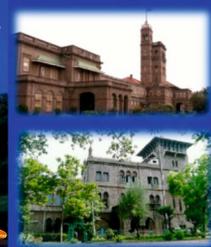




Chapter News Letter



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Nitin Joshi

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EDITORIAL . . .



Dear Members,
Wishing you all a very Happy New Year. I hope this year brings in immense success, happiness and prosperity in our lives. Starting on the same note, let us look back on what a year it has

been for ASM , Pune chapter. We have set a benchmark for ourselves in terms of the contributions made by the members and the working of the organisation. This year we intend to plan and perform better than before and emphasise our sustainable growth and the reach. We belong to an industry with constant changes and it is essential to be updated with the emerging trends and technologies such as Nanotechnology, Additive Manufacturing and Material Informatics being introduced and making headway in the technology adoption.

ASM Pune Chapter has been witnessing constant growth since it's inception. The key factors facilitating the same is the dynamic and pragmatic leadership and the engagement of members. The new year should be the reflection of this legacy being carried forward. Additionally inclusion and diversity in the members will assist the broader engagement. Under the guidance of our senior members, we can collaborate with industries and educational institutions to expand the reach of the organization. Therefore, it would be exciting to be a part of the change we all wish to see and work towards the same.

With Best wishes to all of you

Nitin Joshi
Editor

Launching event of International Conference and Exhibition M&MT 2024 and Technical talk

1) M&MT Conference (November 2024) Launching – Event 1

ASM International Pune chapter officially launched its upcoming conference on 19th December at the Poona Club, Camp, Pune. This was followed by a technical lecture and dinner with cocktails. This event was well received by the crowd and there were over 43 people present.





A lecture on Advanced Surface Engineering Technologies was given by Dr. DA Karandikar which was the in-tune with the theme of the M&MT conference.

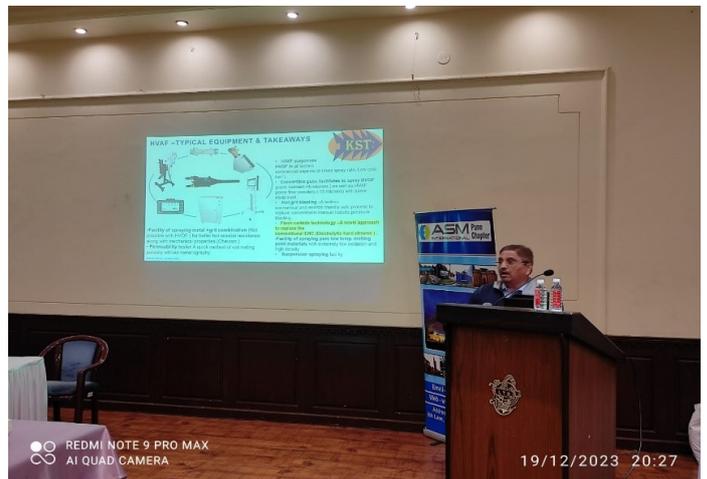
Dr. D. A. Karandikar is MTech, PhD from Indian Institute of Technology Mumbai in 1987 and has almost 35 years of experience and 25 publications of surface engineering cum modification techniques with specialization in Thermal Spray Technology. Delivered lectures at IIT Delhi, Roorkee and in various conferences. Travelled to Europe and USA in connection with coatings on hydro parts during ANDRITZ tenure. He is currently the CEO of Kinetic Surface Technologies and the CTO of Spraymet Surface Technologies, Pune.

Surfaces are not just the entity, but they are functional and take part in the actual performance of every industrial component. Hence surface modification to suit various arduous and stringent working environments is needed. These surface modification processes range from conventional (Powder and wire flame spray, wire arc spray, Atmospheric & vacuum plasm spray, High Velocity Oxyfuel Spray) to the most advanced one as below resulting in life enhancement. Today we are discussing 3 different advanced surface modifications on technologies which are at the forefront, and they are:

- 1) Axial Plasma with suspensions spray,
- 2) High Velocity air fuel spray
- 3) Cold spray

These technologies are suitable for various materials and having typical characteristics providing an optimum life for industrial components in industries such as space, nuclear, steel, automotive, oil and gas, textile, hydropower, thermal power, coal, and mining etc. Dr. Karandikar not only explained all these technologies and processes in detail, but also gave a very wholesome picture of the industry scenario of the use of these in India with respect to the world.

A few photos of the lecture are shown below.



1) M&MT Conference (November 2024) Launching – Event 2

On 7th Feb 2024, we marked a milestone with the International Conference & Exhibition - M&MT 2024 launch event.

The evening, we commenced with a warm welcome from Mr Rahul Gupta, Chairman of ASM International Pune Chapter, who graciously shared insights into the recent accomplishments of our chapter. Dr. RKP Singh, Chairman of M&MT 2024 and Senior Director at KCTI, Bharat Forge, set the stage by sharing the conference's background and importance.

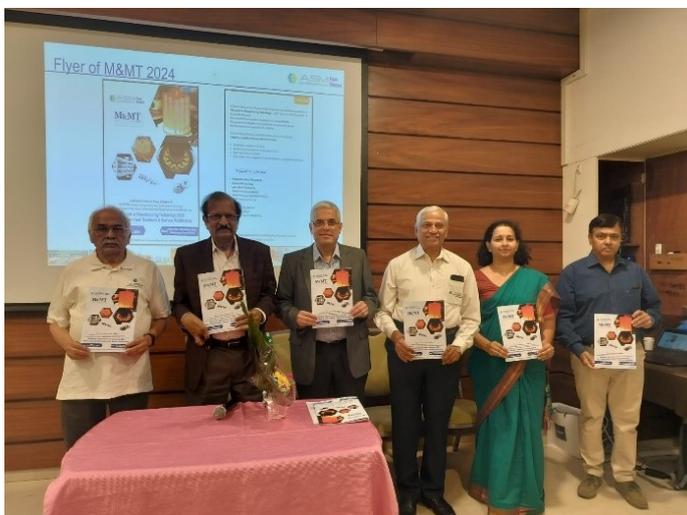
A moment of pride as Bhimsen Galgali, Vice Chairman, ASM International India National Council, unveiled the captivating brochure for the International Conference & Exhibition – M&MT 2024, scheduled for November 2024, organized by ASM Pune Chapter.

Highlighting the event was a captivating Technical Talk by Prof. Shrikant Joshi, from the Department of Engineering Science at University West in Trollhättan, Sweden, on "Advances in Thermal Spray Coatings for Combating Industrial Wear."

Dr Shrikant Joshi has nearly 30 years of experience in areas spanning Surface Engineering, Laser Materials Processing and now also Additive Manufacturing. He is a Chemical Engineer by academic training, having obtained his M.S. and Ph.D. degrees from the Rensselaer Polytechnic Institute and University of Idaho, respectively, in USA. Prior to moving to Sweden in 2015, he has had long stints as a Scientist at the Defence Metallurgical Research Laboratory (DMRL) and the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI) - two premier federally funded materials' research laboratories in India. His current areas of research are high velocity air fuel (HVOF) spraying, solution & solution-powder hybrid thermal spraying and additive manufacturing. His work has led to many industrial applications, over a dozen patent submissions and more than 225 publications in peer-reviewed journals. He is a Fellow of ASM International, the Institute of Materials, Minerals & Mining (IoM3) and the Indian National Academy of Engineering. Earlier this year, he was also inducted into the Hall of Fame of the ASM International's Thermal Spray Society.

Prof. Joshi shared profound insights into sustainable processes and material options for Thermal Spray Coatings, showcasing groundbreaking research by his team. The lecture, beautifully delivered was because of its simplicity. Dr. Joshi managed to capture the audience with his knowledge and style of giving technical information without going much in detail.

We were honoured to have dignitaries from both Industry and Academia join us for this insightful evening. This was a great opportunity to network with industry and academia.





Events

Students Materials camp

ASM International Pune Chapter held a Students Materials camp i.e. a free two day program at GPP Pune on 2nd & 3rd February 2024. Some highlights of the same are shown below:

There was no charge to enter the material Challenge.

The Challenge:

- Students should aim to do something original, for e.g. build something with their own hands - a testing or measurement device or make a structural comparison of materials for a specific purpose or implement other ideas.
- Test their project





Message

Dear Readers,

The economic growth of any region has a strong correlation with the geopolitics so the iron and steel sector is also dependent on the international situation.

Most countries in the world are fearing a recession due to the disturbance as mentioned Ukraine -Russia war a uncertainty in Today's world.

We are expecting a robust economic growth in coming years which surely translate into a big steel demand. No wonder in the chart of Countries facing recession probability; India rightfully assumes the last position.

The future road is going to be corrugated and with stiff competition. Only the best is going to survive.

On the other hand it has a lot of challenges and only steel manufacturing is going on the path of digitalization, green steel making remains a big challenge facing the industry, recycling is not being practiced to the extent it should be. A lot of unsolved problems. With all this, I should say that we will have a very challenging yet exciting and interesting journey ahead

ASM International Pune chapter will devote to science and application of advanced surface treatments for improvement of material properties as surface engineering and coating is a simple and inexpensive method for surface modification of the membrane and it can be done easily in industrial operations and also on a large scale. A Two day conference will be held in Pune during November 2024.

Advances in science and engineering both solve problems and generate fresh challenges for every tech break. Though there is an emerging supply chain of materials, processes and technology are needed to exploit it.

Material science and corrosive and high temperature environments 'Engineering generally, and surface modification, coating specially, play a key role in commercialising laboratory breakthroughs.

They enable what was previously impossible or impractical, like using surface coating to make light metal withstand highly.

Surface modifications also accelerate the development and adoption of New technologies.

Welcome to FUTURE



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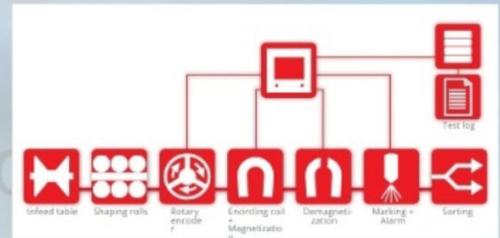
Bars

db PRÜFTECHNIK
Non destructive testing systems
for semi-finished metal product



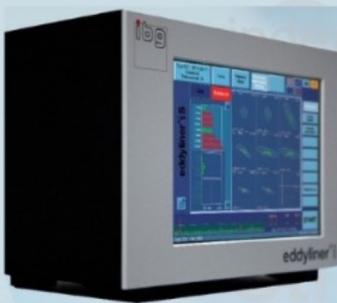
Wires

100 % inline structure
crack non-destructive



Setup for offline inspection

Structure Test



Crack Detection



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For finished components



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Technical Article Modern Technologies And Innovations In Metallurgy

Innovations motivate us to extend our views and investigate new manufacturing and technical possibilities. By combining advanced technology with experience, people can improve all existing industrial and scientific branches.

Metal processing innovation is a key element in metallurgy's ability to compete in today's global market. The capacity to fulfill the market's demands with high-quality metal goods' production in a timely way is the main condition for its effective development at the global, national, and regional levels.

The improvement of processing techniques, advanced materials, robotics, synthetic biology, and information technology, show that the future of metallurgy is expected to be significantly different from current processes.

Metallurgy stays up with other industries in terms of following global trends. Today, its priority is the sustainable production of steel.



The utilization of high-strength steels necessitates the implementation of modern equipment at both new and refined manufacturing facilities, with digitalization becoming an important component of all industrial processes. The future of steel production strives for sustainable development. This in turn leads to the emergence of materials with new, unbelievable qualities.

High strength steel

In today's metallurgy, the transition from conventional steel grades to high-strength steel is a major trend. Such steels provide a variety of benefits to design engineers and may be utilized to solve tough or unique engineering issues.

For example, they are indispensable in the automotive sector, where manufacturers seek to produce lighter, cleaner, and more economical vehicles. The distinctive characteristics of maraging steel made it crucial in the military industry for the manufacture of barrels of weapons, aircraft catapults, and rocket engine hulls.



Hydrogen metallurgy

Although it is estimated that hydrogen metallurgy will begin to pay off no earlier than 2030, this is an essential process for the transition to more environmentally friendly metal production.

Hydrogen metallurgy is a technique that uses hydrogen instead of carbon as a reduction agent to minimize CO2 emissions, and is advantageous to the steel industry's long-term sustainability.

Dillinger, Saarstahl, and many other metallurgical companies have already begun implementing this method. The Swedish company HYBRIT, projects H2FUTURE by Voestalpine (Austria) and SALCOS by Salzgitter AG (Germany), are examples of hydrogen metallurgical technology's introduction.



Direct reduction of iron (DRI)

The growing scientific and industrial interest in the development of technologies that allow the production of direct reduced iron has resulted from the worldwide need to minimize energy consumption and environmental issues.

DRI is created by removing oxygen from iron ore in its solid form. This technique covers a wide range of processes that use diverse reactors and reducing agents. DRI operations can minimize CO2 emissions by utilizing natural gas instead of coal.

Although the effectiveness of this technique is not in doubt, it does need a plentiful supply of raw resources with a high iron concentration and low impurity level at first.

Automated processes and digitalization

Digitalization is yet another significant aspect of modern metallurgy. It is aimed at full automation of the enterprises, with the employment of robots in dangerous working areas resulting in increased workers' safety. Equipment monitoring systems and effective tools will increase the transparency of processes contributing to the optimization of all the working procedures.

Digitalization will also make it easier to check surfaces and working parts in real-time to determine the quality of the completed product and to systematize faults.

Digitalization has both tremendous business and human impacts. It is necessary to acquire new skills and competencies. People will have to adapt to a new style of working, which will include learning, self-improvement strategies, sharing a transparent work culture, and making decisions based on numerous data.

As we can see, innovations are much more than just brilliant ideas. A well-thought-out strategy and far-reaching planning, taking into account possible difficulties, are also required. Thus, the strategy of the metallurgy industry will continue to develop in the following directions:

- meeting future demands on new products encouraging product innovation, for new social and economic problems solutions;
- constant improvement of materials' characteristics and performance;
- optimization of exploration, manufacturing, processing, and recycling;
- empowering modern technologies and infrastructure;

In the nearest future, advances in material science and metallurgy will give possibilities to improve traditional metallurgy, taking into account its key issues in the economics, energy, environment, and social aspects, using improved current and completely new processes. These developments will have a huge influence on the global economy as well as society's social image.

[Taken from the following link: Metal processing innovation is a key element in metallurgy \(patriot-nrg.com\)](http://patriot-nrg.com)

Volunteer yourself for your Chapter!

For more efficient working & expanding network of your ASM International Chapter, please support your chapter by offering your time. Lot of avenues to choose areas of your liking. Options are - Membership Development, Education Programs, Students Outreach, Member Service, Website, News Letter, Technical Program and Social Events. Contact ASM International Pune Chapter asm.pune@gmail.com



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Students Outreach Material Advantage Students Chapter Under American Society for Metals

- 1) A Student outreach program was held in GIT Belgavi on the 22nd of December in form of a technical lecture by Sanjeev Inamdar on 'Heat treatment process and Theory'. 45 students attended this lecture which highlighted the diverse applications of industrial materials across various sectors and explained the critical role these materials play in shaping modern technology and infrastructure.



2) Industrial visit to PTP CNC Tooling Pvt. Ltd. in Macche Industrial estate

The facility is equipped with modern infrastructure, including furnaces, quenching tanks, and quality control laboratories, students are briefed about various heat treatment processes.

The visit to the heat treatment plant by 45 students of 3rd year provided valuable insights into the intricate processes involved in enhancing the mechanical properties of metals. The combination of advanced technologies, stringent quality control measures, and a focus on safety and environmental sustainability showcased the plant's commitment to delivering high-quality heat-treated materials. This experience deepened our understanding of the crucial role played by heat treatment in various industries and its impact on the overall performance of materials in real-world applications.



3) **3day's workshop on composite materials in association with vega aviation product's Pvt Ltd**
 Mr. Dev Mirajkar along with Sanjeev Inamdar and Mahesh Kori were the main people conducting this workshop.

The workshop successfully achieved its objectives by providing a platform for participants to enhance their knowledge of composite materials, manufacturing processes, and practical applications. The combination of theoretical sessions, hands-on skill development, and an industrial visit contributed to a comprehensive learning experience for all participants.





KNOW OUR MEMBERS



New Individual member

Name : *SANTOSH CHAKRABORTY*

Designation: *MANAGING DIRECTOR*

Present Organisation / consultant / others: *WITMANS ADVANCED FLUIDS PVT LTD*

Function: *MANAGING DIRECTOR*

Contact information (Mobile, E-mail) and other details if any: *SC@WAFPL.COM / 9970127754*

- **Education details:** *BE - MECHANICAL / LEADERSHIP PROGRAM - IIM KOLKATA*
- **Work experience:** *+44 YRS*
- **Area of expertise:** *LEADERSHIP ROLE / BUSINESS STRATEGIES DEVELOPMENT / P&L*
- **Business Details If Any:** *WE ARE THE MANUFACTURER OF ADVANCE METAL WORKING FLUID I.E HIGH PERFORMANCE CUTTING OIL, QUENCHING OILS, POLYMERS, RUST PREVENTIVES, CLENERS, MAINTANENCE FLUIDS ETC.*



New Individual member

Name : *Anil Tathawadekar*

Designation: *Director*

Present Organisation / consultant / others: *ABAN TECHNOLOGIES*

Function:

Contact information E-mail: anil@aban.co.in Mobile- 7447433035

- **Education details:** *B. E. Metallurgy*
- **Work experience:** *22 Years*
- **Area of expertise:** *NDT - eddy current*
- **Business Details If Any:** *ABAN TECHNOLOGIES*

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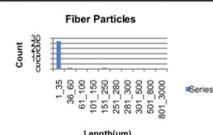
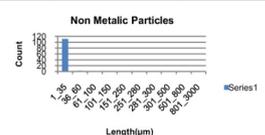
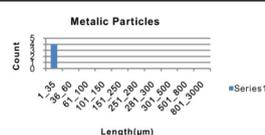
PARTICLE TEST REPORT.

Customer	ABC		
Part No:	A124N	Recd Date:	04-Jun-18
Report No.:	1672	Department :	QA Lab
Sample ID:	ABC	Test Date:	05-Jun-18
Analysis:	Particle	Standard Specification:	As per ISO 16232
Magnification	100X	Filter paper Size:	47 mm
No. of Fields :	5	Scanning Area	30 mm



Particle Size Analysis

Size ranges(µm)	1_35	36_60	61_100	101_150	151_250	251_280	281_300	301_500	501_800	801_3000	Total Count
Metallic	4	0	0	0	0	0	0	0	0	0	4
Non Metallic	111	3	0	0	1	0	0	0	0	0	115
Fibres	27	1	0	0	1	0	0	0	0	0	29



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