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29th International Conference on
**Processing and
Fabrication of
Advanced Materials**

Organised by



**NATIONAL DESIGN
AND RESEARCH FORUM**

IIT Tirupati

Welcome Message

Dear Colleague,

On the behalf of the organising committee, Department of Mechanical Engineering, Indian Institute of Technology Tirupati and National Design & Research Forum (NDRF) Bangalore India, we welcome you to the Twenty-Ninth International Conference on Processing and Fabrication of Advanced Materials (PFAM-XXIX) with a dedicated plenary session in the honor of Prof. Dr. R. K Ray. This is the 29th in the series of this triennial conference is going to be organised in India, and we at Tirupati aim to ensure an excellent experience to you and the accompanying person. We are expecting to host more than 400 delegates. Besides plenary talks, the conference will have parallel sessions, poster sessions, panel discussions, industry-academia interaction, award ceremony and cultural programs. In the spirit of PFAM' 29 conferences, there will be ample time for the talk and especially discussion following each talk.

We have planned a tour of nearby historical places and for discussions to initiate and build collaborations as well as socialization. We are aware of the diversity of the delegates and we have considered it while planning for food, sightseeing, accommodation etc. We have also planned cultural programs filled with classical dances and music of India.

End of August-early September is quite pleasant in Tirupati - with an excellent mix of sun and comfortable temperatures. With the backdrop of such a beautiful weather, we look forward to welcoming you!

Sincerely,



Dr. Mamilla Ravi Sankar
 (Conference Chairman)



Dr. Ajay Kumar
 (Co-Chair, Org. Sec. & Convener)

Chief Guest



Dr. Y. Sreenivas Rao
 Distinguished Scientist, Director General,
 Naval Systems & Materials (NS&M), DRDO

Important Dates

- | | |
|--------------------------------------|-----------------|
| ○ Submission of Abstract | 15 April, 2023 |
| ○ Abstract Acceptance Intimation | 30 April, 2023 |
| ○ Early Bird Registration | 30 June, 2023 |
| ○ Full paper Submission | 15 July, 2023 |
| ○ Full Paper Acceptance Notification | 31 July, 2023 |
| ○ Regular Registration | 15 August, 2023 |

Guest(s) of Honor



Dr. U. Kamachi Mudali
 Vice Chancellor, Homi Bhabha National Institute,
 Department of Atomic Energy (DAE), Mumbai, India



Shri APVS Prasad
 Chief Executive (A) CEMILAC
 DRDO, Bangalore, India



Dr. T. S. Srivatsan
 Prof. (Emeritus), Dept. of Mech.
 Eng., The Univ. of Akron, USA



Prof. Ranjit Kumar Ray
 AICTE-INAE Distinguished Visiting Prof.,
 SRMIST Chennai and CMRIT Bengaluru, India

Patrons



Prof. K. N. Satyanarayana
 Director, IIT Tirupati, India



Er. Chinmay Debnath
 President, IEI, India



Dr. P. Raghothama Rao
 Chairman, NDRF, India

Faculty Awards

**ASM International
 Best Faculty Research
 Award**

Student Awards

Best Oral Paper

Best Poster Paper

Runner-up Oral Paper

Runner-up Poster Paper

Eminent Speaker(s)



Prof. Ajay Malshe
 Purdue University, USA



Lt Gen Anil Kapoor
 AVSM, VSM (Retired)
 India



Dr. Ajay M. Sidpara
 Indian Institute of Technology
 Kharagpur, India



Dr. Amit Arora
 IIT Gandhinagar
 India



Dr. Balakrishna I
 Dy. Director/Scientist, Ministry of
 Electronics & Information Technology,
 GOVT. OF INDIA



Dr. D.P. Mondal
 CSIR AMPRI, India



Prof. David P. Field
 Washington State University, USA



Dr. Devinder Yadav
 IIT Patna, India



Dr. Dheepa Srinivasan
 Pratt and Whitney, India



Dr. Gopi Chandran
 Applied Materials, India



Prof. Guha Manogharan
 The Pennsylvania State University, USA



Prof. I. A. Palani
 IIT Indore, India



Dr. Jayadev K.
 BEL Bangalore India



Dr. K.L. Ganapathi
 NIT, Kurukshehra India



Prof. Kishore Pochiraju
 Stevens Institute of Technology
 USA



Krishna Moorthy K
 CEO & President, India Electronics &
 Semiconductor Association (IESA)



Prof. Laszlo S. Toth
 University of Miskolc, Hungary
 Lorraine University, France



Shri Laxmesh Hasanabadi
 VP & Head - Missiles & Aerospace
 Business Head - L&T Ltd., India



Dr. M. Sujata
 CSIR-NAL, Bangalore, India



Prof. Manoj Gupta
 NUS, Singapore



Dr. Meduri Ravi
 Chief Executive Officer, Semiconductor
 Technology and Applied Research Centre
 Bangalore, India



Dr. Mrinal Pal
 CSIR-CGCRI, Kolkata
 India



Prof. (Mrs) N.C. S. Srinivas
 IIT BHU, Varanasi
 India



Prof. N.V. Reddy
 IIT Hyderabad, India



Dr. Nagahanumaiah
 Director - CMTI
 India



Prof. Nagamani Jaya Balila
 IIT Bombay, India



Dr. O.P. Thakur
 Solid State Physics
 Laboratory, DRDO, India



Shri Pradeep Goyal
 Sr. VP (2022-23) & President-Elect(2023-24),
 ASM Int. Bangalore. Founder,
 Chairman & MD at Pradeep Metals Ltd



Prof. Prahalada Rao
 Virginia Tech, Virginia
 USA



Prof. Praveen Kumar
 Indian Institute of Science
 Bangalore, India



Dr. Rajkumar P. Singh
 Kalyani Centre of Technology &
 Innovation, Bharat Forge Ltd India



Prof. Satish V. Kailas
 Indian Institute of Science
 Bangalore, India



Prof. Satyam Suwas
 Indian Institute of Science
 Bangalore, India



Prof. Seeram Ramakrishna
 NUS, Singapore



Dr. Sheela Siddappa
 Director, Data Science
 Kyndryl, India



Prof. Soundar Kumara
 The Pennsylvania State University
 USA



Prof. Srikanth Vedantam
 Indian Institute of Technology
 Madras, India



Prof. Sudarsan Rachuri
 Advanced Manufacturing
 Office, EERE, and DOE, USA



Prof. Suhas S. Joshi
 Director, IIT Indore, India



Dr. Sri Vallabha Deevi
 Principal Data Scientist,
 Tiger Analytics India



Dr. Thomas Leitgib
 ZwickRoell in Fürstenfeld
 Austria



Dr. T.P.D. Rajan
 CSIR-NIIST
 Trivandrum INDIA



Prof. S. Mohan
 Emeritus Professor, IISc Bangalore, India



Prof. Vijay Kumar Jain
 Indian Institute of Technology, Kanpur, India



Dr. Vikas Kumar
 Former Director, DRDO, India

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 HEAD, Mechanical Engineering
 Department, IIT Tirupati, India

Co-Chair, Org. Sec. & Convener



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 Mechanical Engineering
 Department, IIT Tirupati, India

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Industry Focus Areas and Features

Aerospace and other space-related industries

Automobile, Marine and Defence

Biomedical and Healthcare

Electronics and Communications

Energy Storage/Harvesting

Heavy Equipment, Machinery & Goods

Semiconductor Materials Manufacturing

Academia-Industry Interaction

How to Reach:

By Air: Nearest airports are Tirupati Airport, Chennai Airport

- Tirupati Airport (TIR), Tirupati, Andhra Pradesh, IN – 14 KM from Tirupati city
- Chennai Airport (MAA), Chennai, Tamil Nadu, IN – 145 KM from Tirupati

By Rail: Tirupati is well connected from other major cities of India by rail network. Name of the station is Tirupati Railway Station (TPTY) and Renigunta Junction (RU)

By Road: All major cities of Andhra Pradesh, Hyderabad, Chennai and Bangalore are well connected to Tirupati by buses.

Distances to Tirupati from cities: Chennai – 134 KM, Vijayawada – 412 KM, Visakhapatnam – 755 KM, Bangalore – 248 KM, Hyderabad – 556KM

Committees

International Advisory Committee

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Mr. K. V. Srinivasan NDRF, Bangalore, India	Prof. V. Vasudeva Rao Retired Professor, IIT Kharagpur India
Dr. K. G. Sagar CIT	

Registration Fee

		Up to 30th June'23 (Early Bird)	Up to 15th Aug'23 (Regular)
Indian (INR)	Research Scholars / Students	₹ 3,500	₹ 4,000
	Delegates (Academic - Faculty, Post Doc. Fellows & Public Sector R&D)	₹ 8,000	₹ 8,500
	Delegates (Non Academic - Industry)	₹ 12,500	₹ 13,000
Foreign (USD)	Research Scholars / Students	\$ 180	\$ 230
	Delegates (Academic - Faculty, Post Doc. Fellows & Public Sector R&D)	\$ 350	\$ 400
	Delegates (Non Academic- Industry)	\$ 450	\$ 500

N:B: -Registration fees inclusive of 18 % GST

Pre Conference Workshops

Schedule : 5th September 2023 | 09:00 – 17:00 hrs
Venue : New Lecture Hall Complex, IIT Tirupati

Additive Manufacturing

Schedule : 5th Sep'23 | 09:00 – 13:00 hrs

Overview:

IIT Tirupati hosts this pre-conference workshop to give the overview of Additive Manufacturing (AM), state of the art and latest trends in this field, and the Additive Manufacturing post processing to the academia and researchers.

Eminent speakers from IIT Tirupati and industry will deliver the talks on the topics mentioned above to bring insights in the research and application perspective of Additive Manufacturing.

Course Contents:

- Overview of Additive Manufacturing
- State of the art in Additive Manufacturing
- Post processing in Additive Manufacturing
- Powders for Additive Manufacturing
- Testing of Additive Manufacturing Parts

Hosted by



Who Should Attend:

Students, academicians and researchers.

Semiconductor Packaging

Schedule : 5th Sep'23 | 13:00 – 17:00 hrs

Overview:

This pre-conference workshop is jointly hosted by Central Manufacturing Technology Institute(CMTI), Bengaluru, and IIT Tirupati to bring in the synergy of semiconductor packaging and allied processes for device and technology development in both academic and industrial capacity.

Semiconductor devices / Microsystems are being used abundantly across various domains for numerous applications.

Fabricating these devices as per the application requirement is a vast process.

By undergoing this pre-conference workshop, an individual shall be able to understand the design requirements, and fabrication process flow and also meet the packaging requirements of the microdevices or sensors as per the end-user demands. Eminent speakers shall deliver impactful lectures on the mentioned topics including the funding opportunities and present semiconductor ecosystem in the country.

Course Contents:

- Basics of electronics packaging
- 2D packaging process technologies and case studies
- Advanced 3D and wafer level packaging methodologies
- Fabrication processes, characterization, testing & validation of products for performance evaluation.

Hosted by



Who Should Attend:

Students, academicians, researchers, and product developers in the field of sensors, semiconductors, MEMS, and electronics.

Workshop Registration Fee

Category	Workshop Fee
Student	Rs. 500/-
Others	Rs. 1000/-

Register Now

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Few important sightseeing options in and around city U

Sri Venkateswara Temple, Tirupati (1 km from city center)

Sri Venkateswara Temple is the most revered and celebrated temple of Tirupati having tourists and pilgrims flooding in all year long. This is one of the holiest and the wealthiest temples in the world and millions of devotees flock here to pay their reverence.

Around 50,000 pilgrims visit the temple every day, which is a massive number. Hence, a whole procedure has been planned and set up which effectively ends at the shrine for darshan. The entry for the Darshan is through Vaikuntam Queue Complex which is a series of interconnected halls that leads to the main temple. These halls are clean and comfortable with the various facilities provided.



Akasaganga Teertham, Tirupati (1.2 km from city center)

Akasaganga Teertham is a waterfall in Tirupati, located at a distance of 3 km from the main temple. The waterfall has water flowing all throughout the year and holds immense religious significance.

Pilgrims can also pay homage to the Devi temple situated very close to the waterfall. During the monsoons, the waterfall is a beautiful sight to the eyes.



Silathoranam, Tirupati (1.1 km from city center)

One of the natural marvels that history left behind, the Silathoranam, now, finds itself being an important landmark in archaeology and heritage. This is a natural rock formation, one of the only three of this kind in the world.

While geology and archaeology foster a number of theories, the rock formation is also tied to beliefs of its connection with the idol of Lord Venkateswara. The rock formation is a national monument and is protected by the State Government.



Swami Pushkarini Lake (0 km from city center)

Almost neighboring the Sri Venkateswara Temple, is Swami Pushkarini Lake. According to the legends, the lake belonged to Lord Vishnu and was located in Vaikuntham.

It was brought to the earth by Garuda, for the sport of Sri Venkateswara. Extremely holy, the pilgrims usually take a dip in the waters of this lake before proceeding to the main temple.



Sri Padmavathi Ammavari Temple (1 km from city center)

At a little distance from the main city area, one finds the Sri Padmavathi Ammavari Temple dedicated to Goddess Padmavathi. One of the many sacred structures of Tirupati, this one is home to many legends and stories about the Goddess.

The legend has it that while Akasha Raja of Thondamandalam was having a great yagna performed and had the earth ploughed, he found a little girl in a lotus flower, and hence the name. A voice from the skies asked him to love and bring up the child. As she grew up, she was married to Lord Venkateswara. The temple is frequently visited by the devotees on their spiritual trail around the town.



TTD gardens, Tirupati (4 km from city center)

Spreading over an area of 460 acres, the TTD gardens in Tirupati are known for their ornately decorated and manicured flower gardens. Alongside its lush green beauty, the garden also includes Alwar Tank, Mangalabhavi and Ananthapalligunta.

Flowers to the all the temples in Tirupati are supplied from this garden. They have an annual horticulture show and Pushpa Yagnam wherein exotic flowers are displayed for the visitors.



Chittoor (57 km from city center)

Steeped in religion, devotion and architecture, Chittoor is a place that everyone should visit at least once in their lifetime.

Also blessed with scenic beauty, cascading waterfalls and a beautiful hill station, Chittoor is not a disappointment to the traveller who seeks redemption from the busy metro life. Also known as the Mango City, Chittoor offers myriad varieties of heavenly mangoes to please its visitors.



Sri Venkateswara Dhyana Vignan (56 km from city center)

Established in the year 1980, the Sri Venkateswara Dhyana Vignan Mandiram in Tirupati is a museum that houses some of the most traditional articles that are used to perform Puja.

Many stone and wood carved items can also be sighted here. The museum is extremely beautiful and fills into you a sense of religious faith not easy to describe. This is one of the experiences, one must not miss while in Tirupati.



Sri Govindarajaswami Temple (0 km from city center)

Sri Govindarajaswami Temple is a 12th century Hindu Vaishnavite shrine built by Saint Ramanujacharya and is one of the biggest temple complexes in the district. The presiding deity is Lord Vishnu, also called Govindarajaswami. The beautiful traditional Dravidian architecture and its rich culture attract tourists in quite a large number every year.



Sri Varahaswami Temple (10 km from city center)

Standing to the north of Sri Venkateswara Temple is the Sri Varahaswami Temple which according to a lot, is said to belong to Sri Adi varahaswami. Various legends surround this temple.

If visiting the Venkateswara temple, it is advised to first pay a visit to this temple. The reason behind this too finds roots in a legend, according to which Sri Varahaswami owned the seven hills. He agreed to hand them to Sri Venkateswaraswami, on the condition that he too, should be worshipped. Hence, Sri Venkateswaraswami asked his devotees, to first pay a visit to Sri Varahaswami and then to him.



Conference Venue



Indian Institute of Technology Tirupati, Yerpedu – Venkatagiri Road, Yerpedu Post, Tirupati District, Andhra Pradesh, India



Contact Us

Conference Organizer

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