

NEWSLETTER

# Sports Engineering Association



# SportE



Volume . 1

Issue . 4

August 2023

<http://sportsea.org/>



## FROM THE DESK OF CHIEF EDITORS



**Dr. Abhijeet Digalwar**



**Dr. Arun Kumar Jalan**



**Dr. Lalit Sharma**

Dear Readers,

We are delighted to announce the release of the fourth issue of the SEA newsletter, "SportE," for the year 2023. On behalf of the Sports Engineering Association (SEA) members and the dedicated editorial team, we extend our heartfelt gratitude to the contributors of this newsletter.

In this edition of SportE, we are excited to provide an outline of the various activities in which SEA members have been dynamically engaged since the release of our third newsletter. One section of the newsletter spotlights the impressive accomplishments and invaluable contributions of our members in various SEA activities such as workshops, seminars, talks, and more. This section serves as evidence of their dedication and hard work.

Another section highlights the significant contributions and participation of students. Students will have the opportunity to participate in an engaging quiz, designed to promote awareness of the fascinating intersection of science and sports. We firmly believe that by encouraging students to explore this field, we not only expand their knowledge but also inspire them to pursue careers in sports engineering.

One segment of the newsletter introduces the new members of SEA and offers valuable insights into future opportunities available to SEA members. We remain committed to nurturing the talent and potential of students, and therefore, we are dedicated to sharing information about internships, research programs, scholarships, and other avenues that can help them advance their careers in sports engineering. The enhanced student section will serve as a valuable resource for students, further strengthening their engagement and involvement within the Sports Engineering Association.

We hope you enjoy reading this edition and find it enlightening. Your feedback and suggestions are invaluable to us as we continue to strive for excellence in promoting the application of engineering in the world of sports.

## MESSAGE



**Prof. G Sundar**

**Director, BITS Pilani, Hyderabad Campus**

**Director, Off - Campus Programmes and Industry Engagement**

I take immense pleasure in writing this message of goodwill for the fourth edition of SportE brought out by SEA. Sports aim to develop and maintain physical prowess, and put it to use in healthy competition to provide entertainment. In so doing it is important that the manner in which the activities are carried out, and the equipment and facilities used, are safe and enhance performance. This is what the discipline of sports engineering endeavors to do by applying the principles of engineering and science to sports. I compliment SEA in ensuring that the student and academic community are kept abreast of the importance, of, and the developments in this discipline.

## MESSAGE FROM MEMBER



**Prof. Abhijeet K. Digalwar**  
**Professor and Head Research**  
**Symbiosis International (Deemed University) Pune**  
**Nagpur Campus, Nagpur**

The 2030 Agenda for Sustainable Development represents a call to transformative action for individuals, organizations, and governments in critical areas essential for the sustainability of humanity and the planet. The Sustainable Development Goals (SDGs) have been established with the aim of guiding policy development and investment until 2030 to address pressing global issues. These include promoting health and well-being at all ages (SDG 3), ensuring universal access to education (SDG 4), and fostering partnerships (SDG 17).

To accomplish these goals and targets, a defined, interdependent, and multidisciplinary approach is necessary. Sport also plays a significant role in enabling sustainable development. We acknowledge the growing contribution of sports in achieving development and peace, as it promotes tolerance, and respect, and contributes to health, education, and social inclusion objectives.

To increase awareness about sports in society, it is essential to disseminate information about sports and related fields. Sports engineers, for instance, are responsible for designing and constructing new equipment tailored to athletes' needs. Engineering and technology undoubtedly play a crucial role not only in improving athletes' performance but also in making sports more enjoyable and safe.

In pursuit of excellence in sports and the promotion of engineering in the world of sports, SEA provides valuable insights and opportunities to its members. SEA is dedicated to nurturing the talent and potential of students. Our SEA members tirelessly work to promote the application of engineering and science in sports through various conferences, workshops, seminars, and talks nationwide. We also share information about internships, research programs, scholarships, and other avenues to help students advance their careers in sports engineering.

I am confident that SEA will continue to be guided by its core values and wish you all success in your future endeavors.

## A brief NOTE from the Founder Director, SEA, India

**The new Olympic motto: “Faster, Higher, Stronger – Together”.**

**Solidarity fuels our mission to make the world a better place through sport. We can only go faster, we can only aim higher, we can only become stronger by standing together — in solidarity.**

*“This is not the Education but the Practice that makes you "PERFECT"”*

Education, of course is an important thing in our life but alone it cannot take us to our goal. We have to convert the education into action which needs regular practice to succeed in life. Ask any athlete who knows better how they put everything together into practice to reach the Olympics. Regular practice in any field helps you acquiring mastery and brings perfection. But mere practice will never make you perfect unless you follow the science of perfect practice. There are external forces (importantly force of gravity, air/water resistance (fluid resistance) in our physical environment which we always encounter in our activities of daily living. The external forces that we cannot control, have serious effects on human performance. But in sports an athlete has to manipulate their body segments or objects to have less effects of external forces on their body surface so that they can run faster, they can jump higher and they can act stronger which we call it “technique”. And practicing the techniques with accuracy and consistency makes us success in our respective field is called “Performance”. However, in the process of practicing the techniques a coach cannot track (with their naked eye) the sports movements or kinetic and kinematic sequence (force & Motion) which travels through the body segments or objects during the performance. In such case the coaches need help of technology to understand the movements so that they can correct them accordingly and make the techniques perfect for success. Hence, we need the application of engineering & science to assess the performance of both the athletes and sports equipment by means of design, technology and research for helping coaches to enhance performance of their athletes’ in sports. Thus Sports Engineering Association (SEA) India is the only platform in India where the faculty from engineering/science and sports can interact and solve the sporting problems indigenously for enhancement of sports performance and reduction of sports injuries. The 4th issue of the newsletter “SportE” we are releasing which will showcase the activities of the SEA, India. We invite faculty from various engineering /science disciplines and sports to join us in this endeavor so that we collectively can help the coaches and athletes in sports as a whole.

**Dr Pintu Modak**

Founder Director, SEA, India.

## TECHNICAL EVENT ORGANISED

### PHYSPO EVENT FOR CBSC SCHOOL STUDENTS

The workshop "PHYSPO" organized on 17-19 July'2023 by Birla Public School (BPS) Pilani in collaboration with BITS Pilani. The theme of the workshop was "Physics of Sports".

The following Faculty were invited to deliver lectures on the theme.

Dr. Manisankar Dasgupta, Mechanical Engineering Department, BITS PILANI, Pilani Campus

Dr. Kamlesh Tiwari, Computer Science Department, BITS PILANI, Pilani Campus

Dr. Venkatesh K P Rao, Mechanical Engineering Department, BITS PILANI, Pilani Campus

Dr. Pintu Modak, Physical Education. BITS PILANI, Pilani Campus



## REFRESHER COURSE CUM WORKSHOP IN TRIPURA

Refresher course cum workshop on technical demands of sports was organized by the Youth Affairs and Sports Department, the Govt. of Tripura in collaboration with the Sports Engineering Association, India on 11th - 13th June 2023 in Agartala. In which Dr. Subir Debnath and Dr. Pintu Modak were the resource persons from the Sports Engineering Association, India.



## THE INTER BET SWIMMING COMPETITION AT BIRLA HIGH SCHOOL, PILANI

Prof. Manisankar Dasgupta and Dr. Pintu Modak were invited as special Guests at the opening ceremony of the Inter BET (Birla Education Trust) Swimming Competition held at Birla High School on 16th August 2023.





## UNVEILING OF THIRD NEWSLETTER



Third newsletter of SEA "Sport-E" unveiled by Prof. V Ramgopal Rao, Vice- Chancellor BITS Pilani, on 1<sup>st</sup> June 2023.

## AWARDS TO MEMBERS



Dr. Arijit Putatunda, the life member of SEA received National Award @ 6th PEFI National Award Ceremony 2023 for Excellence & Leadership in Physical Education & Sports at New Delhi, India from the Padmashri Dilip Tirkey (Former Indian Hockey Team Captain) on 09.07.2023

## NEW MEMBERS, LIFE TIME, SEA



**L/2023/01/06/10056**  
**Mrs. Ekta Pramod Singh**  
Faculty, Physical Education, and BCCI L2 Coach;  
NIS Coach (Cricket) DPS Jaipur, India



**L/2023/29/06/10057**  
**Dr. Tapan kumar Panigrahi**  
Dronacharya Awardee, Swimming Coach (retd)  
Underwater Sports Federation of India



**L/2023/29/06/10058**  
**Dr. Sudarsan Biswas**  
Associate Professor, Physical Education  
Visva-Bharati (A Central University), India

## NEW MEMBERS, STUDENT MEMBER, SEA



**S/2023/06/30/1011**  
**Ms. Bhumika Kathet**  
Student, Roorkee Institute of Technology, India



**S/2023/07/06/1012**  
**Mr. Kalyan Bhujel**  
Student, SSC Kshireswarnath-5,  
Mahendranagar (Dhanusha), Nepal

## OUR ASSOCIATES

1. International Sports Engineering Association (ISEA), England
2. Wool Research Association (WRA), Pune, Maharashtra, India
3. Qualisys India
4. Kistler, India
5. Shiv Naresh Sports Pvt Ltd
6. Great sports, India
7. European College of Sports Science, Germany

## STUDENT CORNER

## STUDENT QUIZ

**Winner announcement for Quiz 3 (May 2023)**

Congratulations to all the winners of Quiz-3! Total 312 participants this time. As a reward, each winner will receive a one-year student membership in the Sports Engineering Association (SEA) free of charge. This membership will provide them with the opportunity to work closely with the SEA team.

Name	Institute	Name	Institute
AAYUSH SINGH	RVITM, Bangalore	PRAJWAL M	RVITM, Bangalore
ARYAN P NAIK	RVITM, Bangalore	RASHMITHA RANI	RVITM, Bangalore
DEEPAK V. C.	RVITM, Bangalore	TEJAS HEGDE	RVITM, Bangalore
Naman Jain	BITS Pilani	VAISHNAVREDDY B.	RVITM, Bangalore
K GAGANESH	RVITM, Bangalore	ANIL BISHNOI	National Sports Univ.
NITIN KUMAR REDDY	RVITM, Bangalore	SHIKSHA	National Sports Univ.
OM DAXINI	RVITM, Bangalore	GUNATILAKE S. L.	PGIM

**Project financial support**

We encourage students from engineering and science disciplines to actively participate in various activities such as product design, movement analysis, app development, and software development. To support their involvement, we are announcing a cash support program. All student members are eligible to apply, and the application process is open throughout the year. To apply, please submit a one-page summary of your project along with your student membership number to [sportsengineeringindia@gmail.com](mailto:sportsengineeringindia@gmail.com).

Additionally, SEA (Sports Engineering Association) provides funding opportunities to student members for undertaking small projects in sports technology. We also strive to offer them a nationwide platform to showcase their development work through newsletters and conferences.

**Student Project Scheme**

The objective of this scheme is to encourage students to explore innovative technology applied in sports. Under this scheme, individual student members or groups of student members of SEA can apply for financial support of up to Rs. 10,000/- to undertake minor research projects or develop prototypes, models, or products. The duration of the projects should not exceed six months. The details of the application procedure can be found on the SEA website, <http://sportsea.org>. Full-time students in undergraduate or postgraduate programs in engineering, science, or sports science are eligible to apply after becoming student members of SEA.

**Online Quiz for Students: Quiz 4**

This Quiz is designed for students and only students can participate in the quiz. Purpose of the quiz is just to promote awareness about science and sports among the student community. No data will be stored on the website regarding your responses.

Students are required to follow the guidelines before attempting the quiz

Students are required to furnish his/her personal details.

The quiz will comprise Objective Type Multiple Choice Questions (MCQs).

Each question has four options, and the student has to click the appropriate option.

Students can attempt the quiz only once.

A quiz will open on September 7, 2023, and will close on October 15, 2023.

Winners will be informed by email in fifteen days after the quiz closes.

All winners shall be issued E-Certificates.

The first ten winners (first attempters) will be given student memberships in the Sports Engineering Association (SEA) for one year and can work closely with the team of SEA.

Decisions of the quiz organizing team will be final and binding in case of any discrepancy or dispute.

**Use the following link to participate in the online quiz:** <https://forms.gle/eDVbGMJ4v9fW3CSk9>

UPCOMING EVENTS



**BITS Pilani**  
Pilani | Dubai | Goa | Hyderabad | Mumbai



**ICSE 2023**

**3<sup>rd</sup> INTERNATIONAL CONFERENCE ON SPORTS ENGINEERING**

2<sup>nd</sup> to 4<sup>th</sup> November 2023  
at BITS Pilani, Pilani Campus, Rajasthan, India

**KEYNOTE SPEAKERS (3<sup>rd</sup> Nov 2023)**



**Prof. Rajat Moona**  
Director IIT Gandhinagar, India  
Topic: Embedded system Development in sports application



**Prof. Lloyd Smith**  
Professor Washington State University, USA  
President International Sports Engineering Association  
Topic: Exploration of research for Engineers in Sports



**Prof. David James**  
M.D. Labosport  
Ex Professor at Sheffield Hallam university, UK  
Topic: Technological advances in synthetic surfaces for sports



**Prof. Kazuya Seo**  
Professor Mechanical Engg. Kogakuin University, Tokyo, Japan  
Topic: Application of aerodynamics in sports

**PANEL DISCUSSION (2<sup>nd</sup> Nov 2023)**

**Theme: Roadmap toward Indigenous sports technology**



**Prof. A. K. Uppal**  
Former Chancellor, Jiwaji University, Former Dean LNIPE, India



**Mo. Ayaz Memon**  
Sports writer & journalist India



**Prof. Sudhirkumar Barai**  
Director BITS Pilani, Pilani Campus, India



**Col. Raj Singh Bishnoi**  
Sr. Executive Director, NSNIS Patiala, India



**Prof. David James**  
M.D. Labosport, Ex Professor at Sheffield Hallam university, UK



**Prof. Virender Ku. Dabas**  
Retired Prof LNIPE, Chief coach Indian para swimming team, India



**Ankita Das**  
Olympian, TT



**Mr. Anil Kumar**  
(Moderator, Founder Director SEA) MD Great Sports Infra

**WORKSHOP (2<sup>nd</sup> Nov 2023)**

**Theme: Advances in Sports Performance Analysis and Applied Technologies**



**Mr. Adhitya VJ Iyer**  
Sports Broadcaster & Analyst India



**Dr. Kamlesh Tiwari**  
Prof. Computer Science, BITS Pilani, India



**Dr. Ashutosh Bhatia**  
Prof. Computer Science, BITS Pilani, India

**IMPORTANT DATES**

Conference Dates: 02-04 Nov 2023  
Abstract submission last date : 15 June 2023  
Last date for Registration: 30 July 2023

**Queries related to submission**

Dr. Suvanjan Bhattacharyya:  
suvanjan.bhattacharyya@pilani.bits-pilani.ac.in  
Dr. Arun Singh:  
dr.arunsingh68@com  
Dr. Gagan Deep Meena  
gagandeep.aa@nitp.ac

**ATTENDING THE WORKSHOP WILL BENEFIT:**

1. Using mobiles in their institutions and colleges to analyse sports movements.
2. Analysing sports data to make smart judgements during or before games.
3. Evaluating the performance of athletes and assessing to improve the team performance.
4. Evaluating the strong and weak areas of the opponents to make the right decision on tactics.

**IMPORTANT LINKS & CONTACTS**

Conference Home Page: <http://icse.sportsea.org/>  
Abstract Submission: <https://forms.gle/a9wHWuV2vBxKVsn6>  
Registration: <http://icse.sportsea.org/>  
General Enquiry: [sportengineeringindia@gmail.com](mailto:sportengineeringindia@gmail.com)

Registration is open. Publication partner → Springer



Our Associates



**3<sup>rd</sup> International Conference on Sports Engineering  
November 02-04, 2023**

**VENUE : BITS PILANI CAMPUS, Rajasthan, INDIA**



**SHIVGANGA: Place for Inauguration & Gala Dinner**



**BIRLA Museum**



**Saraswati Temple**



**NAB : Hall for Paper Sessions**

BROCHURE OF 3<sup>RD</sup> INTERNATIONAL CONFERENCE**ORGANIZERS**

ICSE 2023 is jointly organized by **Sports Engineering association (SEA) India**, and **Birla Institute of Technology & Science, Pilani**, under the auspices of the **Ministry of Youth affairs and Sports, New Delhi**, with technical support from **International Sport Engineering Association, UK (ISEA)**.

**CENTRAL THEME**

**Engineering Application and Sports Performance**

**RESEARCH TRACKS**

**Computational:** Sports data analysis, Biomechanical Signal Processing, Human-Computer Interaction, Artificial intelligence, Machine learning, Match and technique analysis, Coding and app development, Predictive analytics, Sports statistics, Computer vision AI-ML for Sports; Image and video Analysis, Sporting action recognition, Internet of things etc.

**Analysis and modelling:** CFD, FEM, Aerodynamics, Thermodynamics and heat transfer, Modelling of sports equipment, Motion analysis, Testing of sports equipment, Performance measurement, Image and video Analysis, Sporting action recognition, Machine learning, Match and technique analysis etc.

**Design and development:** Sports equipment, Wearable devices. Synthetic sports flooring/surfaces, Coding and app development, Sports attires, Sports shoes, Training equipment, Sports facilities, Synthetic sports flooring, Sports teaching aids, Equipment for para athletes etc.

**Sports Performance:** Technology in sports training & performance, Talent identification, Injury prevention, Sports nutrition & technology, Computers in sports Psychology, Sports fitness, Sports management, Application of advanced tools in performance tracking etc.

**CALL FOR PAPERS**

We invite original research work in all Engineering, Technology or Data science applications in sports and Scientific analysis or application oriented research in sporting domain for the conference. All accepted abstracts with author registration will be published in ICSE-2023 proceedings and these proceedings shall become part of the ICSE Science and Technology series.

Abstract may be submitted immediately or at any point until abstract submission deadline. Submissions made electronically using [Abstract Submission Link](#) are only acceptable. Acceptance are communicated on-going basis.

**BEST PAPER AWARDS**

Each Track will have First and Second Best paper cash award of ₹15,000 and ₹10,000 respectively.

**STUDENT DESIGN AND HACKATHON CONTEST PRIZE**

The 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> position for student design contest winners will receive certificate and cash award of Rs. 25,000, 15,000, 10,000 & 5,000 respectively.

**PRE-CONFERENCE WORKSHOP**

Pre-conference workshop shall be organized on the first day of the conference. The Workshop shall cover hand-on on latest developments in sports training, performance measurement and enhancement.

**JOURNAL PUBLICATION**

Reputed publication houses like: Materials Today Proceedings (Elsevier), IOP Conference Series: Materials Science and Engineering (IOP Publishing), European College of Sports Science Journal are approached for publication of conference papers. ICSE-2023 Journal publication committee can be [contacted for more details](#).

**RESEARCH METHODOLOGY**

To promote quality research in the area of Sports Engineering and Science in India, an on-line session on "Research Methodology in Sports Engineering" will be organized in the month of February 2023 for the students and budding researchers. This session will be addressed by accomplished researchers and entrepreneurs from around the globe. It will cover Cutting edge on-going research works at various Universities. Scholarship options, Study abroad, Internship opportunities and scope of Higher studies in sports engineering will also be deliberated. The session will also cover Scientific communication skill, Modern aspects of research methodology and tools like Bibliometric, as well as Literature survey and Data gathering methodology in sports engineering. Date of the workshop will be intimated to the registered participants soon.

Register right away and free for the Research Methodology workshop: [Research Methodology workshop](#)

**REGISTRATION**

	By 30 July 2023		After 30 July 2023	
	India (₹)	Foreign (US \$)	India (₹)	Foreign (US \$)
Delegates	5000	200	6000	250
Students	3000	150	4000	200

-A group of students (>5) can request for concession

-Faculty who don't get financial assistance from their colleges can write to the organizer for special concession

-Bulk Registration: (College authorities can contact ICSE-2023)

-Delegates from SAARC Countries can avail Indian rate

Registration charges include conference kit, admission to workshops and Key note addresses, Penal discussion, 3 working lunch, and welcome dinner. Accommodation is not included in registration charges.

**Scan QR & Pay online to Register**

**IMPORTANT DATES**

All deadlines refer to Indian Standard time, that is 5 hours & 30 minutes ahead of GMT.

Conference Dates: **02 – 04 Nov 2023**

Abstract submission last date: **30 May 2023**

Notification for accepted abstract by: **15 June 2023**

Last date for registration: **30 July 2023**

Submission of full paper will be asked once abstract accepted for publication by the journals

**IMPORTANT CONTACTS AND LINKS**

- Conference Home Page: <http://icse.sportsea.org/>
- Abstract Submission: <https://forms.gle/a9wHWuV2vVbxKVsn6>
- General Queries Email: [sportsengineeringindia@gmail.com](mailto:sportsengineeringindia@gmail.com)
- Surface Mailing Address: SEA office, Room No. 2103, BITS Pilani, Rajasthan-333031 (INDIA)

**SPONSORSHIP**

ICSE-2023 and associated events will be a unique opportunity for business houses and Government agencies to showcase their products and services. The congregation will provide opportunity to network with decision makers at various Universities across India and also Sport's governing body members. The Pan-India student design contest, as part of the conference, will also be closely watched by technical campuses all over India.

**Feel free to contact us for further details at:**

[sportsengineeringindia@gmail.com](mailto:sportsengineeringindia@gmail.com) Mob: +91-9636575446

**ACCOMMODATION****Student Accommodation:**

Limited number of accommodations in Boys' and Girls' Hostel are available for accommodation of student delegates of the conference on first come first serve basis. These can be offered free of charge for full time student participants from other Indian Universities for 3 nights during the conference and is based on early registration. Dinner and Breakfast coupons at nominal charges can also be provided. Make specific request for the same during registration payment and you will be communicated confirmation message for the hostel accommodation.

**Delegates Accommodation:**

In and around Pilani (Rajasthan) there are a number of Hotels, Guest houses and Heritage *Havelies*. Delegates can find suitable accommodation of their choice and need. The Conference organizing committee maintains an updated list of such accommodations and their contacts who have track record of hosting Institute guests. Make specific request for the same during registration payment and you will be shared with the accommodation options along with special conference discounted price list. There is also limited accommodation available within the university campus.

**BITS PILANI CAMPUS**

You can expect to find a very pleasant cold and dry climate at BITS Pilani during November with day and night time temperatures around 30°C and 16°C respectively. The campus has beautiful monuments, water body, museum etc. and is itself a tourist attraction. There are well-endowed conference rooms, playgrounds and other facilities within campus. Pilani is a small educational township with many schools and colleges. By road, it is about 200 km west of New Delhi, the capital city of India, and 225 km north of Jaipur, the capital city of Rajasthan. Pilani is connected by good road and rail links with both the metro cities with International Airports. Public transport buses ply at regular interval from ISBT New Delhi and Sindhi Camp Jaipur. Taxies on hire from these cities or nearby other cities to Pilani or return are available aplenty. These days' bookings can be made using various popular cab hiring apps. The nearest railway station from University campus are Chirawa (CRWA) about 18 km and Loharu (LHU) about 23 km. that connects with Jaipur and New Delhi respectively.

Some Pictures from BITS Pilani Campus





## 3<sup>rd</sup> International Conference on Sports Engineering November 02-04, 2023

### Program Schedule (At-a-Glance)

BITS Pilani, Vidya Vihar Pilani Campus

Day I	Hr.	Thursday (02-Nov-2023)	Venue
	12:00 onwards	Reporting & Registration, Spot Registration	Outside NAB Audi
	15:00 - 17:00	Workshop: Advances in Sports Performance Analysis and Applied Technologies	Students Activities Center (SAC)
	17:00 - 17.15	Coffee Break	Outside NAB Audi
	17:30 - 18:45	Panel Discussion: Roadmap toward Indigenous sports technology	NAB auditorium
	20:00 - 21:30	Inauguration event and Gala Dinner, Dress code Formal	Shivganga

Day II	Hr.	Friday (03-Nov-2023)	Venue
	08:30 onwards	Reporting & Registration, Spot Registration, Help desk	Outside NAB Audi
	09:10 - 09:50	Keynote I ( <i>Prof. Rajat Moona</i> ) : Embedded system Development in sports application	NAB Audi
	10.00 – 10.45	Keynote II ( <i>Prof. Lloyd Smith</i> ) : Exploration of research for Engineers in Sports	NAB Audi
	10.50 – 11.00	Coffee Break	Outside NAB Audi
	11.00 – 13.00	Technical Session, Paper presentation (Parallel) I	NAB, 3 Class rooms
	13.00 – 14.00	Working Lunch	Institute Cafeteria
	14.00 – 14.30	Technology and Product demonstration	Outside NAB Audi
	14.30 – 15.10	Keynote III ( <i>Prof. Kazuya Seo</i> ) : Application of aerodynamics in sports	NAB Audi
	15.15 – 15.30	Coffee Break	Outside NAB Audi
	15.30 – 17.00	Technical Session, Paper presentation (Parallel) II	NAB, 3 Class rooms
	17.00 – 17.30	Technology and Product demonstration	Outside NAB Audi
	17.00 – 17.30	Campus visit	

Day III	Hr.	Saturday (04-Nov-2023)	Venue
	09:10 - 09:50	Keynote IV ( <i>Prof. David James</i> ) : Technological advances in synthetic surfaces for sports	NAB Audi
	10.00 – 11.00	Technical Session, Paper presentation (Parallel) III	NAB, 3 Class rooms
	11.20 – 12.45	Closing Ceremony / Valedictory / Cultural function	
	13.00 – 13.45	Working Lunch	Institute Cafeteria
	14.00 – 16.00	Conference Guided Tour around Pilani city leaves from NAB	

**Note:** delegates who wish to visit nearby cities such as Jaipur, Jaisalmer, Bikaner, Jodhpur etc. can reserve a taxi at a discounted rate from the Help Desk.



SHIVGANGA: Inauguration & Gala Dinner



NAB Audi

Pls. contact  
**Kistler Instruments India Pvt. Ltd.**  
**Head Office:**  
TB-3, TB-4, TB-5, 3rd Floor  
Crown Plaza, Sector-15 A  
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Tel: +91 129 4113555  
Fax: +91 129 4113551

**Branch Office**  
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11/2, MIDC, Bhosari  
Pune-411026, india  
Tel: +91 20 27126366

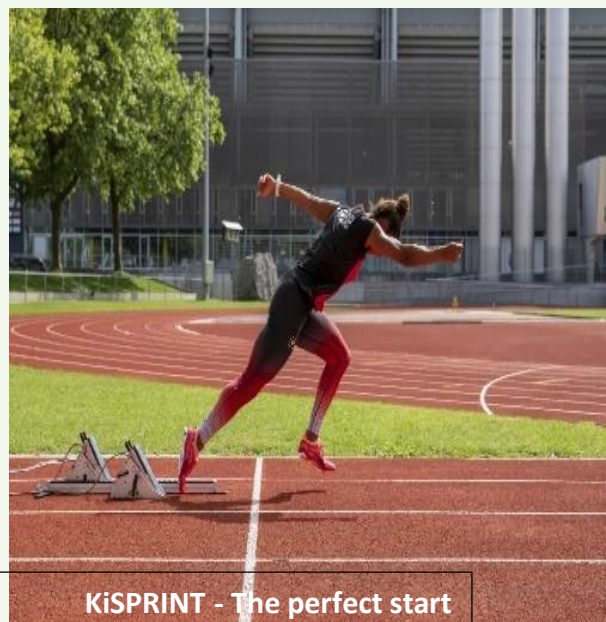
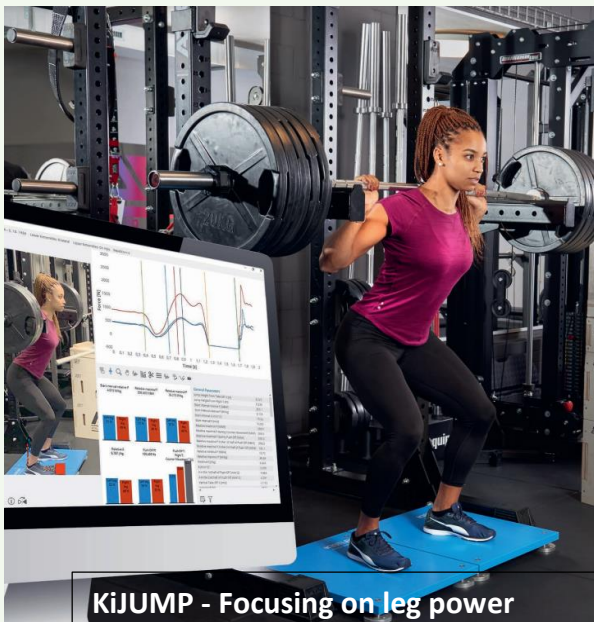
**Branch Office**  
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# SPORTS INFRASTRUCTURE SPECIALISTS



**ARTIFICIAL GRASS**  
**SYNTHETIC ACRYLIC COURTS**  
**INDOOR SPORTS FLOORING**  
**AIR DOMES**

**SYNTHETIC ATHLETIC TRACKS**  
**MODULAR SPORTS FLOORING**  
**TURF PROTECTION SYSTEM**  
**MODULAR GALLERY SEATING**

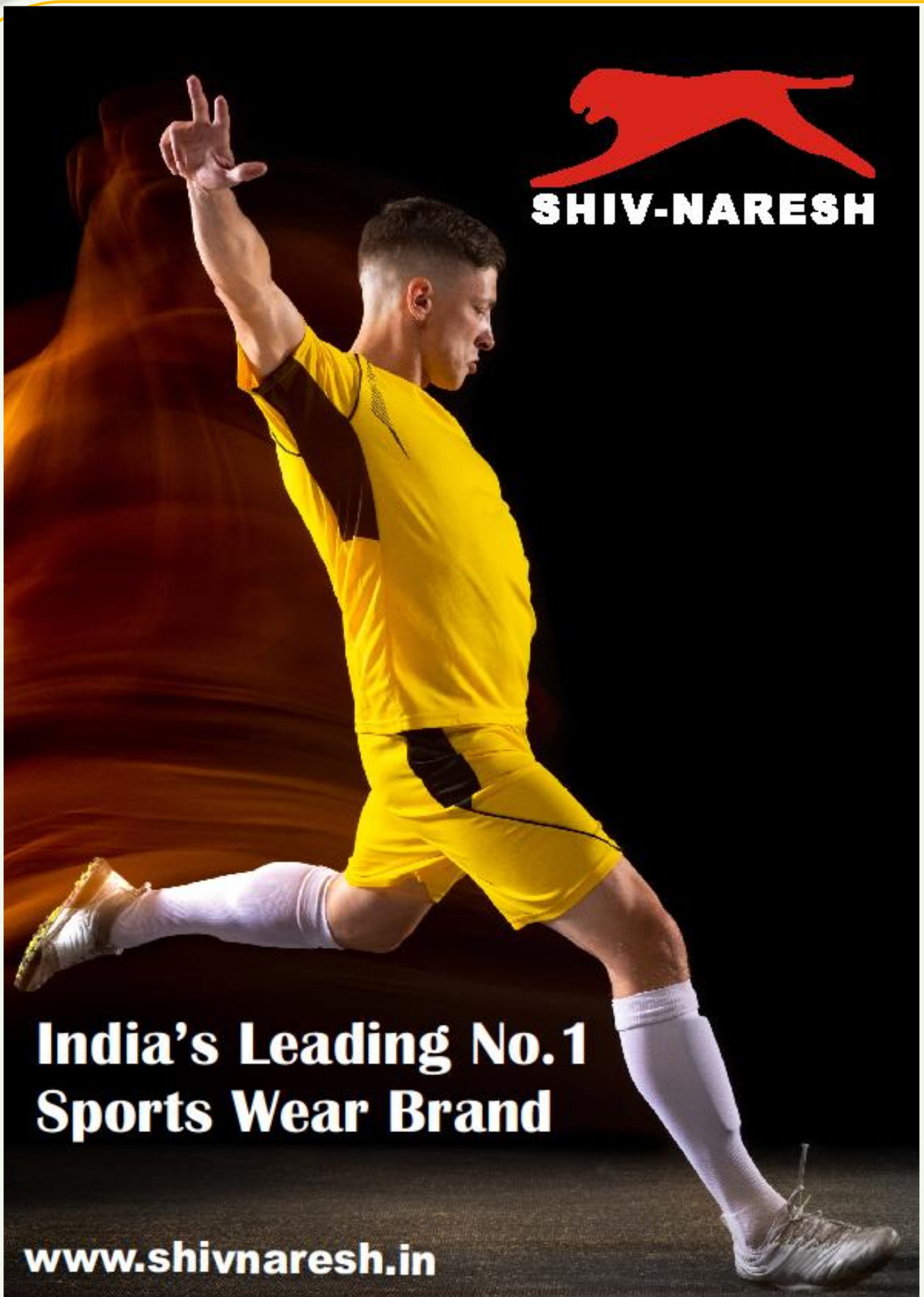
Whether you need Indoor or outdoor courts, athletic tracks, school or community playgrounds, multi-sport & multi-purpose facilities, Great Sports Infra provides the best sports infrastructure! Our portfolio of world-class products are suitable for amateur to international standard sports arena and complemented by our 18 year track record of designing and executing projects across South Asia.



### PROMINENT CLIENTS IN INDIA

- Chinnaswamy Stadium
- Acharya Nagarjuna University
- Chowgule College
- Jain International School
- Salt Lake Stadium
- Delhi Public School
- Eastern Naval Command
- Parkcity Sporting Ventures
- Zafraan Exotica
- Airforce Station
- Armed Force Medical College
- Mahatma Mandir
- BITS Pilani
- Manipal University
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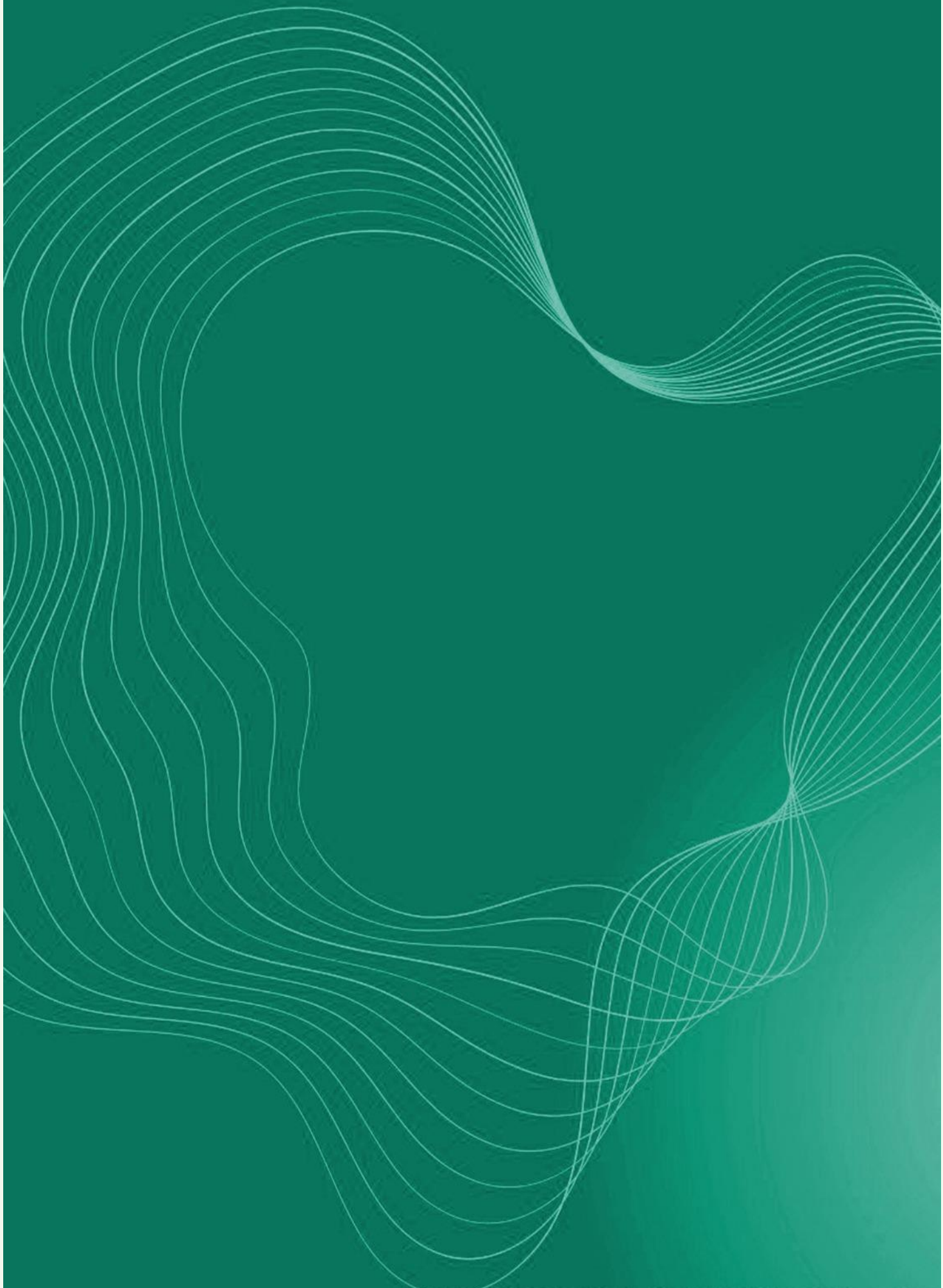
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