

4th Structural Integrity Conference and Exhibition SICE 2022 (An International Conference)

December 14th-16th, 2022

Department of Mechanical and Aerospace Engineering
Indian Institute of Technology Hyderabad

In-person mode



Organized by

Under the aegis of



భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

InSIS
Indian Structural Integrity Society



<https://mae.iith.ac.in/sice22/>

About the Conference

We heartily welcome you to **4th Structural Integrity Conference and Exhibition (SICE) 2022** to be held in-person by the Department of Mechanical and Aerospace Engineering, Indian Institute of Technology Hyderabad under the aegis of InSIS from **December 14th-16th, 2022**.

The Indian Structural Integrity Society (InSIS) unites researchers and practicing specialists across the spectrum to disseminate their research work, and collaborate in the broad area of structural integrity.

SICE 2018 and 2020 created a platform to bring together structural integrity and design experts in key disciplines that together determine safety and durability of critical structures. It provided a unique networking opportunity to Structural Integrity and design professionals from across the globe and acted as a unique forum for researchers and practicing specialists to share their research work in the broad interdisciplinary field of Structural Integrity, we thank all for the overwhelming response. Over 400 delegates including 30 eminent foreign delegates representing the academia, research laboratories and industry, attended the conference. The global event attracted a host of excellent orations, keynote addresses, plenary sessions, more than 250 contributory lectures and more than 50 poster presentations. Twelve exhibitors showcased their products at the conference. In addition, a pre-conference workshop on 'Elements of Mechanical Behaviour and Structural Integrity' was organized during 23rd-24th July 2018 to benefit young researchers. The workshop systematically explored various elements of mechanical behaviour between basic and applied research.

Keeping the continuity, SICE 2022 is planned from 14th-16th December by the **MAE Department, IIT Hyderabad, Near NH-65, Sangareddy, Kandi, Telangana, 502285**. We are also hosting Pre-conference workshops on 12th - 13th December 2022. SICE 2022 brings experts from different parts of the world to ensure the rigorous technical experience for cross disciplinary interactions. The central theme of this year's conference is to bring the structural integrity community from across different engineering streams to a common platform and discuss the recent trends and future research directions. At this conference, we want to showcase high-quality research work in the thematic areas of structural integrity.

The conference covers a broad spectrum of topics from Defense, Aerospace, Nuclear Technologies, Design, Engineering, Railways, AI and ML Structural Integrity etc. Participants are encouraged to bring their queries and problems, and pose them for obtaining the solutions. The scientific committee will review abstracts and full papers, and all the accepted papers, including the poster presentation, will be published in conference proceedings. Furthermore, the selected papers will be published in **Materials Today proceedings by Elsevier**. This conference also hosts several stalls from various OEMs to exhibit state-of-the-art equipment, services, and software in the areas of structural integrity. This conference will be a great platform for academic researchers, R&D scientists, and industry partners to share their ideas and promote collaborations.

We heartily welcome you to SICE 2022 & Looking forward to your active participation.

Chief Patron



Prof. B. S. Murthy
Director,
IIT Hyderabad

Organizing Team

Dr. Viswanath Chinthapenta

IIT Hyderabad (Conference Chair)

Dr. Gangadharan Raju

IIT Hyderabad (Conference Co-Chair)

Prof. Ramji Manoharan

IIT Hyderabad (General Secretary)

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Dr. Anil Agarwal	IIT Hyderabad
Dr. Anshul Faye	IIT Bhilai
Dr. Bijudas CR	IIST
Dr. Eswara Prasad Korimilli	IIT Indore
Dr. Gopinath Muvvala	IIT Hyderabad
Dr. J. John Rozario Jegaraj	DRDL
Dr. Jayabal K	IITD K
Prof. K. V. L. Subramaniam	IIT Hyderabad
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Prof. M. J. N. V. Prasad	IIT Bombay
Prof. Mahendrakumar M.	IIT Hyderabad
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Dr. Murshid Imam	IIT Patna
Dr. Naresh Verma Datla	IIT Delhi
Dr. Phani Mylavarapu	DMRL
Dr. Prabhat Kumar	IIT Hyderabad
Dr. Prakhar Gupta	IIT Hyderabad
Dr. Raghuram	NIT T
Dr. Rajesh Korla	IIT Hyderabad
Dr. Ramisetti	CSIR-SERC
Dr. Ratna Kumar	IIT Madras
Dr. Rayasam Srilakshmi	SVNIT, Surat
Prof. S. Suriya Prakash	IIT Hyderabad
Dr. Safvan Palathingal	IIT Hyderabad
Dr. Sai Sidhardh	IIT Hyderabad
Dr. Sandip Haldar	IIT Goa
Dr. Saswata Bhattacharya	IIT Hyderabad
Dr. Srikant Sekhar Padhee	IIT Ropar
Dr. Srikanth Korla	NIT W
Dr. Suhail M.	IIT Hyderabad
Dr. Supratik Mukhopadhyay	IIT Kanpur
Dr. Syed Nizamuddin K.	IIT Hyderabad
Dr. Tanmay K. Bhandakkar	IIT Bombay
Dr. V. Narayanamurthy	RC Imarat
Dr. Vamsi Krishna	ASL, DRDO
Dr. Vineesh	NIT C

Names are in alphabetical order

About IIT Hyderabad



భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్
 भारतीय प्रौद्योगिकी संस्थान हैदराबाद
 Indian Institute of Technology Hyderabad

Indian Institute of Technology Hyderabad (IITH) is a premier institute of science and technology established in 2008. IITH has been consistently ranked in the top 10 institutes in India for Engineering according to NIRF, making it one of the most coveted schools for science and technology.

IITH offers undergraduate programs in all the classical engineering disciplines, applied sciences, design, as well as several modern interdisciplinary areas. Students are given the flexibility to explore a broad set of areas and potentially pursue a minor or double major in a discipline that is not their own. Students who wish to seek a deeper understanding of their discipline are strongly encouraged to get involved in cutting-edge research with the help of a faculty to mentor them and earn Honors in their field.

The very foundation of IIT Hyderabad is based on research and innovation. The vibrant research culture is evident from the number of patents and publications that IITH produces consistently every year. IITH offers graduate programs at both master and doctoral levels in several diverse areas. There are separate programs for technology, design, science, and liberal arts. The MTech program is offered in various modes and durations to cater to the ever-growing need for postgraduate-level professionals in the country.

IITH encourages and supports innovation and entrepreneurship at every stage. The minor program in entrepreneurship is open to all students of IITH, and many of the courses are offered by industrialists who are entrepreneurs themselves. There are various innovation centres and incubators that promote entrepreneurship and help mentor young innovators. IITH has been very successful in building tie-ups with leading academic institutions around the globe.

IITH enjoys an extraordinary relationship with Japanese universities and industries that goes beyond academics and research collaborations. In fact, some of the iconic buildings in the IITH campus will carry the signature of Japanese architecture.

IITH creates a unique holistic ecosystem for education that offers interactive learning, a very flexible academic structure, cutting-edge research, strong industry collaboration, and entrepreneurship. This is an environment that enables students and faculty to translate their dreams into realities.

For more details about IITH kindly Visit: <https://iith.ac.in/>



<https://mae.iith.ac.in/sice22/>

About InSIS



The **Indian Structural Integrity Society (InSIS)** unites professionals in a wide variety of disciplines that together impact the safety and reliability of structures, machines, vehicles, and devices.

International conferences, thematic workshops, and lectures organized by InSIS serve as a platform for researchers and practicing engineers to interact. InSIS periodically recognizes the contributions of outstanding academics and industry personnel through awards and sponsorship of their participation at professional meetings in India and overseas.

Join us and enjoy a lifetime of association with colleagues that may help you advance professionally and in doing so, advance all spheres of the national economy, from energy, through transportation, construction, defence and even healthcare.

For more details kindly visit: <https://insis.in/>. This website serves as a repository of event proceedings that help InSIS members to catch up with news and material that is likely to serve their goals.

Contact: secretary@insis.in, info@insis.in

Telephone: +91 8049539628/ +91 9591994642

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IISc Bangalore

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DHIO research

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BISS ITW



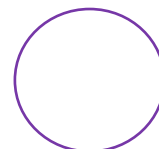
Prof. Krishna J.
IIT Bombay



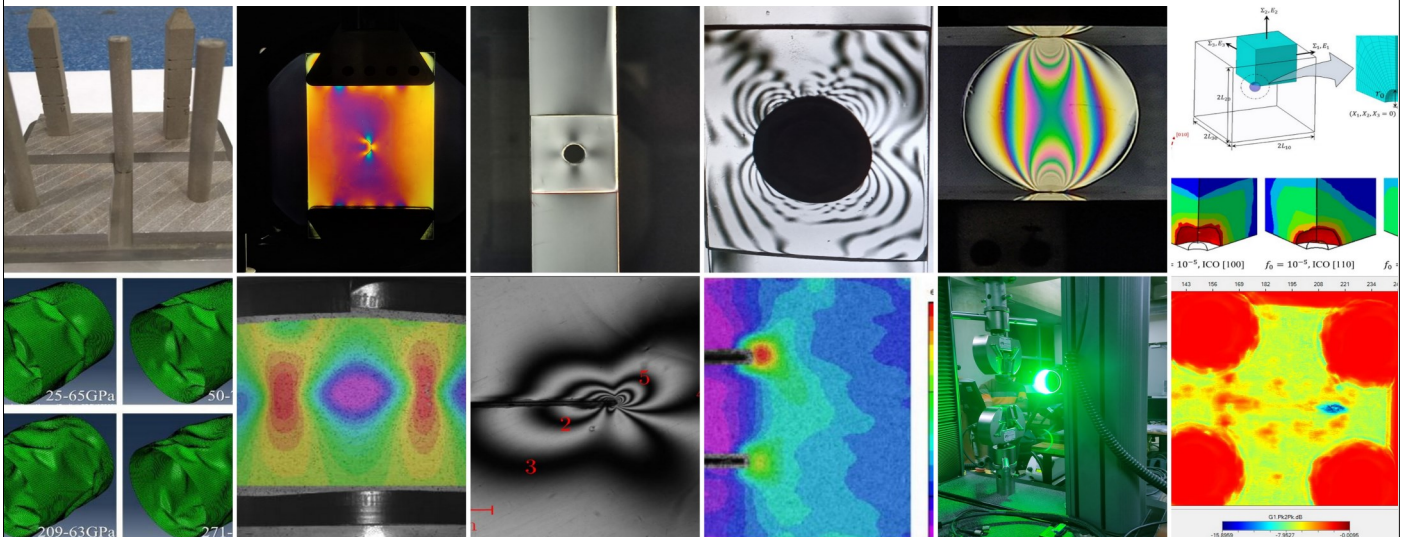
Dr. C. M. Manjunatha
CSIR-NAL



Dr. Kartik Prasad
DMRL DRDO



Uma B
DHIO Research



Conference Theme & Call for Papers

4th Structural Integrity Conference and Exhibition (SICE-2022) will be held in person at the Indian Institute of Technology (IIT) Hyderabad. IIT Hyderabad is among the 2nd generation IITs started by Govt. of India. The conference's central theme is to bring the structural integrity community across different engineering streams to a common platform and discuss the recent trends and future research directions.

At this conference, we want to showcase high-quality research work in the thematic areas of structural integrity. The scientific committee will review abstracts and full papers, and all the accepted papers, including the poster presentation, will be published in conference proceedings. Furthermore, the selected papers will be published in **Materials Today proceedings by Elsevier**.

This conference also hosts several stalls from various OEMs to exhibit state-of-the-art equipment. Services, and software in the areas of structural integrity. This conference will be a great platform for academic researchers, R&D scientists, and industry partners to share their ideas and promote collaborations.

Domains and Research areas of SICE 2022

Domains

- Nuclear Technologies
- Defense and Aerospace Applications
- Renewable Energy
- AI and ML in Structural Integrity
- Civil and Naval Structures
- Petro-Chemical & Process Industries
- Transportation and Railways
- Integrated Computational Materials Engineering
- Additive Manufacturing
- Integrated Vehicle Health Management

Research Areas

- Composite Structures
- Impact and Blast
- NDE and SHM
- Thin Films and Coatings
- Novel Sensors for SHM
- Wear and Tribology
- Automated NDE Inspections
- Structural Joints
- Reliability and Structural Integrity
- Design for AM
- Experimental Characterization
- Additive Manufacturing
- Fracture and Fatigue
- Structural Optimization
- Creep and High-Temperature Failure
- Repair and Maintenance
- Computational Mechanics
- Integrity of Weldments
- Damage Mechanics
- Energy Storage Devices

- Nano-Mechanics and Nano-Materials
- Wind Energy
- Multi-Physics Modelling
- Gas Turbine Components
- High Strain Rate Loading
- Nuclear Structural Materials
- Life Management of Nuclear Structures
- Offshore and Marine Structures
- Biological and Bio-Inspired Materials
- Automotive Structures
- Medical Devices and Implants
- Oil and Gas Inspection
- Integrity of Concrete and Steel Structures
- Mechanical Systems



materialstoday:
PROCEEDINGS

Abstracts: 15th May 2022

Send to: <https://bit.ly/3uA6cTF> (EasyChair)

Full Length Papers: 15th August 2022

Send to: <https://bit.ly/39pVqIH> (EasyChair)

For more details visit: <https://mae.iith.ac.in/sice22/>

Registration Details

Registration Fee For Indian Nationals (inclusive of GST)

Industry and R&D institutions: **INR 18,000.00 (Early Bird)**
INR 20,000.00

Faculty, Research Scholars, InSIS members: **INR 15,000.00 (Early Bird)**
INR 18,000.00

Students: **INR 8,000.00 (Early Bird)**
INR 10,000.00

10% discount for INSIS members

Registration Fee For Foreign Nationals

Academicians/ Industry and R&D institutions: **400 USD (Early Bird)**
450 USD

Students: **200 USD (Early Bird)**
250 USD

Includes full access to the conference, exhibition area, lunch & refreshments, delegate kit, conference banquet, and participation certificate.

Contact us for any query

For sponsorship and exhibition stalls:
sice22ses@mae.iith.ac.in

For any general query: sice22@mae.iith.ac.in

For technical query:

Dr. Viswanath Chinthapenta: viswanath@mae.iith.ac.in

Dr. Gangadharan Raju: gangadharanr@mae.iith.ac.in

Keynote Speakers

Tentative List

(Names are in alphabetical order)



Prof. Anupam Saxena

Professor

Department of Mechanical Engineering
Indian Institute of Technology, Kanpur, India.



Dr. CM Manjunatha C M DR

Chief Scientist and Head

Structural Integrity Division, CSIR-National
Aerospace Laboratories, Bangalore, India.



Dr. Deepa Srinivasan

Professor,

Pratt & Whitney, Bangalore, India.



Prof. Huajian Gao

Professor,

School of Mechanical and Aerospace Engineering
College of Engineering
Nanyang Technological University, Singapore.



Prof. J. M. Chandra Kishen

Professor

Department of Civil Engineering
Indian Institute of Science, Bangalore, India.



Dr. M. R. Bhat

Chief Research Scientist of Structures

Indian Institute of Science, Bangalore, India.



Prof. Puneet Mahajan

Professor

Department Of Applied Mechanics
Indian Institute of Technology Delhi, India.



Dr. Shailendra Joshi

Bill D. Cook Assistant professor

Mechanical Engineering
University of Houston, USA.



Prof. Sumit Basu

Professor

Department of Mechanical Engineering
Indian Institute of Technology, Kanpur, India.



Prof. Arun Shukla

Simon Ostrach Professor

Mechanical, Industrial and Systems Engineering
University of Rhode Island, USA.



Dr. D. Roy Mahapatra

Associate professor

DRDO Chair at
Indian Institute of Science, Bangalore, India.



Prof. Hareesh Tippur

*McWane Endowed Chair Professor, Associate
Chair for Graduate Studies, Director, Laboratory
for Failure Mechanics & Optical Technique*

Department of Mechanical Engineering,
Auburn University.



Prof. Indra Vir Singh

Professor

Department of Mechanical and Industrial
Engineering
Indian Institute of Technology Roorkee, India.



Prof. Krishnaswamy Ravi-Chandar

*Professor, M.C. (Bud) and Mary Beth Baird
Endowed Chair*

Aerospace engineering and Engineering
mechanics
University of Texas at Austin.



Prof. P. Venkitanarayanan

Professor

Department of Mechanical Engineering
Indian Institute of Technology, Kanpur, India.



Prof. Samit Roy

William D. Jordan Professor

Aerospace Engineering and Mechanics, Center
for Advanced Vehicle Technologies
University of Alabama.



Dr. Srikantha Phani

Associate Professor

Faculty of Applied Science
Department of Mechanical Engineering
University of British Columbia



Prof. Upadrasta Ramamurty

*Professor, President's Chair in Mechanical and
Aerospace Engineering and Materials Science and
Engineering*

School of Mechanical & Aerospace Engineering
Nanyang Technological University, Singapore.

Glimpse of previous SICE



Pre-Conference Workshop

Two full days of pre-conference workshops are organized during the SICE 2022, covering fundamentals in the areas such as additive manufacturing, mechanical behaviour of materials during large deformation, NDE and SHM, and damage tolerance. Experts from IITs, & national labs will deliver lectures, and provide hands-on workshops on fabrication, experimental procedures and numerical techniques. Faculty, Postdocs and PhD students are highly encouraged to register for the workshops. The detailed programme is as follows:

Workshop Topics

- Deformation behaviour of Materials
- Advanced Manufacturing Techniques
- NDE and SHM
- Damage Tolerance Models
- Numerical Modelling
- Lab Demonstration

Tentative Speakers

Dr. Eswar Prasad K.	IIT Indore
Dr. Gangadharan Raju	IIT Hyderabad
Dr. Gopinath M	IIT Hyderabad
Dr. Phani Surya Kiran	DMRL Hyderabad
Dr. Prakhar Gupta	IIT Hyderabad
Dr. Rajesh Korla	IIT Hyderabad
Prof. Ramji	IIT Hyderabad
Prof. Surya Kumar	IIT Hyderabad
Dr. Syed Nizamuddin K.	IIT Hyderabad

Pre-conference registration details:

Registration fee: 5,000 INR inclusive of 18% GST

Registration begins: 1st September 2022 (Online through website)

Registration ends: 30th September 2022

Discount: 500 INR discount for those who have also registered for the conference.

**Registration includes working lunch & refreshments, course material, and participation certificate.*

**Paid accommodation in hostels will be provided subject to availability.*

**To avail accommodation, please send request to: sice22ses@mae.iith.ac.in*

For any query related workshop, please contact:

Dr. Eswara Prasad Korimilli: eswar@iiti.ac.in

Dr. Rajesh Korla: rajeshk@msme.iith.ac.in

Dr. Syed Nizamuddin K.: snk@mae.iith.ac.in



Students' Awards

As part of SICE 2022, we have Student Technical Paper and Poster Presentation Awards. Students from Engineering Colleges, Universities pursuing Bachelor Degree, Master Degree, and Ph.D. are encouraged to submit the abstract for technical paper and poster presentation awards. Three best technical paper presentations and Three best poster presentations will get cash prizes and complimentary benefits.



Three Best Oral Presentations
&
Three Best Poster Presentations



For more information about conference, scan the QR code


Or contact : sice22@mae.iith.ac.in




<https://mae.iith.ac.in/sice22/>


Sponsorship Registration Form

- ◆ Name of the company/organization:
- ◆ Sponsorship type (please tick (√) the appropriate choice)-Platinum/Gold/Diamond/Silver/Other:
- ◆ Cheque/DD number (in favour of SICE 2022, payable at Indian Structural Integrity Society, SICE, IIT Hyderabad AC no 41128099691 & INSIS GSTIN: 29AAAAI8287Q1ZO):
- ◆ Date of payment:
- ◆ We propose to extend a sponsorship amount of rupees (_____) for organizing SICE 2022 at IIT Hyderabad.

 Diamond Sponsor (7 lakh + 18 % GST INR)
<ul style="list-style-type: none"> ◆ Logo on brochure, website, and information bulletin. ◆ 1 page colour advertisement in conference program. ◆ 1 page colour advertisement in book of abstract (Back-page or Inner cover). ◆ 5 conference registrations coupons. ◆ 2 standard size stall* at the venue. ◆ 1 premium marketing slot of 15 min during conference. ◆ 1 marketing slot of 12 min during any session. ◆ 5 minutes video on the conference website.

 Platinum Sponsor (5 lakh + 18 % GST INR)
<ul style="list-style-type: none"> ◆ Logo on brochure, website, and information bulletin. ◆ 1 page colour advertisement in book of abstract. (Inner cover). ◆ 3 conference registrations coupons. ◆ 1 standard size stall* at the venue. ◆ 2 marketing slot of 12 min during any session. ◆ 3 minutes Video on the conference website.

 Gold Sponsor (3 lakh + 18 % GST INR)
<ul style="list-style-type: none"> ◆ Logo on brochure, website, and information bulletin. ◆ 1 page colour advertisement in book of abstract. (Inside) ◆ 2 Conference registration coupons. ◆ 1 standard size stall* at the venue.

 Silver Sponsor (1.5 lakh + 18 % GST INR)
<ul style="list-style-type: none"> ◆ Logo on brochure, website, and information bulletin. ◆ Half page colour advertisement in book of abstract. (Inside) ◆ 1 Conference registration coupon.

One Page Advertisement (75,000 + 18 % GST INR)
<ul style="list-style-type: none"> ◆ One full page colour advertisement in conference booklet.

Half Page Advertisement (50,000 + 18 % GST INR)
<ul style="list-style-type: none"> ◆ Half page colour advertisement in conference booklet.

* Stall of size 1.5m × 1.5m for three days, 1 table, 2 chairs, spotlight, and one universal plug point.

Signature with stamp and date

Conference chair

Dr. Viswanath Chinthapenta: viswanath@mae.iith.ac.in

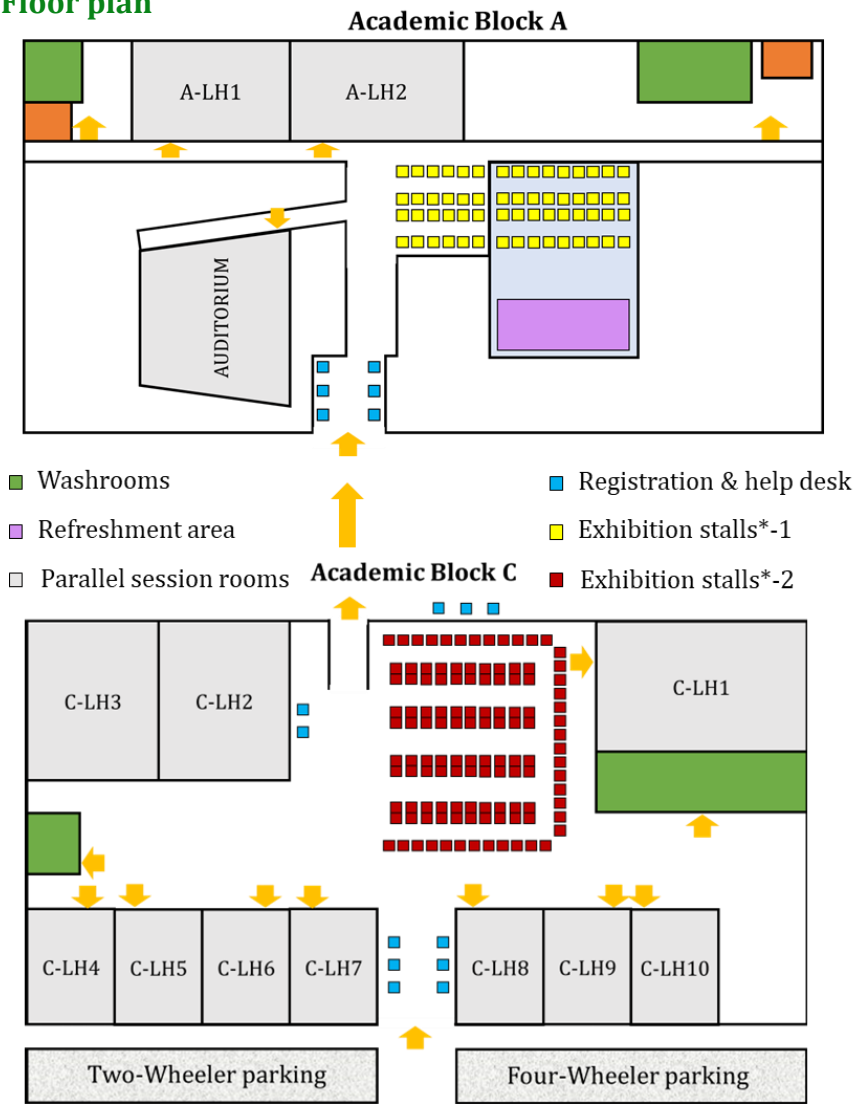
Dr. Gangadharan Raju: gangadharanr@mae.iith.ac.in

- For more information about conference, scan the QR code
- For additional information regarding advertisement in the brochure, please contact at: sice22@mae.iith.ac.in

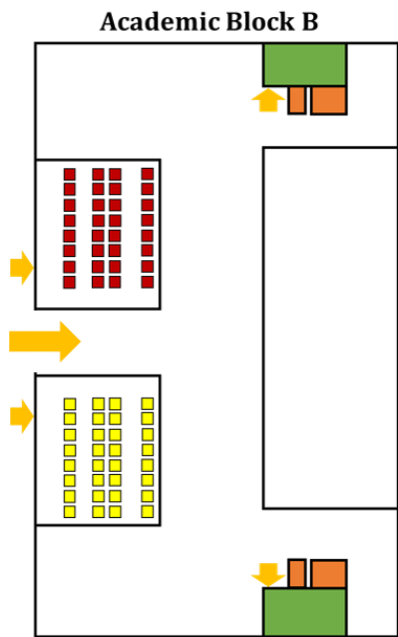


About the Venue (IIT Hyderabad)

Floor plan



* Stall of size 1.5m x 1.5m.



Academic Block A



Academic Block B

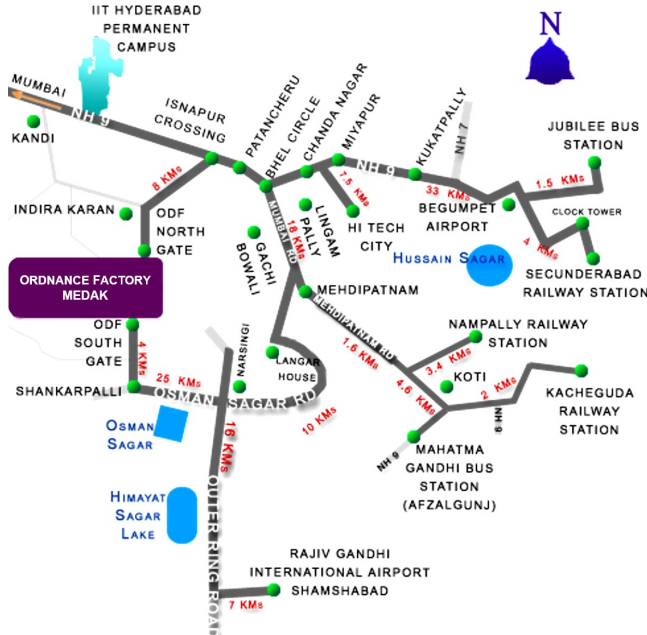


Academic Block C



Auditorium

Way to IIT Hyderabad



<https://mae.iith.ac.in/sice22/>