

In the mid-sixties, the Green Revolution triggered large-scale tractor usage in India. To meet this growing demand in 1965, CMERI initiated a project for design and development of 35 HP tractor based on indigenous know how. The developed tractor technology has been named as Swaraj by Indira Gandhi (the then Prime Minister of India). Recently, the institute developed the Soleckshaw electric rickshaw under the CSIR-800 community project program, with the aim of reducing the carbon footprint of the city and simultaneously mitigating the drudgery of the manual rickshaw puller. The institute in collaboration of West Bengal Renewable Energy Development Agency (WBREDA), also developed a smart card based prepaid energy meter for use with renewal energy sources. Scientists of the institute have



developed India's first cricket-ball stitching machine to bring uniformity in cricket balls and repeatability in performance.

The institute is one of the nodal points of National Knowledge Network connectivity program under multi-gigabit pan-India network to share intellectual property and knowledge-base among premier R&D labs/institutes/universities of the country.

### **Extension Centre**

The CMERI Centre of Excellence for Farm Machinery (CMERI-CoEFM) (Erstwhile MERADO), Gill Road, Ludhiana, Punjab. The CMERI-CoEFM was established as Mechanical Engineering Research & Development Organization (MERADO) at Ludhiana as an extension center of CMERI to concentrate on the technology development and expertise needs of around 65,000 small & medium scale industries, concentrated in and around Ludhiana, Punjab. In the past, a major component of R&D carried out at this center has gone in towards the development of appropriate machinery for productivity enhancement in the agricultural and the post-harvest processing sectors. A series of oil expellers of different capacity (from 1TPD to 50TPD) are developed with a patented technology to produce pungent oil from mustard seed, which was released to a number of industries. In the Industrial front, the center developed many products ranging from single needle flat bed & post bed leather sewing machine and high speed safety stitching industrial sewing machine for the textile industry, brick moulding machine for the construction industry, radial drilling machine, friction welding machine, and rough terrain forklift truck for the manufacturing industry.

This extension center of CMERI, Durgapur is now concentrating on precision farming, multi-cropping and productivity improvement of available land that would lead to conservation of seed, water and fertilizer through the development of advanced farm machinery equipped with advanced sensors.

At present, the major R&D thrust of this center is directed towards the exploration of various sources of bio-fuels and perfecting its extraction technology. CMERI-CoEFM has taken initiative for development of small biodiesel plant suitable for farmers in rural sector. The center also has started experiments for utilization of de-oiled cakes for generation of bio-gas, which can be used by farmers for self-reliance in energy.

### **Academics**

The institute offers integrated M.Tech.-PhD. programmes from the Academy of Scientific and Innovative Research in New Delhi in Mechatronics, and applied and Computational Mechanics. New Postgraduate diploma Program in Robotics, Maintenance Engineering and Advanced Manufacturing Technology are being offered with a target to provide in-depth exposure to the engineering concepts, scientific principles, implementation methodology and hands-on experience to freshers and Industry professionals. Other on-demand short-term courses are also arranged in the area of mechanical engineering and allied discipline. The CMERI offers opportunities to do projects twice a year for B.E. / B.Tech. / M.C.A. / M.Tech. to students from reputed engineering colleges like IITs, NITs etc. in Robotics, Information Technology, Mechanical Engineering, Electronics, Computer Science, Mechatronics and Material Science.



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STO, CSIR-CECRI

Dr. Indu Bhushan Deb  
Scientist, CSIR-IICB

Shri K. Chandran  
STO, CSIR-CLRI

Shri Ramesh Baura  
Hindi Officer, CSIR-CEERI

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Mrs. Preeti  
CSIR-Hqrs

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Mr. Shailendra Kumar

Executive Committee Member





## Participating Laboratories/ Institutes

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2. CSIR-Institute of Minerals and Materials Technology, Bhubaneswar
3. CSIR-National Botanical Research Institute, Lucknow
4. CSIR- North East Institute of Science and Technology, Jorhat
5. CSIR- National Metallurgical Laboratory, Jamshedpur
6. CSIR- Central Glass and Ceramic Research Institute, Kolkata
7. CSIR-Indian Institute of Chemical Biology, Kolkata
8. CSIR-Central Building Research Institute, Roorkee
9. CSIR-Indian Institute of Petroleum, Dehradun
10. CSIR-Indian Institute of Toxicology Research, Lucknow

## Photographs of Participants



CSIR-CRRI, New Delhi



CSIR-IMMT, Bhubaneswar





CSIR-IITR, Lucknow, Indoor Team



CSIR-IITR, Lucknow, Outdoor Team



CSIR-CGCRI, Kolkata Team





CSIR-NEIST, Jorhat, Indoor Team



CSIR-NEIST, Jorhat, Outdoor Team





### **CSIR-CMERI, New Delhi**

#### Cricket

Mr. Vikas Negi,  
Mr. Meesam Zaidi  
Mr. Ravi Kumar  
Mr. Ramesh Badola  
Mr. Anil Kumar  
Mr. Rajan Verma  
Mr. Sachin Kumar  
Mr. O.P, Yadav  
Mr. Kumar Sashi Bhusan  
Mr. Vijay Kumar Sah  
Mr. Niranjana Kumar Srivasta  
Mr. Sunil Kumar

#### Volley Ball

Mr. Sanjay Kumar  
Mr. Pankaj Bhatt  
Mr. Chander Kant  
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#### Chess (Men)

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#### Carrom (Men)

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#### Table Tennis (Men)

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Sh. Ghayasuddin  
Dr. Anil kumar Gauniyal  
Sh. Pawan Kumar  
Dr. Bijay Bishnu wagh  
Sh. Kamal Srivastava  
Sh. Niraj Kumar  
Sh. Vivek Kumar Gupta  
Sh. Asish Kumar  
Dr. Sharad Kumar Srivastava  
Sh. Narendra Kumar  
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Sh. Rishi Verma

#### Volleyball

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Sh. Amar Pal Singh Bisht  
Dr. Shashank Kr. Mishra  
Dr. Prdyumna Kumar Singh  
Dr. Shivanand S. Dhudagi  
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Sh. Ajay Kumar  
Sh. Jay Chand

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Dr. Abhishek Niranjan  
Sh. Rishibh. K. Jain

#### Batminton (Men)

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Dr. Sumit Yadav  
Dr. Sandip Kumar Behera

#### Carrom (Men)

Sh. Sagar Kumar  
Sh. S.N. Verma

#### Chess (Men)

Sh. Vivek Srivastava

#### Bridge (Men)

Dr. Geetgovind Sinam  
Sh. Rajesh K. Sonkar  
Sh. Shailendra Kumar

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Smt. Sona Lamsal

#### Carrom (Women)

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Mr. Sausthov M Bhattacharyya  
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श्री हिम्मत सिंह पुण्डीर  
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## Ethics in Sports

In today's world it is being witnessed that games are not being played for fun or enjoyment. Professional Sports is for nothing less than a battle and winning is a matter of life and death. This kind of an attitude has seeped through to sports at the amateur level as well. As a result, Sports has been increasingly witnessing a complete disregard for sports ethics. Today, the influence of money factor in sports is so great that contestants are ready to go to any extent to win a match. Thus cheating, lying and bribery, violence and doping have become almost essential in sports.

Cases of extreme injuries and even deaths as a result of intentional violence have been on rise. Some sports disciplines such as Boxing and Soccer have been in particular prone to such violence. Sports violence is not restricted to a handful of nations; it has become a universal phenomenon. It is not only the contestants who are involved in such acts; the spectators and fans as well commit violence to help their teams or players win.

Another serious problem in modern sports is doping or use of drugs to improve one's performance. Today it is a major issue of controversy in the Olympic, Asian and other major games. The punishment for use of drugs in sports is strict. Drug using players are not only stripped of their medals but temporarily suspended, and banned from the sports for life if drugs are again detected in the tests conducted by the authorized organization. However, these have failed to discourage the players from using them. The major consequences of the performance-boosting drugs are cancerous growths, liver damage and impotency. It is shocking to observe that mostly the managers of the teams as well as the coaches are responsible for encouraging for taking of drugs among players.

Bribes to players are increasingly on the rise. This practice has been most widely seen in the game cricket. Bribes are offered to teams/ players so that their contesting team can win a match. Another unethical practice is that of cheating by players on the ground. This problem is not new, however it remains a menace to the healthy development of sports.

There is a need to understand why ethical standards in sports have fallen so drastically in modern times. Professional Sports today is not just a game, it is taken very seriously and it involves a great deal of physical and mental strain. Winning means a lot of fame and most importantly money. The wish to be seen as legend in the sport concerned is very strong in professional players. Thus when they are not able to achieve their dream, they sometimes take to cheating, lying, doping or even outright violence out of psychological strain and frustration. They sometimes try so hard to win that they end up hurting themselves psychologically or even physically.

The people who view the performance of sports persons get equally involved in the game. The results are fights among fans of different teams and threats to players. Sometime there is physical attack on opponent players also.

Such unethical practices in sports are degrading to its principle. So apart from strict penalties and punishments, there is a need to understand that sports ought to be played not 'fought'. Winning or losing must be viewed as a part of the game. There is a need to inculcate sportsman spirit among players, coaches and sports fans. Sports must involve real competition, stamina, perseverance and determination. Use of wrong means to achieve a victory is degrading to the very spirit of sports and humanity. All types of unfair means need to be effectively tackled before it is too late.

-Pankaj Kumar



### **Interesting facts in Hindu mythology**

The Hindu religion is the oldest religion whose origin can be traced back to the prehistoric time around 5000-10000 BC. So much of the interesting myths, beliefs and mythologies surrounding the religion are as old. In fact, given the millennia old timeline, many of these mythologies might have gone through a number of retelling at different ages. The Hindu mythology has rich history, enigmatic characters, resounding stories and a surprisingly innate association with modern science. There are cyclic periods of time that keep on repeating themselves after a certain interval. There also are epics like Mahabharata and Ramayana – the earliest being the longest known epic in human history. Following the suit, here is a list of interesting facts about ancient Hindu mythology.

#### **Satya Yug:**

The Hindu mythology clearly states that all living beings pass through a continuous cycle of creation and destruction. This cycle reiterates itself in four different epochs or Yugas. The first of these Yugas is the Satya Yuga, which expands over a period of 1,728,000 years. The Satya Yuga is said to be the golden age of truth and enlightenment. In this age, people have attained an ideal state of mind and their actions are always reasoned and virtuous. The sacred texts further state that there was a surplus flow of ideas and thoughts between people.

Everyone led an honest life and completely adhered to truth. Everyone had acquainted the answer to the ultimate question – the origin of everything. And since there was virtually nothing to conceal, even the tiniest thread of thought was accessible to everyone without any verbal communication. The human physiology also significantly differed from the one that we exhibit today. People used to be around 21 cubits (31.5 feet) tall. They also had a lifespan that stretched over hundreds of thousands of years.

#### **Treta Yuga:**

It represents the second age in the cycle of Maha Yuga. The Hindu scripts state that Treta Yuga spans over a period of 1,296,000 human years. By the advent of Treta Yuga, the presence of *satva* (goodness) in human nature had slowly started to diminish. Whatever amount of goodness they retained in their virtue was now accompanied by ever increasing amount of Tamas and rajas. Tamas represented the darkness in human nature and rajas constituted of all the passion a human could conjure. By now, people had nurtured an acute level of intellect, but they had also lost a good deal of control over their body and its physiology.

The body stature was now lesser than that in the Satya yuga – an average human was around 14 cubits tall, but there were some exceptional beings who had attained godly built and divine persona. To name some, the likes of Rama, Laxamana, Ravana and Hanumana were considered godlike for their extraordinary strength and inimitable intellect.

#### **Dwapar Yuga:**

Dwapar Yuga represents the third age in succession right after Treta Yuga. Also known as the Bronze age, the Dwapar yuga is said to last for 864,000 human years. It represents an age where the goodness and evil in human nature are neck in neck. Since the human body loses a substantial amount of purity (*satva*), people attain a far greater control over their body than their intellect. By the time Dwapar yuga was its peak, the man had already lost control over his innermost body and knowledge. He became more attracted to the materialistic perspective of the world, succumbing to his ever increasing desires. Only the very intellectuals like Bhishma,





Dharmaraja and Vidura were able to escape this allure. Eventually, there was a gradual decline in the moral fiber of society. People with enormous physicality became increasingly offensive in their thirst of desire and power. The average human lifespan had also come down to 1000 years.

### **Kali Yuga:**

The last age in ever repeating cycle of Maha Yuga is the Kali Yuga. It also happens to have the shortest span that lasts for 432,000 human years. The current time period falls under Kali Yuga – also referred to as the Iron Age. As the name already suggests, Kali Yuga witnesses hypocrisy and instability like never before. Human nature is significantly corrupted by the temptations of sin and only a fickle of conscience remains.

The human body is at its lowest in terms of physicality and intellect. An average man is only 3.5 cubits tall and lives for around 100 to 120 years. Citing the ancient Hindu scripts, it is estimated that around 5000 years of Kali Yuga have already passed by. It is also predicted that when Kali Yuga reaches its dying years, the lifespan of man will be no more than 20 years. This age has been majorly highlighted by man's unprecedented longing for materialism. In a stark contrast to previous ages, human lives have been convoluted by ignorance and the connection to one's inner self has been lost.

### **The Vedas and Modern Science:**

The Vedas represent the collection of hymns and religious texts that were formulated somewhere in between 1500 to 1000 BCE. These sacred verses were written in regions of contemporary Indus civilization – a region noted as the origin place of ancient Hindu religion. The scripture used in the Vedas is Sanskrit. Even though the Vedas were composed thousands of years ago, scientists have found a strong connection between their messages and modern science.

For instance, modern scientists put forward the idea of existence of multiple universe in string theory. It states we live in a multiverse – there are many universes that exist in parallel. The Hindu Vedas clearly state this “modern” concept by mentioning the existence of cyclical infinite worlds in the ancient Hindu cosmology. The sacred texts in the Vedas and the Bhagwat Gita were immaculate in their understanding of the universe. In fact, it was Albert Einstein who once quoted “*When I read the Bhagavad-Gita and reflect about how God created this universe everything else seems so superfluous*”.

### **Theory of creation:**

The Hindu mythology provides several accounts on how exactly the creation of the universe took place. The answers themselves delve into varying degrees of complexity since there have been different approaches at separate instances of time. Perhaps the most popular of approach states that the highest of deities were oblivious to their own presence before the existence of time itself. Before the creation, there was no time, no heaven or earth or the space in between. There was the dark ocean that washed into the shores of nothingness.

In another depiction, it all started with the enunciation of a sacred sound Oom (Aum). The ancient Hindu scriptures state that the ultimate reality (Brahman) has three main functions. These three characteristics are inhibited by the trinity of gods – Brahma, Vishnu and Shiva. That is why we can see images where the heads of the trinity are merged together into a single



body – the Trimurti. In the Trimurti, Brahma is the creator of everything. Vishnu is the preserver of nature. Shiva is ultimate destroyer who brings about change whenever it becomes necessary.

### **Final Conclusion:**

Hinduism is labelled as the oldest religion in the world. But it is much more too – the Hindu mythology has been tolerant of other religions and traditions since its inception. In terms of scriptures, it is a delightful concoction of epic stories of morality and uprightness. These stories gave us ideal characters like Rama, Laxamana and the Pandavas among many. The Vedas give us insight on ancient science and astronomy. Epics like Mahabharata and Ramayana narrate divine stories of the never ending battle between the good and the evil. The profuse history of ancient Hindu mythology fascinates the Hindu followers and non – followers alike.

- Smt. Prema. S. Pujar



## Breaking the Barriers

“True champions aren’t always the ones that win, but those with the most guts” -Mia Hamm

Sports and the stakeholders who determine whether or not a nation would succeed at it is as much a product of the society it originated in as the players who delve into it. Examining the evolution of sports in our country would be incomplete if we do not simultaneously analyze the dialectics of the society we stay in. Our governing structures, the status of women, religious affiliations, political conundrums and the will of the state, all of these have to be accounted for. We have a dual hierarchy in sports, very similar to the dichotomy of our economy which is a result of the uneven distribution of wealth. Every other sport falls behind cricket and women in sports of course fall behind the men in sports. And imagine if there was to be a woman who chose to be in sports but not cricket, she has unconsciously chosen to be at the intersection of this dual disadvantage of hierarchy and gender. This article focuses on the status of women in sports and the way forward, because enough has been written and said about our favorite men. They have been catapulted to the stature of demi-Gods and they are the subjects of national adulation.

However, the same cannot be said about the women who have decided to take the plunge and if India desires to have a place on the sporting map, relying on one set of the population wouldn’t lead us far. This is an attempt to build a case to stop underfunding women’s sports because the positive spillovers resulting from this would positively impact all the other cross-cutting challenges that women deal with across the sectors. Among 88 nations, we currently are at the 25th position of the Global Sports Index (GSI), having marginally improved by 4 spots. USA and China remain as the top two players. So, while we have indeed witnessed spectacular performances in the 2016 Rio Olympics, let’s admit that this is just the starting point.

P.V Sindhu became the first Indian to bag a silver in the Rio Olympics. Swapna Burman, Deepika Kumari, Hima Das, Jemima Rodrigues, Smriti Mandhana ...the list of women who have won laurels in sports and proven their mettle can go on and on. And yet there have been several instances of the state blatantly underfunding everything right from the food they ingest to where they are accommodated and the jerseys made for them. The glaring gender pay gap should be addressed with a structured compensation plan for sports persons to bridge the disparity, otherwise what good is it really to have an Olympic medallist as our Union Sports Minister.

The glaring gender pay gap is just one of the multiple hazards women are subjected to. The glass ceiling, the misogyny, the battle with existing notions of what it is to be a woman. The market dynamics too come out to be rather shallow with the men being paid handsomely and the women being handed over a paltry sum. Despite the odds, P.V Sindhu has managed to dismantle the rigid structures and commands an endorsement fee that is second only to Virat Kohli. But it is also important to realize that before her stint at the Olympics, she too was a face lost in oblivion. But the question is why is it happening when sports is a quantifiable profession unlike the others which are subject to ambiguity. Smriti Mandhana scores a century and Virat Kohli does the same, then why is there a pay differential.

Our media which is supposed to serve as a platform to mobilize popular opinion, has always been unfairly tilted to men’s cricket. Its only since the past decade that there are more female names in the sports arena than ever. And what it can do for our country is yet unprecedented. The labour force participation rate of women in India is dismal to say the least. A UN report says that 51% of the work done by women is domestic labour and that is neither remunerated nor respected. Most of them continue to rot in the unorganized sector with alarmingly low pays and substandard working conditions. The Organization for Economic Cooperation and Development too talks about unpaid labour. Sports is one area like many others suffering from gross underrepresentation of women and hence has tremendous potential. It promises both





commercial success and respect. And both these things are crucial to enhance a woman's confidence, improve her self-esteem, motivate her and develop leadership abilities in her. And being a country which does not have enough female role models, this would cause a positive spillover effect which would accelerate the participation of women in society.

This isn't just a call for equal representation of women in sports, this is a call for a planned intervention to dismantle unequal patriarchal power structures persisting and flourishing in our society since generations. It's a call to put an end to archaic social norms that place limitations on what a woman can or cannot do. It's a call to depart from a value system that stifles progress. Sports might be just one aspect of our social structure but it has far reaching implications to cause a much needed paradigm shift in our mindsets that believes that women ought to settle down. But like Sania Mirza famously quipped, in one of her interviews, "Only mud settles down but I am here to move on".

"Women's sport helps break down a lot of barriers for women in other areas, whether in religion or politics." -Clare Balding

- Monika Dash



### मानव जीवन में खेल-भावना

जीवन को सफल एवं आनंदप्रद बनाने के लिए हर किसी को खेल-भावना से ही जिंदगी जीना चाहिए। कारण कि इंसान की जिंदगी की शुरुआत ही मात्र रोते-हँसते एवं खेलते हुए पाया गया है। जिंदगी में अगला कदम वह खेल-खेल में ही बढ़ाता चला जाता है और सीखता भी जाता है। इसलिए इंसान का खेल से एक अटूट रिश्ता है। वह अपनी जिंदगी की तरह ही खेल की भी शुरुआत जीत की काफी आशाएं, उम्मीदें लेकर करता है, इन उम्मीदों को पूरा करने के लिए इंसान एक खेल की तरह ही कभी जोस से काम लेता है, तो कभी होस से। सफलता/जीत की उम्मीदें कभी पूरी होती हैं, तो कभी नहीं होती हैं, लेकिन जब खेल सफलतापूर्वक समाप्त होता है तो पक्ष और विपक्ष दोनों एक विशेष तरह का शकून महसूस करते हैं। इसीलिए किसी ने खूब कहा है कि :

**न हारना जरूरी है , न जीतना जरूरी है।**

**जिंदगी एक खेल है, बस खेलना जरूरी है।।**

एक खेल खत्म होने के बाद इसमें हारने वाले खिलाड़ी को भी कोई खास ठेस नहीं पहुंचती है और न जीतने वाले खिलाड़ी को हारने वाले के दुख में कोई खास खुशी होती है। क्योंकि खेल तो आपसी दो दल के दोस्तों के ही बीच होता है अथवा खेल से पूर्व दोनों दल को आपस की दोस्ती सुनिश्चित कर ली जाती है, क्योंकि दो दुश्मनों के बीच न खेल हो सकता है और न खेल की भावना ही हो सकती है। खेल समाप्त होने के बाद दोनों दल के खिलाड़ी आपस में हाथ मिलाकर ही खेल समाप्त करते हैं। इंसान के जेहन में जितने गुस्से एवं प्रतिस्पर्धात्मक भावनाएं एवं अन्य तामसिक भावनाएं होती हैं, वे खेल के दौरान एक भड़ास की तरह बाहर निकल जाती है जो कि आवश्यक है। फिर इंसान तरोताजा एवं तनाव मुक्त महसूस करता है।

मैं तो यह भी दावा करता हूं कि हमारे विश्व में जो राष्ट्रीय एवं अंतर्राष्ट्रीय खेल-प्रतियोगिताएं होती हैं, वे सभी बेहद जरूरी हैं, क्योंकि यदि वे नहीं होते तो इनके स्थान पर राष्ट्रीय एवं अंतर्राष्ट्रीय छद्म युद्ध और अधिक होते रहते। बात यह है कि इंसान अपने अहं और गर्व के उतार-चढ़ाव को इन खेलों के माध्यम से उलझा लेता है और इस तरह से एक इंसान हो या देश अपने मन के अंदर तरंगित होने वाली भावनाओं को तुष्ट एवं शांत कर देता है।

आज के भौतिकवादी युग में यह खुशी की बात है कि खेल-प्रतियोगिता के प्रति जनसामान्य एवं हरेक जन समुदाय की रुची बढ़ती जा रही है। क्योंकि वर्तमान युग में तो भांति-भांति के भौतिक सुख-साधन जरूरत से ज्यादा हो चुके हैं। आवश्यकता है तो आपसी प्रेम और समंजस्य की, जो कि एक खेल के माध्यम से ही सीखी जा सकती है। चाहे मुक्केबाजी की प्रतियोगिता हो, क्रिकेट की हो या हॉकी की हो या कुश्ती की, हर देश के वासी अपनी प्रतिस्पर्धात्मक मनोवृत्तियों की तुष्टी इसी माध्यम से कर लेते हैं और एक बेहद संतुष्टि का अहसास करते हैं। इसी वजह से फिल्म उद्योग भी खेल से जुड़ी फिल्में जैसे "लगान", "सुल्तान" आदि बनाकर अपने फिल्म उद्योग में आशातीत सफलताएं पाई हैं। जहां तक "लगान" फिल्म की बात है तो ये तो नहीं पता कि विगत इतिहास में इंग्लैंड के राष्ट्रीय खेल क्रिकेट में हमारे देश के ग्रामीण इंग्लैंड को हकीकत में कभी हरा पाए या नहीं, लेकिन हम उन्हें "लगान" फिल्म में हराकर अपने अंदर के राष्ट्रीयता और स्वाभिमान को बढ़ावा देते हैं। ऐसी फिल्मों की अपार सफलता से यह सिद्ध होता है कि उपरोक्त कारणों से ही इंसान खेल का प्रेमी है।



इसीलिए मैं कहता हूँ कि अपनी कर्मभूमि में लाभदायी व्यापार, रोजगार एवं अन्य कार्यों को भी एक जिम्मेदारियों से भरा खेल मात्र मान कर इन्हें आगे बढ़ाया जा सकता है, अर्थात् जिस तरह कोई खेल में हार कर भी हताश नहीं होता, वह जीतने के लिए आगे फिर प्रयास करता है, उसी तरह इंसान अपने कामों को सर के एक बोझ की तरह न लेकर, एक खेल के तौर पर ले तो वह कभी भी हताश नहीं होगा। जाहिर है इंसान खेल से जल्दी नहीं थकता, जितना कि वह एक बोझ ढोने से थकता है। इसीलिए जीवन रूपी खेल में इंसान जहां तक भी सफल होगा, उससे आगे वह प्रतियोगितावश अनवरत अपने कर्म की ओर बढ़ता रहेगा, क्योंकि उसको अपने कार्य में ही खेल की भांति शकुन एवं आनंद मिलेगा।

मैं तो कहता हूँ कि शिक्षा-पद्धति को भी एक खेल की भांति बनाना चाहिए। इस सिलसिले में मैं अपने एक अनुभव की बात कहता हूँ कि प्रतियोगी परीक्षाओं की तैयारी के लिए अनेकों पत्रिकाएं, अनेकों गाइड देख कर मेरे रोम-रॉम कांप उठते थे और यह सोच कर हीन भावना से भी ग्रस्त हो जाता था कि आजकल के नवयुवक इतने सारे अध्ययन करके प्रतियोगिता परीक्षाओं की नैया न जाने कैसे पार लगाते हैं। लेकिन एकबार कोलकाता में मैंने देखा कि मेरा भांजा अपनी प्रतियोगी परीक्षाओं की तैयारी करने हेतु आपस में एक दल का गठन किया हुआ है और मैंने उसे प्रतियोगी परीक्षा की तैयारी को एक खेल की तरह खेलते हुए देखा। उसके बैच के सभी बच्चे शाम तक एक दिन पहले सुनिश्चित किए हुए विषय अथवा शीर्षक पर अपनी जानकारीयां हासिल करते हैं और उसी शीर्षक पर आपस में एक प्रतियोगी परीक्षा आयोजित करते हैं, जिसमें से एक क्वीज मास्टर होता है और बाकी प्रतिभागी बनते हैं। इस तरह वे कभी मौखिक प्रश्नोत्तरी का तो कभी लिखित प्रश्नोत्तरी की प्रतियोगिता का आयोजन आपस में किया करते थे। कभी कभी वे आपस में इंटरव्यू का एक बैठक भी आयोजित करते थे। मैं जब कभी उसे और उसके दोस्तों को आपस में हमेशा हंसते और मजाक करते हुए देखता तो लगता था कि उन्हें ना कोई पढ़ाई की चिंता है और न ही कोई जिम्मेदारी है। देखने पर वे थोड़ा भी पढ़ाकू एवं अंतर्मुखी नहीं लगते थे और मुझे हमेशा लगता था कि ये बच्चे भविष्य में कुछ खास नहीं कर पाने वाले। लेकिन जब उसके एक दोस्त को आईपीएस कंपीट कर आरक्षी अधीक्षक बनाते हुए पाया और सुना कि वे सभी अक्सर लिखित प्रतियोगी परीक्षाएं पास भी कर लेते हैं, कोई इंटरव्यू तक जाकर छंटता हैं तो कोई चिकित्सीय स्वस्थता के मामले में तब मैं आवाक रह गया। तब मेरे जीजाजी ने उनके पढ़ाई के उपरोक्त तरीके के बारे में बताया तो मुझे अपने व्यतीत जीवन पर बहुत अफसोस हुआ, जिसमें मैंने न कभी खेल का महत्व दिया और ना ही अपने दोस्तों के बीच कभी समय बिताया, जिसकी वजह से मैं आज भी किसी सभा में पहुँचकर अक्सर असहज महसूस करने लगता हूँ। लेकिन मैं समझ गया कि जिंदगी में खेल और खेल की भावना होने का क्या महत्व होता है।

महाभारत में वीर अभिमन्यु को अल्प आयु में ही शस्त्र और शास्त्र की विद्या में पारंगत होने का वजह यदि पूछिए तो उसका एक वजह यही था कि उसके गुरु स्वयं उसके मामा कृष्ण और उनके पिता अर्जुन थे; जिन्होंने खेल ही खेल में शस्त्र और शास्त्र दोनों में वीर अभिमन्यु को अल्प आयु में ही पारंगत कर दिया, उन्होंने अभिमन्यु को गंभीरतापूर्वक पठन-पाठन हेतु कभी किसी गुरुकुल में नहीं भेजा।



यूँ तो कहने-सुनने में खेल और खेल की भावना में कोई गंभीरता जैसी कोई बात नहीं दिखाई देती, क्योंकि अक्सर लोग किसी भी बात में ये उक्तियाँ बोलते हैं कि "यह कोई खेल नहीं है", "इसे कोई खेल नहीं समझो"। लेकिन ध्यान से देखा जाए तो एक खेल में अपने प्रतिद्वंदी को हराने के लिए जितना कोई इंसान फूर्तिला, एकाग्र, जिम्मेदार और अनुशासित रहता है, इतना किसी स्वतंत्र रूप से किए जाने वाले कार्य में नहीं रहता। हम जानते हैं कि इंसान को अपनी जिंदगी में उक्त गुणों का कितना महत्व होता है। एक खास बात यह है कि अपना सर्वोत्तम कोशिश करने पर वह जब हार भी जाता है तो वह अफसोस करने के बजाय उससे नया सबक लेता है। इसीलिए हर किसी को सलाह दी जाती है कि खेल में रूची रखे और जिंदगी में किसी को अपना प्रतिद्वंद्वी मानकर एक खेल की तरह आगे बढ़े। यह ध्यान में रखें कि प्रतिद्वंद्विता के भावना में कभी ईर्ष्या अथवा द्वेष की भावना नहीं पनपे।

सामान्यतः खेल खेलाने वाले (रेफरी, इंपायर आदि) को और खेल में हारने और जीतने वाले खिलाड़ियों यानि दोनों को खूशी मिलती है। क्योंकि कोई खिलाड़ी यदि अच्छा खेला है, अच्छा रन बनाया है या कोई बॉलर अच्छा बिकेट लिया है तो वह हारने वाले टीम का हो या जीतने वाले टीम का, वह हमेशा प्रशंसा और पारितोषिक का पात्र बनता है। किसी खेल को खेलमात्र इसलिए माना जाता है क्योंकि उसमें हमें अपने घर से कुछ खो देने और पाने का गम या खुशी नहीं होती। अर्थात् गीता में जो अनासक्त भाव का पाठ पढ़ाया जाता है कि क्या लाए थे जो खो दिया, वैसा क्या पा गया कि जो साथ जाएगा आदि उसे हम एक खेल में प्राप्त करते हैं।

लेकिन गीता के रचयिता भगवान कृष्ण को यदि परखा जाय तो उन्होंने अपने प्रिय पांडवों के जीवन को सचमुच में एक खेल बना डाला है। यहाँ तक कि उन्होंने पाण्डवों को कौरवों के साथ दो-दो बार जुआ खेलने से रोकने एक बार भी नहीं आए। द्रौपदी की लाज रखने के लिए अपनी योग लीला से उनकी साड़ी बढ़ा दी। परंतु इस जुआ के खेल से भी पांडवों को माना करने नहीं आए। इसी खेल की हार में यानि खेल ही खेल में वे 13 वर्ष का वनवास एवं 1 वर्ष का अज्ञातवास भी बीता दिए। यह अलग बात है कि इस दौरान वे राज्य के कई आतंकी जानवरों एवं राक्षसों का वध कर राज्य को आतंक से मुक्त किए। देश और देशवासियों के लिए उनके खेल का यह हिस्सा अर्थात् उनका वनवास अत्यंत हितकारी सिद्ध हुआ। जब जुआ-खेल के अंतिम पड़ाव यानि अज्ञातवास पूरा होने एवं भंग होने की बात को लेकर मतभेद शुरू हुआ तो महाभारत युद्ध की नौबत आ गई। भगवान कृष्ण यहाँ भी नहीं रुके वे इस युद्ध को भी एक खेल अथवा खेल का अंतिम हिस्सा बनाकर अर्जुन के सामने प्रस्तुत कर डाला। उन्होंने गीता में प्रज्ञा अर्थात् अनासक्ति भाव से युक्त बुद्धि जो एक तरह से खेल- भाव है की व्याख्या कुछ इस तरह से किया है:

**यः सर्वत्रानभिस्नेहस्तत्तत्प्राप्य शुभाशुभम्।**

**नाभिनन्दति न द्वेष्टि तस्य प्रज्ञा प्रतिष्ठिता॥2.57॥**

इस तरह भगवान कृष्ण ने अर्जुन का पारिवारिक माया-मोह भंग कर एक पारिवारिक एवं राष्ट्रीय मर्महत युद्ध को भी एक खेल बना दिया। बशर्ते की देखा जाए तो इससे पहले जब वे शांति-दूत बनकर धृतराष्ट्र के पास गए थे तो उन्होंने संभावित महाभारत युद्ध रुकने के लिए शांति का प्रस्ताव रखा था और युद्ध को टालने का पुरजोर प्रयास किया था। लेकिन उन्होंने कौरवों का रवैया देखकर जब यह महसूस किया कि यदि युद्ध नहीं हुआ तो भविष्य में सौ-सौ अत्याचारी कौरव हस्तिनापुर के शांति और शकून इसी तरह भंग करते रहेंगे और हस्तिनापुर के शुभचिंतक भीष्म पितामह, द्रोणाचार्य, कृपाचार्य उनके विरुद्ध जब अभी तक कुछ नहीं कर पा रहे हैं, तो वे





आगे भी कुछ नहीं कर सकेंगे, हमेशा कौरवों द्वारा होने वाले अत्याचारों का मुकदर्शक बने रहेंगे। इसीलिए उन्होंने इन महापुरुषों के युद्ध की बलि बनने की संभावना को देखते हुए भी उन्होंने यह युद्ध होना आवश्यक समझा। इसीलिए उन्होंने अर्जुन के सामने इस भयानक महायुद्ध को भी एकमात्र खेल भाव से देखने की प्रेरणा दे डाली। इससे यह स्पष्ट हो जाता है कि महाभारत युद्ध जैसा कोई भीषण कार्य ही क्यों न हो यदि उसे एक खेल मात्र के तौर पर मान लिया जाता है, तो इंसान उसे भी शुरू करने में न हिचकिचाता है और न ही देर लगाता है, जैसा कि अर्जुन ने किया था। लेकिन अनासक्ति अथवा-खेल भाव का वैसा अर्थ विस्तार जिसमें मोह-माया के साथ-साथ दया-भाव का भी त्याग करना पड़े, आज की आवश्यकता नहीं है। इसलिए मैं एक निम्न शायरी पेश कर जिंदगी में एक खेल भाव अथवा “ श्रीमदभागवदगीता” के अनासक्ति भाव के अर्थ विस्तार को सीमित करता हूँ :

**दिल में न कुछ रखना भाई, यहीं हँसना भी है, रोना भी है ।**

**वक्त के खेल में, हम खिलाड़ी हैं और रब का खिलौना भी है॥**

-श्री संजय कुमार मिश्र



## एक खेलने की कसक जेहन मे रह गई

खेलना सीखा ही था,  
ब्याह अगली मंजिल बनके धमक गई ।  
एक खेलने की कसक जेहन मे रह गई ।  
कभी सोचा भी न था कि  
वो आँख मिचौनी, वो नदी में अठखेलियाँ,  
संग मे खेलती सखियाँ-सहेलिया,  
चलते, हँसते और खेलते,  
अगली मंजिल की लिफ्ट मिलते,  
एक अल्हड़ जिंदगी की ललक मन मे ही रह गई।  
एक खेलने की कसक जेहन मे रह गई ॥  
बारिश की बूंदे, वो सावन के झूले,  
यादों में खलते, भूलाए न भूले,  
सहेलियों का बिछड़ना,  
संग के सपनों का उजाड़ना,  
खुलकर जीने की झिझक तन में रह गई,  
एक खेलने की कसक जेहन मे रह गई।  
हमारी प्यार भरी ये शादी,  
मे छिन गई पंछी सी आजादी,  
हमारा हँसना और बोलना एक आँगन मे रह गई ।  
एक खेलने की कसक जेहन मे रह गई ॥

-श्रीमती राजकुमारी मिश्र



### Ma, I am a child

“Mother,  
I cut my hair today.  
I wore bhaiya's shirt, started talking in a hoarser voice.  
Football and cricket, I went out to play, for you say, they are the men's games.  
I accompanied brother, to plough the fields,  
Carried back home, last month's yields.  
Mother, can I go to school,  
With the boys to learn,  
I promise to grow up, for you I shall earn.  
Mother, the saree doesn't fit me.  
I can't carry it, nor the cumbers of the new home I shall see.  
I can't cook, I want to read books.  
I don't want to go away, leaving you alone,  
The juvenile will drown in the ocean of unknown.  
So I decided to become a boy,  
The joie de vivre, of children, I will enjoy.  
I won't be a bride, Ma. I am a child.  
I won't be imprisoned in a home, Ma.  
I will explore the forests wild.”

-Ankita Mondal

### Games of Chess

I play a game named Chess,  
But often I make the same game a mess!

It has got a board and thirty two pieces,  
Which got invented before the birth of Jesus!

It is the game, which is known by the world,  
The people, who play chess, become genius and bold!

I like to play the chess very much,  
Even in the mobilephone with just a few touch!!

-Ojas Raj



## Contentment and discontentment: Two important aspects of a player's life

A player needs both contentment as well as discontentment in his/ her professional life. Contentment is very much necessary for player's inner peace that allow him to have a good feel and discontentment helps him to do better in his future endeavour. There are two types of players – first who feels contented from his performance and achievement and stops trying further; however second type of player loses inner peace and used to be obsessed with speedy results. Both kinds of people instead of excelling, begins to demonstrate deterioration in his personal as well as professional life.

One should not only contented but also grateful for what God has given him and where is has helped him to arrive. However, one should have enough discontentment to keep himself from stagnating where he has already arrived. Within the cosy cup of contentment, there should be the simmering tea of discontentment as well. And this discontentment becomes even more beautiful and powerful when its focus, naturally and progressively, shifts from narrow personal achievements of the player and contributes to a cause much bigger i.e., for winning as a team, institution or nation.

It is the inner peace and calmness that allow a player to have a good look at and feel his discontentment. And it is the initiative to respond responsibly to this discontentment that makes inner peace sustainable. Players need contentment as well as discontentment to grow. But many fail to fine-tune the harmonious relationship between the two.

One cannot focus on his games and efforts wholeheartedly unless there is peace in a player's mind and contentment in his heart. And a player won't have the necessary enthusiasm or the fuel to move on and on, unless you keep the flame of discontentment alive. A player cannot draw the necessary enthusiasm to dream and do what is possible if he allow discontentment to consume him or rather get consumed by it. A good player should keep a distance from it – the way one keep a distance from fire – so that he can use it without getting burnt. A good player should make a habit of evaluating his day's actions and performance and to refuel himself every night with discontentment over the gap that still exists between "what is" and "what should be" and with commitment to go the extra mile to bridge the gap between the two, every morning.

As the life has two aspects, happiness and sorrow, in the same way the any kind of game used to have two aspects of it i.e., win and lose. These two things decide contentment and discontentment for a good player. If player get second or third position and he feels contented with his performance, he can't do better next time. On the flip side, if a player got discontented with his performance, he will try to perform gradually better for improvement of his performance. But if a player is too much obsessed or depressed as a result of his discontentment, he may lose his further chance of attaining the goal. Conclusively, the discontentment is necessary in a player's life but too much desperation for achievement makes the life difficult and inhibit the further progress in the profession.

*"It is not up to me whether I win or lose. Ultimately, this might not be my day. And it is that philosophy towards sports, something that I really truly live by. I am emotional. I want to win. I am hungry. I am a competitor. I have that fire. But deep down, I truly enjoy the art of competing so much more than the result." - Apolo Anton Ohno*

-Ms. Sonali Barnwal





## Sports and health - Health Benefits

“All work and no play make Jack a dull boy “

Sports play a vital role in modern contemporary society. It is an integral part of life, essential for the physical and mental well being of individuals. It is the area where people socially interact. The most common saying “Healthy mind lives in a Healthy body” is true because for a man to be successful his physical as well as his mental state should be well.

As time passes by and as the technology is advancing rapidly, the tradition of playing outside is diminished rapidly. Many people are concentrating on their electronic devices since ages as early as two. Sports are the most effective way that children can express their joy and brilliance.

People of all ages should participate .Even business executives and others engaged in serious and very responsible activities should play games in their spare time to relax themselves. It is essential for their good health, physical fitness and mental alertness. In schools, colleges, yoga, karate, taekwondo, swimming are being incorporated in the curriculum.

In America, youth sports have become a trend. It has become so ingrained in their culture that toddlers have begun to experience it. Studies have shown that youth team sports have tremendous positive impacts on a child’s social development.

Playing sports and games is not only for fun and recreation, it has many health benefits. The studies in the American Journal of Epidemiology suggest that physical activity actually help to develop collateral circulation to the heart. Thus prevents heart attack by supplying oxygen to the heart when there is a great demand for it.

Obesity is the most important independent preventable risk factor of type II Diabetes Mellitus. Playing games burns the excess calories and helps to maintain weight. It improves insulin resistance, thus enables the endogenous insulin to work properly. After smoking, obesity is the second most important risk factor for cancer. Weight reduction leads to lowering of blood pressure. Practicing DASH diet reduce body weight, lower blood pressure, lower LDL cholesterol and reduce cancer specially colon cancer. It is seen that LDL or bad cholesterol level in sedentary people is much higher while HDL or good cholesterol level is significantly higher in athletes.

Endurance type of exercise increases muscle bulk and joint flexibility. Thus there is a lesser chance of injury .By improving bone strength, it keeps osteoporosis at bay.

Sports and games improve immunity .So the sports person suffers less. Playing sports increases sweat production and removes toxins from the body. Thus you will be rejuvenated. Playing any kind of sports helps in building self –esteem and brings positive attitude to your life. Discipline becomes a natural part of life when you start playing sports. People who indulge in sports feel healthier and develop healthier relationships with other people because a positive, team based outlook, a sportsman spirit is being instilled in them. It makes you calm and goal oriented.

A thorough health checkup is mandatory for the middle aged people who will participate in the sports for the first time. During playing utmost care should be taken to prevent injury. Do stretching and warm up exercise before playing to prevent cramps. Maintain hydration.

Because health is the cynosure amidst all wealth, beauty and happiness. Because health is what fuels the train of our life to progress, to reach the zenith of success .Believe that your body is a precious gift. Health is what makes the mind believe. And the body achieves what the mind believes.

Dr. Swati Saha



## Family and Sports

There are few ideas which are as widely and uncritically accepted as that linking sports and exercise with good health. It is also a well established fact that physical activity results in an improvement of the physical state, enhances confidence and self- esteem and boosts social and cognitive development. Contrarily, a lack of sport- activity is linked to higher rates of mortality and obesity, and higher risks of diseases, like diabetes, dislipidimea, hypothyroidism and hypertension. A positive association between sports participation and health is broadly accepted. It is also established that the positive association between sports and subjective health is robust not spurious. Study suggests that people who were active in other physical activities and sports dramatically reduce their risk of many diseases, including heart disease, osteoporosis, PCOD, obesity, other lifestyle diseases and also reduce the risk of emotional problems such as stress, anxiety and depression. Habits are established in early life and evidence suggests that physically active children are more likely to mature into physically active adults.

### Benefits of sports in family including children's

- Reduced risk of obesity
- Increased cardiovascular fitness
- Improved coordination and balance
- Healthy growth of muscles , bones , ligaments and tendons
- A greater ability to physically relax and, therefore , avoid the complications of chronic muscular tension (such as headache and back)
- Improved sleep
- Mental health and benefits, such as greater confidence
- Improved social skills
- Improved personal skills, including cooperation and leadership.

### Sedentary lifestyle in family including children's

- Homework
- Computer Games
- Internet use
- Television
- Smart phones addiction ( Nomo phobia – fear of being without your Smartphone)
- Eating processed food (Pasta, Pizza, Pastries etc.) and high calorie food.

### Recommendations

- Children and young people should participate in at least 60 minutes (up to several minutes) of moderate to vigorous- intensity physical activity every day.
- Children and young people should not spend more than two hours a day using electronic media for entertainment ( such as computer games, internet ,TV, Smart phones), particularly during daylight.
- Reducing inactivity may be more effective in achieving overall increase in energy levels in young children than putting the emphasis on increasing involvement in sporting activities.

Parent's role



- Plan some family outings that offer opportunities of physical activity such as playing sports together.
- Be physically active – Lead by example
- Please encourage your child to walk or ride their bicycle for short trips, rather than rely on you to drive them.
- Encourage and support your child's efforts in sports. Make sure you're there at each match, cheering them on from the sidelines.
- Set time limits on sedentary activities like computer games, television and smart phones.
- Try to consult your child school on ways to encourage greater participation in sports and physical activities.
- Make sure to thoroughly war up and cool down by using good form and technique.

TO KEEP THE BODY IN GOOD HEALTH IS A DUTY .... OTHERWISE WE SHALL NOT BE ABLE TO KEEP OUR MIND STRONG AND CLEAR. - Buddha

Dr. Vishal Anand





# नवीन भारत की नवीन सोच



## अनुसंधान एवं विकास के मुख्य क्षेत्र

- उन्नत भवन सामग्रियाँ
- नैनो टेक्नोलॉजी
- पर्यावरणीय प्रभाव मूल्यांकन एवं प्रबंधन
- आपदा न्यूनीकरण तथा प्रबंधन
- ऊर्जा दक्ष भवन
- संरचनाओं का स्वास्थ्य प्रबोधन
- प्रदर्शनियों, संगोष्ठियों, कार्यगोष्ठियों एवं जागरूकता अभियानों द्वारा विकास एवं अनुसंधान प्रौद्योगिकियों का प्रसार



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**CSIR-Central Building Research Institute, Roorkee-247667**

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 email: director@cbrimail.com, Website: www.cbri.res.in





सीएसआईआर केंद्रीय सड़क अनुसंधान संस्थान (सीआरआरआई) की स्थापना भारत सरकार के वैज्ञानिक एवं औद्योगिक अनुसंधान परिषद की एक घटक प्रयोगशाला के रूप में सन् 1952 में दिल्ली में की गई। संस्थान राजमार्ग और सड़क परिवहन प्रौद्योगिकी के प्रमुख क्षेत्रों में व्यवसाय को उच्च गुणवत्ता और विश्व स्तर पर स्वीकार्य अनुसंधान और परामर्श सेवाएं प्रदान करता है। सीएसआईआर - सीआरआरआई एक आईएसओ 9001 प्रमाणपत्र प्राप्त संस्थान है। संस्थान में अनुसंधान और विकास क्षेत्रों में सड़क और सड़क परिवहन के सभी पहलुओं पर अनुसंधान और विकास कार्य संपन्न किए जाते हैं।



### R&D CAPABILITIES & AREAS OF CONSULTANCY

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>□ Analysis and Design of Bridges</li> <li>□ Distress Diagnostics and Rehabilitation Measures for Bridges</li> <li>□ Design of Ground Improvement Measures</li> <li>□ Landslide Investigation, Hazard Zonation and Mitigation Technologies</li> <li>□ Soil Nailing and Soil Reinforcement</li> <li>□ Use of Marginal and Waste Materials for Construction</li> <li>□ Design of Flexible and Rigid Pavement</li> <li>□ Evaluation and Standardization of Road Construction Materials</li> <li>□ Development of New and High Performance Materials</li> <li>□ Structure and Functional Evaluation of Pavement</li> <li>□ Quality Control and Quality Assurance Aspects</li> <li>□ Evolving Pavement Management Strategies</li> </ul> | <ul style="list-style-type: none"> <li>□ GIS and Remote Sensing Applications in Road Sector</li> <li>□ Rural Road Network Planning</li> <li>□ Road Development Policy Studies</li> <li>□ Application of HDM-4 for Road Development Plans</li> <li>□ Road Safety Audit</li> <li>□ Design and Management of Traffic Intersections and Interchanges</li> <li>□ Intelligent Transport System</li> <li>□ Traffic Safety and Analysis</li> <li>□ Control and Management of Environmental Pollution</li> <li>□ Green Highways</li> <li>□ Transport System Planning and Environmental Impact of Road Traffic System</li> <li>□ Customised Training Programmes for Highway and Transportation Engineers</li> </ul> |
|--|---|



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CSIR-IIITR, Lucknow is the only multidisciplinary research institute in the field of toxicology in South-East Asia with the motto:

***"Safety to environment & health and service to industry".***



### R & D Areas

- Food, Drug & Chemical Toxicology
- Environmental Toxicology
- Regulatory Toxicology
- Nanotherapeutics & Nanomaterial Toxicology
- Systems Toxicology & Health Risk Assessment

### R&D Partnership for Industries & Startup

- Centre for Innovation and Translational Research (CITAR)

### Services Offered

- GLP Certified Pre-clinical Toxicity Studies
- NABL (ISO/IEC 17025:2005) Accredited
- Safety/ Toxicity Evaluation of NCEs
- Water Quality Assessment and Monitoring
- Analytical Services
- Environmental Monitoring and Impact Assessment
- Information on Chemicals/Products
- Computational Predictive Toxicity Assessment

### Recognitions

- Scientific & Industrial Research Organizations (SIROs)
- UP Pollution Control Board (Water & Air)
- Indian Factories Act (Drinking water)
- Bureau of Indian Standards (Synthetic Detergents)
- Food Safety & Standards Authority of India (FSSAI)

### Technologies Developed/ Available

- Oneer- A Novel Solution for Safe Drinking Water
- Portable Water Analysis Kit
- Mobile Laboratory for Environment and Human Health
- AO Kit for Rapid Screening of Arghemone in Mustard Oil
- MO Check for Detection of Adulterant Butter Yellow in Edible Oils

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Toxicity Testing: GLP Test Facility





## CSIR-National Botanical Research Institute (Council of Scientific & Industrial Research) Lucknow - 226001



Herbal Colors for Gulal



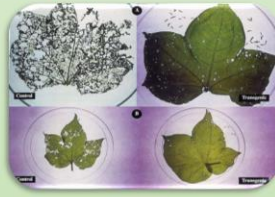
Herbal Cough Syrup



Herbal Hair Color



Whitefly Resistance Technology



Insect Resistant Bt-cotton Technology

### Technologies Available for Commercialization

- **Trichoderma Consortium Technology** for Plant Growth Promotion and Biological Control of Phytopathogenic Fungi
- **Technology Package of Bacillus Strain** for Plant Growth Promotion and Control of Phytopathogenic Fungi
- **Herbal Sindoor Technology**
- **Herbal Antioxidant Formulation**
- **A Potential Herbal Combination** for Alleviating Urolithiasis, Nephrolithiasis and Post Lithotripsy Conditions (ESWL)
- **Floral Crafts** from dehydrated Flowers & Foliage
- **Agro-Technology** for Gladiolus, Tuberose, Chrysanthemum Flowers

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Tobacco & Chemical Free Herbal Mixture



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Herbal Lipstick



Polyherbal Dental Cream



Low Grain Arsenic Rice Cultivar  
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### For details please contact

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2297804, 2205848, 2205839; Fax : 0522-2205836, 2205839  
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The CSIR-Structural Engineering Research Centre is a premier R&D Organization under the autonomous Council of Scientific and Industrial Research (CSIR), Government of India. The vision of CSIR-SERC envisages to be a global leader in structural engineering by excelling in research in frontier and cutting edge areas, and by developing competitive technologies by embracing innovative inter- and trans- disciplinary approaches for the benefit of society and industry. The thrust areas are Structural Health Monitoring & Life Extension, Disaster Mitigation, Advanced Materials for Sustainable Structures and Special- & Multi- Functional Structures. CSIR-SERC's major facilities include state-of-the-art Tower Testing & Research Station, Advanced Seismic Testing and Research Laboratory, Wind Engineering Laboratory, Fatigue & Fracture Laboratory, Advanced Concrete Testing & Evaluation Laboratory, Structural Testing Laboratory, Structural Health Monitoring Laboratory, Advanced Materials Laboratory, Steel Structures Laboratory, Theoretical & Computational Mechanics Laboratory and Special & Multifunctional Structures Laboratory. Notable technologies developed are given below:



### Earthquake Protection Devices

Device for energy dissipation with re-centering features. Used in bridges, power plant piping, building structures & systems and in on-shore & off-shore structures. Used for existing or new structures and for retrofitting purposes. With suitable modifications can be used in vibration control of non-structural elements.

### Lightweight Prefabricated Building Systems Using EPS Panels

Panels are extremely light in weight and are easy to handle, transport and erect. They are a unique combination of strength, lightweight, ductility and durability with low material consumption, reduced cost and eco-friendliness. The system provides satisfactory thermal and acoustic insulation for the constructed facility and are resistant to natural disasters.

### Textile Reinforced Concrete Prototyping Technology

An apparatus for producing textile/fabric reinforced composite sheets and products. Can be used to make products for different structural and non-structural applications without the use of moulds.

### Laced Steel Concrete Composite

The system imparts enhanced strength, deformation and rotational capabilities to the structures and hence, efficient to resist suddenly applied dynamic loads such as blast, earthquake, etc. It can be used in construction of large explosive/ chemical storage facility.

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Innovative pre-cast solution to meet toilet demands under Swachh Bharat Scheme. Light-weight, non-corrosive and durable. Ecologically safe and sustainable sanitation. Assembling/erection of the panels for the construction of toilet can be completed within 3-4 hours without use of cranes and with less manpower.

### SERCular Housing Technology for Affordable Housing

Innovative concept of building system with exclusive self-locking blocks facilitates speedy construction. Economical, affordable and disaster resistant housing for the poor rural families.

### Dura-Tanks for Clean Water

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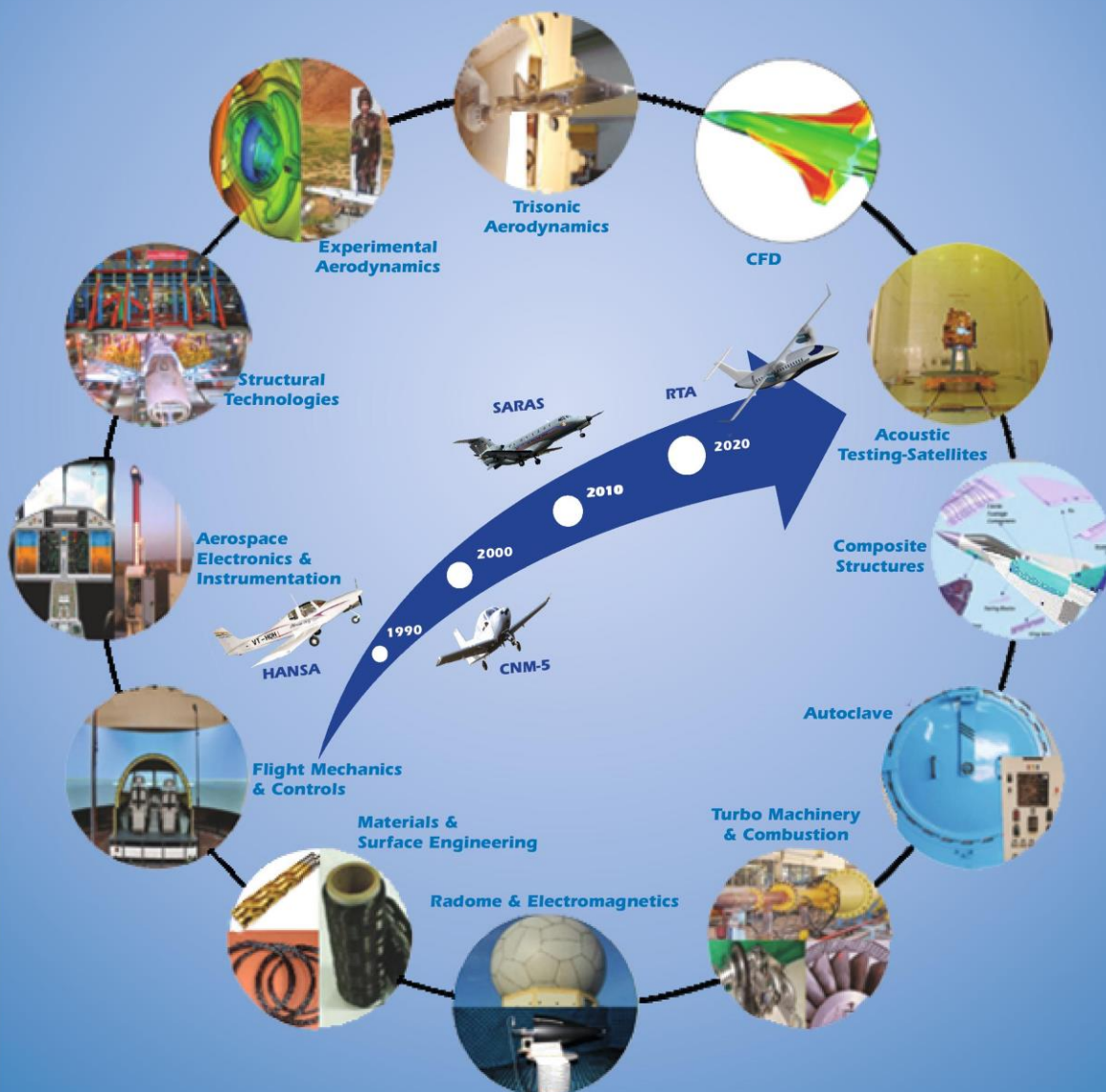




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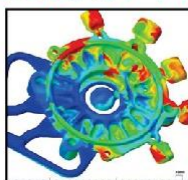
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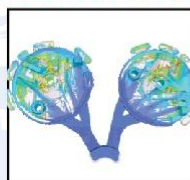
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**FLOW-3D CAST** developed by Flow Science Inc., USA provides engineers and designers with highly-accurate flow and solidification results. With **FLOW-3D CAST**, quality and productivity issues can be solved in less time and with lower costs by evaluating alternative concepts with simulation before die steel is out or moulds are modified. And, the effectiveness of new tool development can be improved by solving problems before production begins.

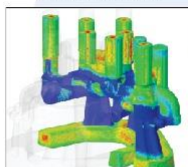
## DEFECT PREDICTIONS



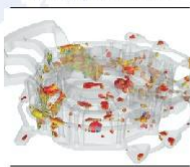
Oxide Formation



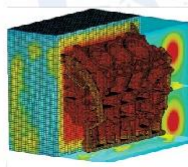
Air Entrainment



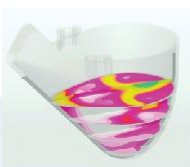
Microporosity



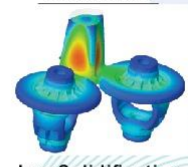
Solidification & Shrinkage



Thermal Stress



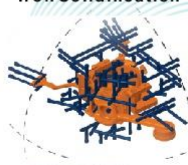
Ladle & Turbulence



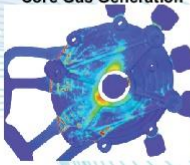
Iron Solidification



Core Gas Generation



Cooling Channels



Die Erosion

## Core Gas Generation

The core gas model predicts the effects of gas generation during the pouring & solidification process for resin-bonded cores. Chemical binders in sand can produce gas when heated by the molten metal &, if not vented adequately, the gas may flow into the casting resulting in porosity defects. The core gas model predicts the location & quantity of these gas defects & helps to design core venting that will effectively evacuate all the binder product gas from the cores.

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## Oxide Formation

**FLOW-3D CAST's** defect tracking capabilities help predict where oxides are most likely to occur during the filling process. Oxides form due to an exposed molten metal surface to air & can end up in undesirable locations. The final location of the defects depends on the overall flow conditions, turbulent mixing, fluid jetting and impingement.

**FLOW-3D CAST** accurately tracks these oxides and their final locations.

## Air Entrainment

The air entrainment model in **FLOW-3D CAST** is used to estimate the amount of entrained air that occurs in metal casting systems during filling. This model is based on simple physical mechanisms, and is an excellent predictor of porosity.

## Microporosity

**FLOW-3D CAST** has a model specially designed to predict the occurrence & location of microporosity occurring late in the solidification stage. With this info, you can make design adjustments and avoid critical defects.

## Solidification and Shrinkage

**FLOW-3D CAST** has a complete suite of tools for modeling solidification & pinpointing areas of excessive shrinkage or porosity, allowing you to determine placement of risers to assure such defects are alleviated.

## Thermal Stress

**FLOW-3D CAST's** thermal stress model enables you to predict precisely where stresses will occur and how a casting distorts. Stresses are simultaneously computed in the mold & in solidifying metal with simple options for the interaction between them.

## Iron Solidification

The iron solidification model describes the eutectic & near-eutectic solidification of cast irons capturing the formation of austenite, graphite & carbide & the density variations that occur during the cooling process as these different phases form.

## Die Erosion

One of the causes of die erosion is cavitation, which occurs when metal pressure drops below a critical level due to flow separation & high velocities. This unsteady flow can be very damaging to dies.

**FLOW-3D CAST's** cavitation potential model helps you determine where cavitation-induced die erosion might occur & make adjustments before the actual casting.

## Cooling Channels

Cooling channels are used in die casting & permanent mold casting for thermal management to prevent the overheating of the die and to control solidification. **FLOW-3D CAST's** cooling channel model includes time-dependent temperature & heat transfer coefficients & thermocouple-controlled activation for cooling and heating.



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Council of Scientific and Industrial Research  
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### CORE AREA COMPETENCY

- Material characterization
- Mineral beneficiation, pelletisation and agglomeration
- Extraction of metals from ores, sludge and scraps
- Plasma processing of materials
- Nanomaterials, bio materials and energy materials
- Coatings, thin films, alloys, composites
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- Drinking water filtration and wastewater recycling
- Environmental impact assessment
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- Testing of water quality and components in ores, rocks, soils, slags, and processed products
- Skill development

### FACILITIES

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- SOPs for extraction of materials from industrial wastes
- Coal characterization
- Processing of natural gemstones for value addition
- State-of-the art analytical equipments for characterization of ores, minerals & materials
- Commercial scale production facility for fly ash and red mud building materials
- Mechanical workshop for design and fabrication
- Biomass operated cook stoves and testing lab
- Technology validation



Fly Ash & Red Mud Bricks



EPMA



XRD



Plasma Spray Coating



Column Flotation Unit



Hydrogen Plasma Reactor



TEM



X-ray Micro CT



Microwave Plasma Reactor



Scanning Electron Microscope



#### CONTACT US

DIRECTOR, CSIR-Institute of Minerals & Materials Technology  
Bhubaneswar – 751013  
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## सीएसआइआर-भारतीय पेट्रोलियम संस्थान CSIR-Indian Institute of Petroleum



CSIR-Indian Institute of Petroleum (CSIR-IIP), an ISO 9001:2008 accredited organization, is a premier National Laboratory engaged in Research and Development activities in the downstream sector of the Petroleum Industry. It has more than 2100 publications in National and International Journals, more than 320 patents (India and abroad), several processes and products and a large number of commercialized technologies/processes/products to its credit. The Institute has the distinction of winning several awards including the prestigious CSIR Technology Award (in Chemical Sector) a number of times, since its inception in 1990. It conducts a vibrant training programme catering to various sectors of the energy industry.

### CORE COMPETENCE

- Advanced separation processes
- Catalyst and conversion processes
- Renewable fuels & lubricants
- Industrial and domestic combustion
- Tribological studies
- Molecular-level characterization of petroleum and related products
- CO<sub>2</sub> utilization and Petrochemicals from refinery streams
- Process development for petrochemicals and intermediates and for biocatalytic processes
- Development of additives and speciality chemicals for the hydrocarbon sector
- Crude evaluation and physico-chemical characterization of petroleum products
- IC engine studies including emissions and alternative fuels studies

### TECHNOLOGIES READY FOR COMMERCIALIZATION

#### Refining

- Oxidative desulphurization of diesel
- Super-critical propane deasphalting
- Ultra-low deep desulphurization
- Light naphtha to LPG and gasoline (NTGG)
- Catalyst and process for removal of hydrogen sulphide from flue gas streams with simultaneous production of sulphur
- Regenerative process for removal of sulphur-dioxide from lean gas streams
- Adsorptive desulphurization of FCC gasoline and diesel
- Re-extraction technology for dearomatization of middle distillates
- Recovery of CO<sub>2</sub> from flue gas by adsorption and absorption route
- Isomerization of light naphtha
- Room-temperature biodiesel process

#### BIOFUELS & BIOLUBRICANTS

- Biodiesel from vegetable oils, waste oils and fats
- Biolubricants from vegetable oils, starch and cellulose, glycerol

#### SPECIALTY CHEMICALS, ADDITIVES AND CATALYSTS

- Microcrystalline wax from crude oil tank bottoms
- Petroleum-based electrode pitches
- Specialty carbon materials
- Specialty chemicals and products from Jojoba oil
- Production of Grade-A helium

#### BIO-PROCESSES

- Biosurfactant for recovery of oil from crude oil tank bottom sludge
- Bioethanol production from biomass by micro-organism

#### WASTE PLASTICS TO FUEL AND AROMATICS (CSIR-IIP- GAIL PROCESS)

#### Salient Features

- Exclusive production of either gasoline or diesel or aromatics alongwith LPG
- Liquid fuel (gasoline and diesel) meeting standard fuel specifications
- Environment-friendly process
- Scalable in batch and continuous mode
- All polyolefinic wastes, accounting for 65-70% of total plastic wastes, can be used
- TTPD demo plant being set-up at CSIR-IIP

### RECENT MAJOR TECHNOLOGIES

- Wax De-oiling Technology, NRL Assam
- Benzene Recovery Unit (BRU), RIL, Jamnagar
- Visbreaking with Soaker Internal Technology at the Haldia Refinery
- LPG Sweetening Catalyst 'THOXCAT ES'

### TRAINING PROGRAMMES OFFERED

- Petroleum Refining Technology (2-7 weeks)
- Vehicular Pollution
- Operation and Maintenance of CFR Engines
- Deposit Rating of Small SI Engine Components
- Vehicular Emission & Control
- Testing of Bituminous Materials & Instrumental Techniques
- Analysis of Petroleum and Petroleum Products
- Solvent Extraction Technology
- Heat Exchanger: Design, Operation and Trouble Shooting
- Corrosion Control & Selection of Material
- Advances in Processing & Handling of Heavy Crudes
- Crude Assay using Physico-chemical and Analytical Methods

### CSIR-IIP SKILL DEVELOPMENT PROGRAMME CSIR-IIP would be running following Skill Development Programmes.

- Analytical Chemistry, Tools and Techniques
- Glass Blowing
- Refrigeration & Air-conditioning
- Current Trends in Library and Information Science
- Testing of Petroleum Products
- Industrial Aspects of Recombinant Biotechnology
- Fitting-cum-Welding

For detailed information please contact:

**DIRECTOR, CSIR-INDIAN INSTITUTE OF PETROLEUM**

PO-IIP, Dehradun -248005 (Uttarakhand), India

Phone: +91-135-2660205, Fax No.: +91-135-2660098, Email: [director@iip.res.in](mailto:director@iip.res.in), website: [www.iip.res.in](http://www.iip.res.in)





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## One integrated solution from Siemens



**Abstract** Human resource management (HRM) practices are the backbone of an organization's success. However, the effectiveness of HRM practices is contingent on the organization's culture. This study examines the relationship between HRM practices and organizational culture. The study finds that HRM practices are more effective in organizations with a strong culture. The study also finds that HRM practices are more effective in organizations with a culture that is consistent with the practices. The study concludes that HRM practices should be tailored to the organization's culture to be effective.



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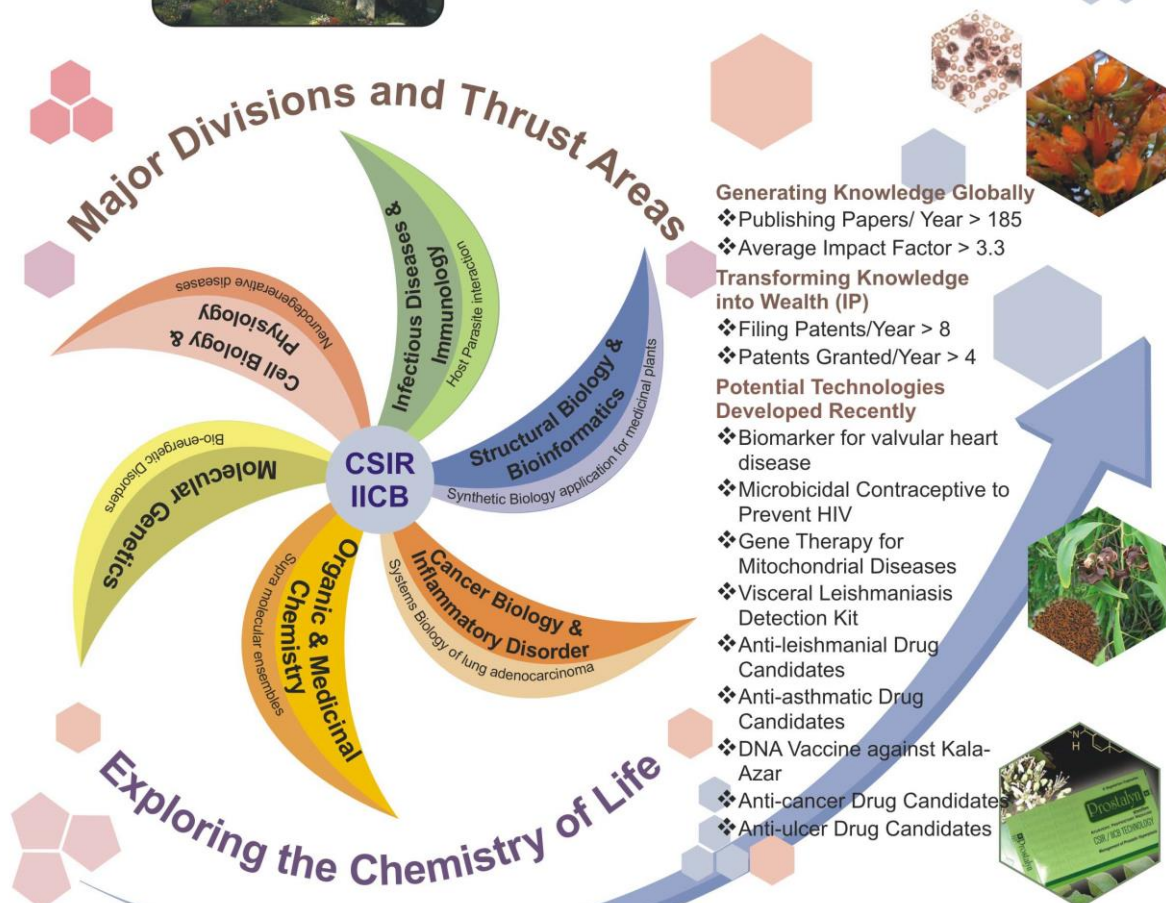




## CSIR-INDIAN INSTITUTE OF CHEMICAL BIOLOGY



The Institute was established in 1935 as the Indian Institute of Medical Research and became a unit of CSIR in 1956. It owed its origin to the inspiration of prominent personalities like Gurudev Rabindranath Tagore, Acharya Prafulla Chandra Roy, Pandit Jawaharlal Nehru and many others. Today, by its mandate CSIR-IICB is engaged in research on diseases and certain biological problems of global interest.



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## Inauguration Photographs





## Event Photographs





## खेल गीत-2

ऊँzzzzz हूँzzzzz  
ऊँzzzzz हूँzz हूँzz हूँzz हूँzz  
ऊँzz हूँzz ऊँzz हूँzz ऊँzz हूँzz  
आए हो दुर्गापुर में खेलों में भाग लेने  
म्यूजिक  
आए हो दुर्गापुर में खेलों में भाग लेने  
आए हो दुर्गापुर में खेलों में भाग लेने  
अब खेलो ऐसा जमकेzzz हाzzzzये  
अब खेलो ऐसा जमके  
दिलों पर राज करके  
आए हो दुर्गापुर में खेलों में भाग लेनेzzz  
म्यूजिक  
आंखों में ख्वाब बुन लो  
और मन में जोश भर लो  
आंखों में ख्वाब बुन लो  
और मन में जोश भर लो  
अब खेलो ऐसा जमकेzzz हाzzzzये  
अब खेलो ऐसा जमके  
दिलों पर राज करके  
आए हो दुर्गापुर में खेलों में भाग लेने  
म्यूजिक  
इस्पात नगरी हो या द्रोण नगरी हो  
म्यूजिक  
इस्पात नगरी हो या द्रोण नगरी हो  
कलिंग नगरी हो या खुशियों का नगरी हो  
म्यूजिक  
तहजीब नगर संग नवाब बन के जियो  
म्यूजिक  
जोरहाट संग बैठे चाय की चुस्की ले ले  
दिल्ली के संग मिलकेzzz हाzzzzये  
दिल्ली के संग मिलके दिलदार बनके जाओ  
आए हो दुर्गापुर में खेलों में भाग लेनेzz  
म्यूजिक  
दिल में प्यार भर लो  
और मीठे वचन बोलो

म्यूजिक  
दिल में प्यार भर लो  
और मीठे वचन बोलो  
भाईचारा का वो मंत्र मन में जापो  
म्यूजिक  
भेदभाव भूलो दोस्ती का हाथ थामो  
म्यूजिक  
भेदभाव भूलो दोस्ती का हाथ थामो  
अब खेलो ऐसा जमकेzzz हाzzzzये  
अब खेलो ऐसा जमके  
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अब खेलो ऐसा जमके  
दिलो पे राज करके  
आए हो दुर्गापुर में खेलों में भाग लेने  
आए हो दुर्गापुर में खेलों में भाग लेने  
आए हो दुर्गापुर में खेलों में भाग लेने  
आए हो दुर्गापुर में खेलों में भाग लेने

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**अध्यक्ष, सांस्कृतिक आयोजन समिति,**

**एसएसएमबीटी-2018**





## खेल गीत

स्वर्ण जयंती के खेल कुंभ में करके सबका स्वागत,  
मां दुर्गा की चरण चूम के आओ करे शुरुआत ।

कोरस: जय दुर्गा माँ की

म्यूजिक

ओ खाए के बंगलार ए रोस गुल्ला

म्यूजिक

ओ खाए के बंगलार ए रोस गुल्ला,

घुमा के अपनी अकल के बल्ला,

फिर तो आइसन करो धमाल,

हो जाए हर दिल मालामाल ।

खिलाड़ी एसएसबीएमटी वाला,

खिलाड़ी एसएसबीएमटी वाला,

ओ खाए के बंगलार ए रोस गुल्ला,

घुमा के अपनी अकल के बल्ला,

म्यूजिक

इन चार दिनों मेंSSSS खेलों का मेला सजेगा।

म्यूजिक

वाह वाह

हर खिलाड़ियों काSSSS सपने साकार होगा,

चौके छक्के होगा और गेम प्वाइंट्स भी होगा ।

म्यूजिक.....वाह वाह

चौके छक्के होगा और गेम प्वाइंट्स भी होगा,

एलएसजीएस होगा और नोकझोंक भी होगा,

शाम होते ही, शाम होते ही खिलता गुलाSSSब

खिलाड़ी एसएसबीएमटी वाला,

खिलाड़ी एसएसबीएमटी वालाSSS हा ।

कोरस:- ओ दादा हमरा संग नाचSSS हो

नाचSSSS ,

खाए के बंगलार ए रोस गुल्ला,

घुमा के अपनी अकल के बल्ला,

म्यूजिक

ये महोत्सव तोSSS एकत्व का प्रतीक है।

एक दूसरो सेSSS, पहचान का जरिया है।

खेलकूद भी होगा, हार जीत भी होगा,

म्यूजिक.....वाह वाह

खेलकूद भी होगा, और हार जीत भी होगा,

खाना-पीना के संग, नाच-गाना होगा,

फिर से मिलने का, फिर से मिलने का वादा

रहाSSS

खिलाड़ी एसएसबीएमटी वाला ।

खिलाड़ी एसएसबीएमटी वाला ।

खाए के बंगलार ए रोस गुल्ला,

घुमा के अपनी अकल के बल्ला,

खाए के बंगलार ए रोस गुल्ला,

घुमा के अपनी अकल के बल्ला,

फिर तो आइसन करो धमाल,

हो जाए हर दिल मालामाल।

खिलाड़ी एसएसबीएमटी वाला,

खिलाड़ी एसएसबीएमटी वाला,

ओ खिलाड़ी एसएसबीएमटी वाला।

गीतकार एवं संगीतकार:

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एसएसएमबीटी-2018





## Acknowledgements

We, on behalf of the Organising Committee, 50<sup>th</sup> Shanti Swarup Bhatnagar Memorial Tournament 2018, Zonal-IV, sincerely acknowledge the valuable and timely supports by all the participating laboratories, sports persons, advertisers and all our colleagues involved during composition and publication of this souvenir as a memorandum of this national event. We wish all the participants a grand success.

With best compliments from:

### Souvenir Committee

Anupam Sinha

Rajesh P Barnwal

Pratyush Kumar Pal

Puja Banerjee



## Inauguration/ Event Photographs



# सीएसआईआर - केन्द्रीय खनन एवं ईंधन अनुसंधान संस्थान, धनबाद

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CSIR-CIMFR has been formed after integrating the core competencies of erstwhile Central Mining Research Institute (CMRI) and Central Fuel Research Institute (CFRI) both at Dhanbad with the Vision "to be an internationally acclaimed mining and fuel research organisation"



## Major Contributions of CSIR-CIMFR are:

- Development of Safe Methods and Assessment of stability of Mine Workings
- Design of Stowing Systems for Stabilization of Mine Workings
- Design of Safe Blasting Patterns of Mines
- Assessment of Subsidence and Ground Movement due to Mining
- Design of Environmental Management Plan for Eco-Friendly Mining and Coal Based Industries
- Investigations on Methane Emission due to Mining and GHG Inventories

- Resource Evaluation and Reservoir Modeling of Coal bed Methane
- Evolution of Methods to Control Mine Fire
- Design of Support Systems for Mines
- Design & Development of Equipment, Instruments and Components for Safe Mining
- Coal Quality Assessment
- Basic Studies on Coal Science
- Coal Preparation
- Coal Carbonization
- Coal Liquefaction – Direct and Indirect routes
- Coal Gasification
- Coal Combustion
- Non Fuel Uses of Coal/ Value Added Chemicals
- Fly Ash Utilization



Coal-to-Liquid (CTL) Pilot Plant Designed and Developed by CSIR-CIMFR



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investigations on coals for cleaning potentialities, various laboratory Tests on coal preparation, Coal washing Pilot plant for coarse and Fine Coal Beneficiation.

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**Health assurance of boiler and turbine components**

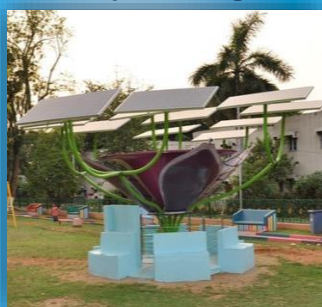


**Residual life assessment of critical components**

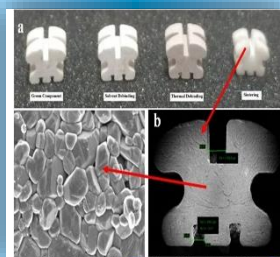


**Failure analysis of critical engineering components**

**Surveillance-enabled solar lotus for park and garden**



**Shadow-free high power solar tree**



**Dental color tooth bracket**

**Krishishakti :  
The small tractor for small farmer**



**Sonalika:  
The tractor with power**



**Micro fuel cell**

**Arsenic filter : Live disease free**



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