

Council Office Bearers

Mrs. Jyothi Sriram
Chairperson

Dr. J. R. Nataraj
Vice Chairman

Mr. Prakash Balasubramanian
Gen. Secretary

Mr. P. T. Bindagi
Treasurer

Mr. Rahul Masurekar
Immediate Past Chairman

Dr. Priyanshu Bajaj
Editor, News Letter

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Chairperson's Message



Dear Readers,

ASM (I) Bengaluru Chapter, founded a decade ago is one of the active chapters in India. It is my absolute privilege and honour to be elected as the Chairperson of this Chapter for the year ahead. I feel honoured to serve this Chapter, having illustrious members from Industries, R&D Institutions, Academia and Government organisations. I would like to sincerely thank the EC members for reposing faith in me and look forward to our collective leadership in taking our chapter to greater heights.

In the Covid-19 pandemic, world has changed in many ways during the past two years. We were all locked up in homes and some of us have utilized this time to refresh our knowledge, learning new skills and nurture our hobbies. It has unleashed a new world order in which agility, digital adoption and sustainability have emerged as the new norms. Against the backdrop of such disruptions too, our chapter moved with agility to tackle all the bottlenecks and remained active through virtual engagements in the form of monthly EC meetings, Technical talks and Workshops.

Industry 4.0 technologies, in these changing times, are being adopted in many parts of the world. These technologies are used to develop smart materials, smart factories, smart logistics, smart warehousing and smart supply chains. In the business aspect, it has the potential to solve complex manufacturing problems. Digital technologies help companies optimize their material wastage and inventory which ends up in cost reductions. With remote collaboration, on-site and off-site employees can easily collaborate as and when needed. These technologies ultimately reduce communication gaps and help them stay up to date with the information. Faults in materials can be detected and resolved at an early stage. Further, this provides transparency in the systems and processes and fulfills the required expectation of the customer.

As we continue to build momentum, the core focus of the chapter in the coming months will be to enhance our engagement with the academic community mainly students. Owing to pandemic restrictions, there has been very narrow access to the student community. However, with the gradual transition to normalcy post Covid, our chapter is involved in planning various offline events such as Materials Camp for school students, workshops/training programmes, technical talks, innovative programmes etc., the details of which will be shared shortly.

At this juncture, I seek co-operation from all our past Chairmen, EC members, office bearers and our esteemed members in our endeavour to scale to greater heights with an impact to the Materials Society.

Stay Safe Stay Healthy

Jyothi Sriram

About ASM International

ASM International formerly known as the American Society for Metals was established in 1913 as a professional body of heat treaters. It has since evolved as an international professional body of material scientists, engineers, R&D professionals and academicians with the motto of collecting & disseminating knowledge on Materials and Processes. The worldwide network of more than 38,000 individuals is led by members, guided by members' needs and fueled by members' participation.

About ASM Bangalore Chapter

ASM Bangalore chapter is actively involved in dissemination of materials centric knowledge among working professionals, researchers and academicians. ASM Bangalore chapter began its activities in the year 2006. Since then it has dedicated itself in spreading information based on materials among various stakeholders. Bangalore is a strategic center for several major automotive, aerospace, defense & R&D institutes and thousands of engineering professionals and it is imperative to educate & connecting the community in the field of Metals & Material science Technology. Under the able leadership of present Chairperson Mrs. Jyothi Sriram and capable Office Bearers, ASM Bangalore chapter is gaining wide popularity by activity involving and supporting the technological up-gradation of Engineering community.

The Prime Objectives of ASM Bangalore Chapter:

1. To disseminate materials centric information among professionals by organizing seminars, lectures, One/two days' workshops
2. To bring together Scientists, Intellectuals and Professionals working in the field of materials science to exchange ideas/knowledge/information.
3. To encourage and support student chapters among various Engineering colleges in the state of Karnataka and enlighten them, the importance of materials properties, selection and its application.
4. To Promote consultancy services by ASM members to solve industry problems in the area of materials.
5. To recognize and award ASM members for their contributions to field of materials science.

ASM Bangalore chapter has members with rich expertise and professional experience with deep insight to practical applications in the field of materials science & engineering. ASM Bangalore chapter offers consultancy in the broad areas of Material selection & Characterization, foundry practices, mechanical testing, forging, heat-treatment, failure analysis, Corrosion control, Nondestructive Evaluation (NDE), process simulation to name a few.

ASM Membership

A membership in ASM gives you every imaginable edge you seek in your career.

VISIT - <http://www.asmlrchapter.com/membership.php> - for Benefits and Forms

Or Call Membership Chair – Mr. Manohar Hegde - 9901964251 / Mr. K L Srirama - 9845699661

Or write ASM Bangalore Chapter: asmlr2015@gmail.com

Featured Articles:

“End to end Additive Manufacturing Process”

- Mr. Santhosh Nagaraju



Additive Manufacturing Industry is growing with 19% CAGR and it's expected to reach 100 Billion USD by 2030.

Hexagon has successfully implemented **additive manufacturing Re-engineering and Reverse engineering labs** at customer locations in India and globe. We help Industry to adopt the AM Technology with our software and hardware solutions.

As the world flags off into the Industrial Revolution 4.0 era, AM, or more commonly recognised as **3D Printing**, is now at the driver's seat for the next journey of technological advancement in manufacturing. AM is growing with 19% CAGR and it's expected to reach 100 billion USD by 2030.



Simufact AM is a leading simulation software in market, with highest software installations, case studies and references.

Our solutions for Additive Manufacturing:

01 Design for additive manufacturing

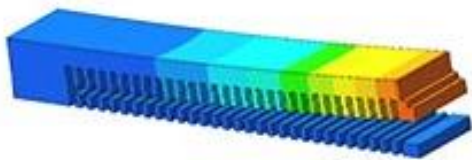
- a. Topology optimization / light weighting
 - b. Material selection and cost estimation
 - c. **Design validation** and life estimation
-

02 Production and process simulation

- a. Virtual 3D printing simulation
 - i. Part printability
 - ii. **Support generation and optimization**
 - iii. **Best orientation and pre-compensation**
 - iv. **Manufacturing risk/failure predictions**
 - b. Machine and material selection
 - c. Post processing of 3D printed part (HT, Cutting and support removal)
 - d. Machining process simulation
-

03 Service life and Quality inspection

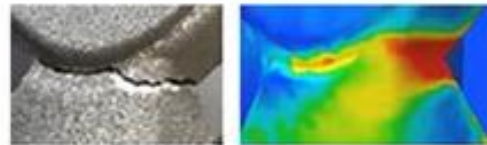
- a. **Scanning of 3D printed** part
- b. **CT scanning and visualization** of internal defects
- c. Service life estimation of 3D printed part.



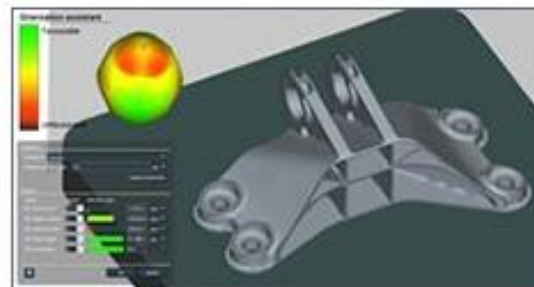
Identify manufacturing risks



Recoater crash risk



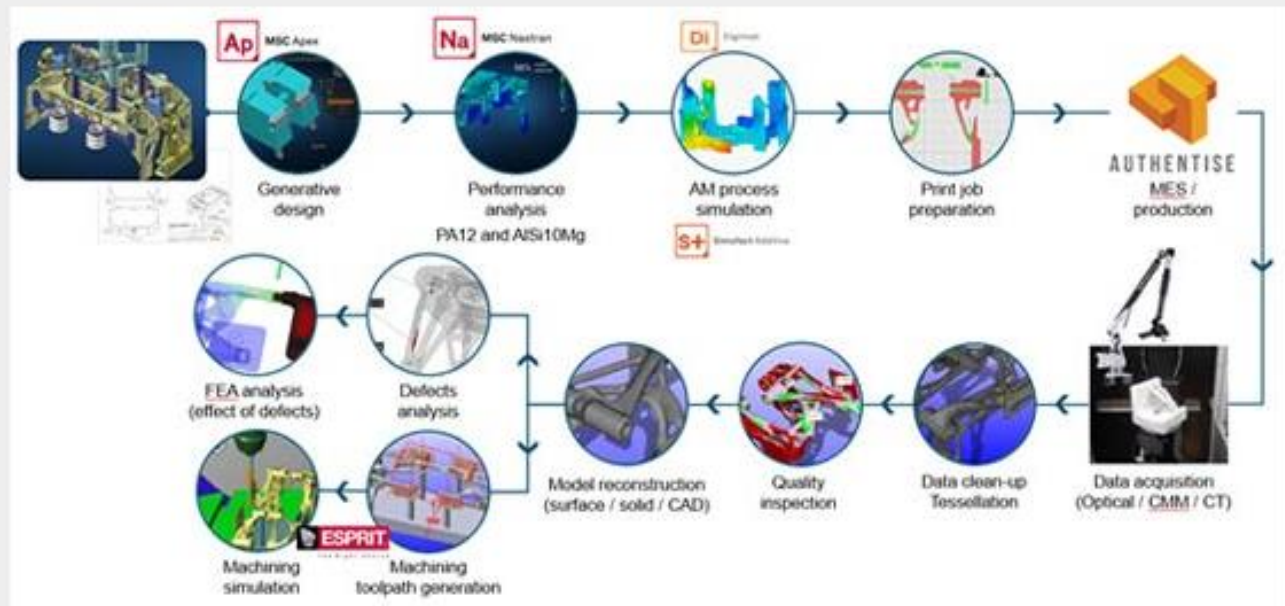
Part or support failure



Support area	11.761 mm ²
Support volume	135.326 mm ³
Projected area	10.816 mm ²

This is an end to end to approach which can be adopted for metal, plastic, and polymer printing techniques, also with different software and hardware tools available in the market.

Application of AM in Re-engineering :



Important stages in Re-engineering

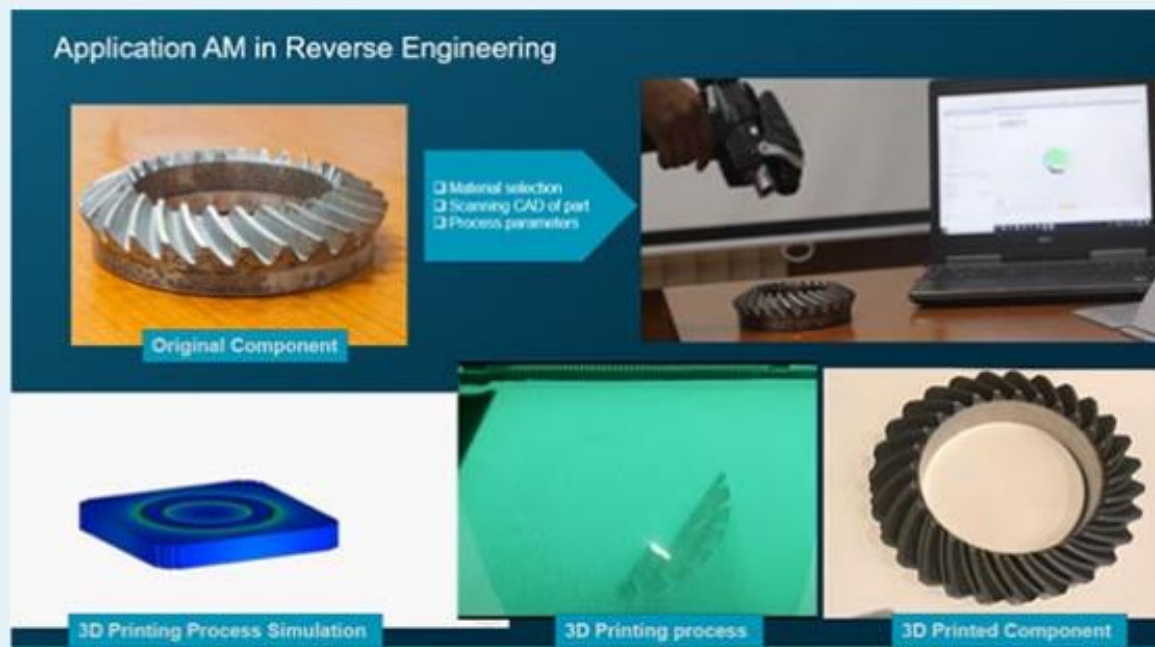
- Generative Design / Light weighting
- Performance and Durability analysis
- Design validation for AM
- MES Software to monitor end to end workflow
- Manufacturing and cost estimation
- Quality inspection / scanning of 3D printed part
- 3D Visualization of CT scan
- Post heat treatment analysis
- Machining and Toolpath generation

Application of AM in Healthcare:



Workflow stages	Description
1. CT Scanning of patient	<ul style="list-style-type: none"> Image acquisition from patient Scan data in DICOM images NDA with Patient/Doctor
2. Convert DICOM images to 3D CAD model	<ul style="list-style-type: none"> Import DICOM images to VG Export in 3D CAD format
3. CAD Re-construction	<ul style="list-style-type: none"> Convert STL to NURBS Geometry Re-construction of geometry using NURBS geometry NURBS geometry compatibility with third party software
4. 3D Printing Process Simulation and optimization	<ul style="list-style-type: none"> Best orientation and Support generation for of part Process parameters definition Cost estimation and validation for 3D printing
5. Durability and fatigue life estimation	<ul style="list-style-type: none"> Durability test as designed Durability test as printed
6. 3D Printing of part	<ul style="list-style-type: none"> Physical part printing and post processing Printing of defect part along with part
7. Scanning	<ul style="list-style-type: none"> Scanning of part for dimensional check Dimensional accuracy with initial design
8. CT Scan for quality	<ul style="list-style-type: none"> CT scanning of part Check for void and cracks (Quality)
9. Ready to use	<ul style="list-style-type: none"> Defect free implant

Reverse Engineering in AM:



Re-engineering workflow

- Scanning of reference geometry/CAD Modelling
- Material selection for part
- Process parameters selection
- Manufacturing process simulation
- Part printing and process optimization
- Quality inspection and 3D visualization
- Performance analysis

Please refer to their website for more case studies and product details :
<https://www.mscsoftware.com/application/additive-manufacturing>

About the Author

Mr. Santhosh Nagaraju leads the Materials and Manufacturing solution at Hexagon- MSC Software Corporation. He started his career at SFTC; a US based material forming simulation company, where he held various positions like Technical Support and Business Development. He also worked in SKF Bearings – R&D team, on Forming, Heat Treatment and rapid prototyping operations. Santhosh is currently working with MSC software as technical specialist/BD for Indo-Pacific region and he has done his Master Degree in Machine Design from RV College of Engineering. Mr. Santhosh has the credit of implementing various advanced simulation solutions at Global OEM, 3D printing service bureau and R&D Institutes. He played a crucial role in providing end-to-end solution for additive manufacturing.

SKILL TO SCALE !!!!!

- Mr. V. Sudarshan



Going by the history individuals who take to Entrepreneurship or the one who become Intrapreneurs are the one who possess high skill sets. The peak Skill in the individual provides them immense confidence to move in the direction of opportunity. Entrepreneurs are a boon not only for self but for the society and nation at large.

Across multiple education stream Students opting the stream of their choice have always come out successful. Individuals Skill can also be a greatest coincidence of preparation meeting the opportunity.

The supply versus demand for skilled work force across the Globe is too big. Over 85% of the students who pass out institutions would not stick to their field of learning instead would swap to something unknown. Top scorers need not always obtain best of skills.

“Our collective target should be to get rid of unemployment for which Sustainable Entrepreneurs count must grow and this is possible only when Skill level is at its best. Then why wait, let’s focus on Skill today...”

LET’S MAKE INDIA WORLDS SKILL DESTINATION!!!”

Best of Skill in an individual need not always end up being an Entrepreneur but can also become an Intrapreneur. Big Corporates / Multinationals are in desperate need of competent individuals which is always in huge demand.

When we know what’s required to lead our career in a RIGHT path then why aren’t we focused???

Every individual is important to change the status of yourself / Family / and the Nation.

About the Author

SHRI V. SUDARSHAN is the Managing Director of Spectrum Tool Engineers Private Limited and Spectrum Tech vision Private Limited.

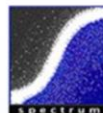
Shri Sudarshan is a first-generation entrepreneur right out of the college. He had his early education training at the Government Tool Room & Training Centre - BLR during 1985 - 89 , where he obtained his Diploma in Tool & Die Manufacturing. He was a topper in his batch. Inspired and motivated by a senior Industrialist started a small tool room with the vision to provide high quality tooling and part supply services to the OEM. However, quite a few job offers came his way, the burning ambition to be an entrepreneur kept him on the course of building the Industry. Thus, an SME was born in 1990.

He established business relationship with large industries like Larsen & Toubro Limited, ABB India, Rittal India, SKF, Commscope, Schneider, TE Connectivity and Bosch, among others. The focused efforts and quick response to the customer needs helped the entity to become a preferred vendor to many Multi-National companies.

He is a very successful entrepreneur with equally heavy orientation towards technology. Inspired by the Union Government's initiative, "Make in India" and Aatma-Nirbhar Bharat. Mr. Sudarshan has already developed different product lines in this regard and has obtained necessary registration under Intellectual Property of India for few of its products for design and technology designed and developed in-house. The VISION of Spectrum is to bring out the best quality, durable solution to the Society at a more affordable price.

He is a member of industry bodies like KASSIA, FKCCI, BANSSIA and LAGHU UDYOG BHARATHI. In the year 2002 he was selected to represent the Tool & die Making Industries of Karnataka in Japan for the program - Development of Die & Mould Industry. He continues to be active alumni of Association of Technical Overseas. He is also council member in BU for implementation of NEP. As part of giving back to the society, he engages himself with Technical Training Institutes in and around Bangalore to help the student with his own experience in the industry.

He is actively working on SKILL UPGRADATION & ENTREPRENEURSHIP DEVELOPMENT with many educational institutions. He has carried out many Social activities such as planting over 2500 trees so far in and around Bengaluru, free medical check-ups to the employees, free eye-tests to employees, etc., as part of activity under the Corporate Social Responsibility.



Shri. Sudarshan passionately encourages and supports Entrepreneurship,
if any one is keen can contact him directly

SHRI V. SUDARSHAN
Managing Director

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Spectrum Techvision Private Limited



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spectrumte@gmail.com



Calendar of Events

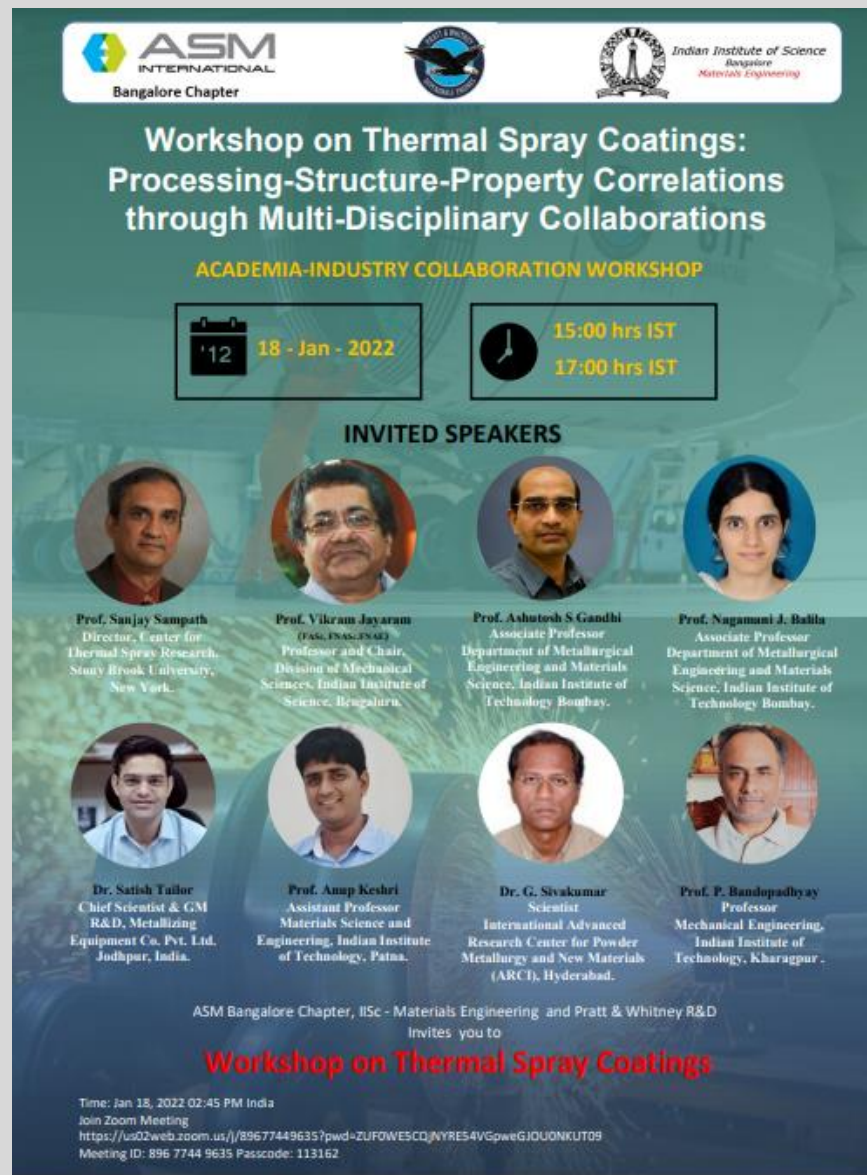
Academia-Industry Collaboration Workshop

Academia-Industry Collaboration Workshop on "Thermal Spray Coatings: Processing-Structure-Property Correlations through Multi-Disciplinary Collaborations"

This was organized by ASM (I) Bangalore Chapter, IISc - Materials Engineering and Pratt & Whitney R&D.

Date / Venue

January 18, 2022 @ Zoom Meeting Online Platform



**Workshop on Thermal Spray Coatings:
Processing-Structure-Property Correlations
through Multi-Disciplinary Collaborations**

ACADEMIA-INDUSTRY COLLABORATION WORKSHOP

18 - Jan - 2022
15:00 hrs IST
17:00 hrs IST

INVITED SPEAKERS

- Prof. Sanjay Sampath**
Director, Center for Thermal Spray Research, Stony Brook University, New York.
- Prof. Vikram Jayaram**
(FAS, FNAS, FNSM)
Professor and Chair, Division of Mechanical Sciences, Indian Institute of Science, Bengaluru.
- Prof. Ashutosh S Gandhi**
Associate Professor, Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay.
- Prof. Naganani J. Babu**
Associate Professor, Department of Metallurgical Engineering and Materials Science, Indian Institute of Technology Bombay.
- Dr. Satish Tailor**
Chief Scientist & GM R&D, Metallizing Equipment Co. Pvt. Ltd., Jodhpur, India.
- Prof. Anup Keshri**
Assistant Professor, Materials Science and Engineering, Indian Institute of Technology, Patna.
- Dr. G. Sivakumar**
Scientist, International Advanced Research Center for Powder Metallurgy and New Materials (ARCI), Hyderabad.
- Prof. P. Bandopadhyay**
Professor, Mechanical Engineering, Indian Institute of Technology, Kharagpur.

ASM Bangalore Chapter, IISc - Materials Engineering and Pratt & Whitney R&D
Invites you to

Workshop on Thermal Spray Coatings

Time: Jan 18, 2022 02:45 PM India
Join Zoom Meeting
<https://us02web.zoom.us/j/89677449635?pwd=ZUFOWE5EQjYRE54VGpweGJOUkU0R09>
Meeting ID: 896 7744 9635 Passcode: 113162

Technical Lecture / Talks**“Adopting Additive Manufacturing Technology in Manufacturing Industry and Industry 4.0”**

Date / Venue	January 22, 2022 @ Zoom Meeting Online Platform
Speaker / Programme	Mr. Santhosh Nagaraju, Technical Specialist, Indo-Pacific, Hexagon-MSC Software Corporation

**“Realization in of Fits & Tolerances in Mechanical Design ”**

Date / Venue	February 19, 2022 @ Zoom Meeting Online Platform
Speaker / Programme	Mr. V A P Sarma, Scientist-F, Centre Head-AEAMT CMTI, Tumkur Road, Bangalore , INDIA



“Aircraft Materials: Opportunities and Challenges – HAL’s Perspective ”

Date / Venue	March 19, 2022 @ Zoom Meeting Online Platform
Speaker / Programme	Dr. R. R. BHAT , AGM (Lab & Quality) – Retd., Foundry & Forge Division, Hindustan Aeronautics Limited, Bangalore



ASM International Bangalore Chapter cordially welcomes the following New Members who have joined during the period – From 1st January 2022 to 31st March 2022:

Sl. No.	Names of the New Members
1	Mr. M. Mahadevappa, Swati Precision Tool Room
2	Mr. G. Srinivasa Murthy, Global Technology Services
3	The Commandant, Air Force Technical College
4	Mr. Sudarshan V, Spectrum Tool Engineers Pvt. Ltd.
5	Dr. A. L. Muralidhara
6	Mr. Aditya G. Bharadwaj, Multiple Special Steel Pvt. Ltd.

Events Calendar 2021-23

1. Memberships	Drive by Headquarter / India Task Force
2. Monthly Technical Talks	To improve consistency and Participation
3. Student Outreach	<ul style="list-style-type: none"> a) Events for Students – Talks + Industrial Visits b) Membership & Student Chapter Formation c) Support in Projects / Training d) Material Camps
4. Major Events	<ul style="list-style-type: none"> a) One/Two Days Workshops / Seminars b) Annual Get-together c) Annual General Body Meeting d) Hosting of INC Meeting / Visiting ASM Leaders e) Support to other ASM Chapters / Local Associations in their events.
5. Technical Talk	Every 3 rd Saturday 5.00 pm
6. Executive Council Meetings	This Qtr. –January 22, 2022 ; February 19, 2022 ; March 19, 2022

SUSTAINING MEMBERS OF ASM (I) BANGALORE CHAPTER



Hexagon-MSC Software Corporation



Lakshmi Vacuum Technologies



Spectrum Tool Engineers Pvt Ltd



Air Force Technical College Bangalore

ASM International -Bangalore Chapter

Visit www.asmlrchapter.com for more details about ASM Bangalore chapter and membership

For Advertisement: Pl Call Editor - **Dr. Priyanshu Bajaj - Mobile : +91 6232393053**

Please mail your valuable suggestions/comments to: asmlr2015@gmail.com