

ASM International, Pune Chapter Chapter News Letter

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September 2017

EDITORIAL...



Dear Members,

Welcome to the September, 2017 Newsletter in the Silver Jubilee year of our Chapter.

Keeping in tradition of the Chapter, we bagged two Awards at Leadership Days event - in the areas of Membership Development and Retention and in Communication. The excellent work done

by Mr. L. D. Deshpande, Mr. Hemant Zhaveri and Mr. Vaz has really paid off.

My congratulations to them !

We conducted three technical programs And two training programs

details of which are given in this newsletter.

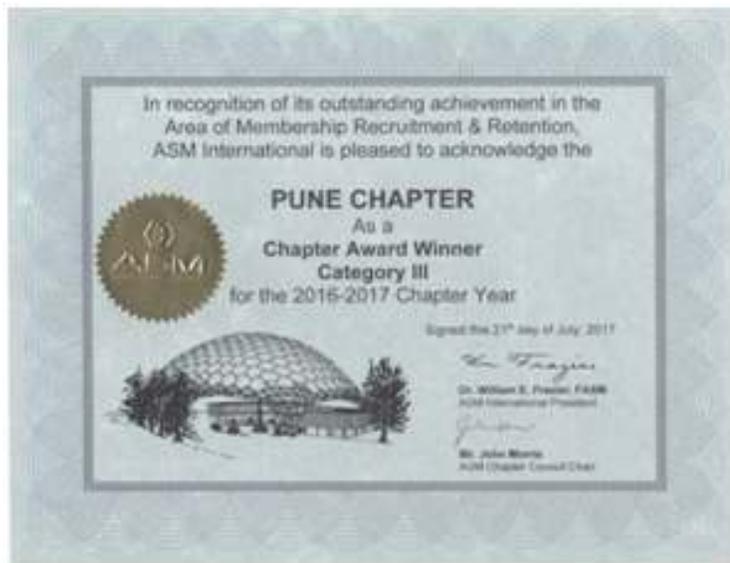
Forthcoming are following important events:

1. A presentation by APAR India on "Quenching Oils" on 20th September
2. The first Dr. Abdul Kalam Memorial Function to be celebrated as Materials Day with India National Council which Pune Chapter will host.
3. Last but not the least, a Conference "M & MT 2017" On 9-10 Nov. 2017 with a focus on Dies and Tools Technology.
4. First "Teachers' Camp" - a new initiative by our chapter.

S. G. Kulkarni

Vice Chair-Pune Chapter.

CHAPTER AWARD



In recognition of its outstanding achievement, ASM Chapter Council, has conferred on ASM, Pune Chapter a Chapter Award for the year 2016-2017 in each of the following areas:

1. Communications
2. Membership Recruitment, Retention & Recognition.

Mr. L.D. Deshpande represented ASM International, Pune Chapter

for the leadership Day.

Mr. L D Deshpande was bestowed upon President's Medal for ASM development activities at ASM Pune Chapter.

We at ASM Pune, congratulate Mr. Deshpande, and fully support him to achieve still higher targets for the Chapter.



Dr. William E. Frazier presenting the medal to Mr. L.D. Deshpande



IMPORTANCE OF CONTROL IN HEAT TREATMENT FURNACES

A technical Presentation on Importance of Control in Heat Treatment Furnaces was held jointly by ASM International Pune Chapter and Gefran India Pvt. Ltd. At Hotel Pride Pune on 23rd March 2017.

Mr. Kalpesh Desai General Manager, Gefran India Pvt. Ltd. gave the presentation.

He first explained what INDUSTRY 4.0 means He went on to explain how INDUSTRY 4.0 goes to create a smart factory, and how within the modular structured smart factories, cyber physical systems monitor physical processes, create a physical copy of the physical world and make decentralized decisions. He also explained what integrated thermal protection is and its advantages. He explained the function of electronic fuse and its advantages. The technical session was well received by the audience.



A very attentive audience at the presentation



Mr. Desai at his presentation.



3- Day Proficiency Improvement Programme on 'Metallurgy for Non- Metallurgist'

A Three day- Day Proficiency Improvement Programme on 'Metallurgy for Non- Metallurgist' was held jointly by ASM International, Pune Chapter, and ARAI, Pune ARAI-FID, Chakan from 10th to 12th April 2017.

These proficiency training programmes are regularly conducted by ASM, Pune Chapter and ARAI, Pune.

This training provided concise knowledge of metallurgy with a focus on industry applications for working

professionals/ engineers (design, maintenance, manufacturing, service, sales, and purchase depts...

The Faculty for the programme comprised of Senior Materials Engineering Professionals from Industry & Senior Educationalist.

42 participants attended this PIP, and from the feedback received by the faculty, after the course the participants found the course very useful and educating.



PARTICIPANTS AND FACULTY



A LECTURE IN PROGRESS

INDIAN STARTUP ECOSYSTEM

A Technical Presentation on Indian Startup Ecosystem by Mr...Darshan Doshi, President and CEO of Materials Modification, Inc. USA was arranged by ASM International Pune Chapter on 29th April 2017 at the ASM Office, Pune.

Mr. Darshan is passionate about bringing new ventures to life and has a strong background in strategy, business development, operations and marketing.

He has organized startup competitions and workshops in Boston and Pune, and mentored startups to achieve product-market fit as well as scale up efforts.

Mr. Darshan began his presentation by saying that about 90% startups fail worldwide. He explained what "Startup India" is. In 2016 there were over 4750 startup bases in India, concentrated mostly in NCR, Bengaluru and Mumbai. He also gave a startup funding breakup in India. The very concept of startup was very



Darshan giving his presentation

well explained to the audience, and being new to this concept, the audience appreciated the presentation



WHEELABRATOR SURFACE PREPARATION SOLUTIONS

ASM International Pune Chapter & Wheelabrator held a Technical Presentation on

“Wheelabrator surface preparation solutions” by Mr. Jayanth Murthy, General Manager- Sales (W&A) in DISA India Limited on 21st June 2017, at Boat Club, Pune.

Mr. Murthy explained the process of shot blasting, the types of shot blasting. He also explained the care that is taken for shot blasting of heat-treated components and the safety features for shot blasting of heat-treated components..He then went on to explain the peening process in detail, and the difference between peening and shot blasting. The presentation was very well appreciated by the audience.



A section of the audience



Mr. Murthy giving his presentation

Wheelabrator surface preparation solutions

As part of Proficiency Improvement Programme Series, a Three Day Proficiency Improvement Programme on “Basic and Advances in Heat Treatment” was conducted jointly by ASM International, Pune Chapter, and ARAI, Pune. at ARAI-FID, Chakan, from 19th -21st July 2017.

The participants were given a Brief Overview on Engineering Materials Grades and Standards, Iron-Carbon Equilibrium Diagram, and Basics of Metallurgy, Fundamentals of Heat Treatment, Types of Heat

Treatment Processes and Bulk Heat Treatment: Casting & Forging Effects of alloying elements on Steels, etc..The programme covered the heat-treatment of various metals it also delved on the topic of CQI 9 (AIAI - Heat Treatment System Assessment Standard) and/or Check points / Audit points for HT Process Auditing.

A Total of 14 participants attended this Proficiency Improvement Programme.



A Session in progress



A group photo of participants and faculty

CENTRIFUGAL CASTING - By Dhananjay Paranjpe

Centrifugal Casting: The definition of Centrifugal casting is making of casting by use of centrifugal force to form casting. This process is also called as Liquid forging since the metal is forced against a wall to form shape and continuously centrifugal force gets applied on it.

Centrifugal Casting: There are two types of Centrifugal casting machines which are generally employed in manufacture of Castings of all type of metals. They are Vertical axis and Horizontal axis of rotation. That is the axis of rotation defines the type of Machine.

The process consists of Pouring of metal in Molds while the Mold is rotating. The rotation of Mold in turn rotates the liquid metal due to friction in Mold surface and Liquid metal that is poured.

The speed of rotation generates Centrifugal FORCE which lifts the metal against Gravitational force which will otherwise make the Metal fall below and not allow the metal to rotate with the Mold.

The metal hence solidifies while it is rotating and a Casting is formed.

The Centrifugal force generated is directly proportional to Density .The inclusions are metal oxides having lower Density hence the Centrifugal Force generated is lower for Inclusions because of which the inclusions segregate at inside diameter of Casting. Similarly gases also tend to move towards ID of casting and are

removed.

As we all know the Casting is required to be fed for shrinkage during Solidification. We also know that the Casting should solidify in directional solidification in order to be fed properly to avoid any shrinkage defects. This exactly happens due to Metallic Molds the Casting starts solidifying from OD of casting and the last to solidify metal is ID of Casting Hence the Metal in ID of casting acts as a Riser to feed Casting during solidification. Due to use of metallic Molds the cooling rate is much higher to sand castings because of which the grain size is much finer which results into better mechanical properties. Normally water cooling of Mold is done after pouring or even during pouring. This all adds up to get better properties. The mechanical properties thus obtained are comparable to Forgings. The casting when tested with Radiography the results are Level 1 in RT testing

All the Inclusions and shrinkage defects come to ID of casting and by removing metal from ID by machining one can get a sound and defect free casting.

The use of Horizontal or Vertical machine is decided on L/D ratio of casting to be made where L is length and D is diameter of Casting.

The Centrifugal Force generated is required to be min 60 times the gravitational force in order to lift the metal against the gravitational force.



The centrifugal force is directly proportional to speed of rotation and for the same speed of rotation the centrifugal force is directly proportional to diameter.

Hence the speed of rotation is required to be such that at ID of casting the centrifugal force generated is more than 60 times gravitational force.

If the centrifugal force generated is much higher than 60 times it is better for making casting but the limitation is because of vibrations in machine due to higher speeds.

The ID of casting depends on weight of liquid metal being poured and hence one has to pour pre weighed liquid metal.

Since all the defects such as shrinkage and inclusions are brought to ID of casting one is required to provide higher machining allowance on ID of casting.

The parameters to be controlled are

1. Speed of rotation
2. Pouring speed
3. Temperature of liquid metal
4. Weight of liquid metal
5. Proper coating of Mold
6. Temperature of Mold
7. Water cooling of Mold
8. Mold wall thickness

The process limitations are

1. The number of casting poured in a heat are limited by number of machines and Molds
2. Normally only round shapes and symmetrical shapes around an axis can be made
3. The ID of casting is always straight
4. The OD can have steps but only in one direction increasing or decreasing
5. Shaped castings are made but not with full benefits of the process

The applications are

1. Bearing
2. Brake drum liners

3. Cylinder liners
4. Ductile iron pressure pipes
5. Electric motor rotors
6. Flanges
7. Gas turbine rings
8. Gears, Gear blanks including bimetallic
9. Gun tubes and sleeves
10. Heavy wall tube liners
11. Hoist drums
12. Impeller blades
13. Pump liners Pump rotors
14. Rainwater pipes
15. Rollers
16. Textile rolls
17. Valve Balls
18. Valve bodies
19. Valve housings

This list is only a small list and there are many components which can be added to above list.

DHANANJAY PARANJPE

Mr. Dhananjay Paranjpe has graduated in Metallurgy from College of Engineering, Pune University in the year 1976. He has over 26 years of experience in various foundry practices.

He specializes in Centrifugal castings. He is instrumental in setting up and commissioning centrifugal casting units in India and abroad. He is an active member of ASM International, Pune Chapter. He is at present working as a Consultant to various foundries for centrifugal casting including machines design and process controls. He may be contacted on cell no.9850835749.



Know Our Members

Mr. Sameer S Mavinkurve is currently working as a Director in Metform Vacutreat I Pvt Ltd Pune, which provides services of Vacuum heat treatment for dies & moulds industry and various other tool applications industry. He is also associated with Precomp Tools Pvt Ltd (a Group Company), a leading manufacturer in External Thread forming tools.

He has over 20 years of experience in Precision forming tools / Engineering / Automotive / Dies & Mould industry.

Sameer has worked earlier for 2 years in Western India Sales & Service (Authorised dealer for Cummins India) as a Service Manager. He has been working with Precomp Tools for last 15 years as Production Manager / MR for ISO 9001 implementation. Currently he is Head –Operations in Precomp and is responsible for Manufacturing / Quality Management systems /

New Products development / New Project development.

He has developed markets for the forming tools globally in countries like Romania,

Netherlands, Germany and China. He is instrumental in successful JVs and Technology

Transfers in countries like Spain and Germany.

Through his guidance, Metform Vacutreat I pvt Ltd is currently rendering quality services in Vacuum Heat Treatment, EDM drilling Shot Blasting and Blackodising for Dies / Tools /Automotive Components. He has developed special Heat treatment cycles for Special tool applications enhancing tool life.



SAMEER S MAVINKURVE

He may be contacted on
sameer.m@metformvacutreat.com



★★★★★ FIVE STAR CHAPTER

ASM International Pune Chapter

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ASM INTERNATIONAL PUNE CHAPTER

Presents in it's Silver Jubilee Year

International Conference and Concurrent Exhibition on
Materials & Manufacturing Technology

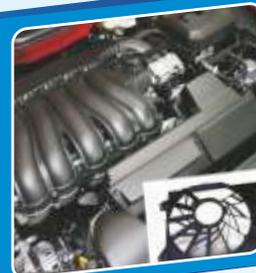
M & M T 2017

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9th and 10th November , 2017

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ABOUT ASM INTERNATIONAL

ASM is the world's largest association of material centric Engineers & Scientists, with a mission objective of **"Assimilation and dissemination of materials information."** ASM informs, educates and connects the materials community, to solve problems and stimulate materials innovation around the world. ASM provides technical knowledge, education, career enhancement, networking, team building & professional development through its network of more than 160 plus ASM chapters worldwide.



ABOUT ASM (INTERNATIONAL) PUNE CHAPTER

Founded in 1992, ASM Pune Chapter is one of the most vibrant chapters worldwide. Having won several awards and recognitions over the past several years, ASM Pune Chapter has organized various seminars and international conferences.

ABOUT THE CONFERENCE

Dies are extensively used in all major Automotive manufacturing processes such as stampings, forgings, die casting, injection molding, forming, etc. In recent years many new developments have taken place in Die materials, Die Design, Heat Treatment, Manufacturing Technology, Surface Modification, Service and Repairs. Faster development of automotive components, Use of high strength and advance high strength steels for light weighting and cost reduction, Reducing product life cycle cost, are some of the challenges faced by the industry today. We believe that there is a solution for every such challenge and hence look forward to bring the stake holders on a common platform.

Title of Paper	Author
• 3D Printing of Dies	Dr. Sundar Atre
• Cryogenic Treatment of Dies - A new Perspective	C L Gogate
• Quenching of Dies to Minimize Distortion	Dr. Nikolai Basko, USA
• Sheet Metal Stamping Dies: Life cycle	Pravin Grover & Hemant Anaokar, TATA Motors, Pune
• Innovative HT of PM Parts to build dies.	Dr. Srinu Raghavan, USA
• Shot Peening of Dies	Dr. Mario Guagliano
• Improving numerical results in sheet metal forming through advanced material and tribological modelization Present and future of manufacturing technologies for body side dies	David Perez-Zamacona, Matrici, Spain
• Combining Heat-Treating and Coating Procedures for Dies	Thomas Mueller, Rubig
• Uniqueness of Characterization of (PDC) Die Coatings	Dr. Imre Feld, USA
• Case Study: PDC Die Repair using Laser Cladding Process	Gururaj Telasang and G. Padmanabham
• Characterisation of Coatings for Aluminum Die Castings	Dr. Edico Peter, USA
• Fluidized bed nitro-carburizing to improve performance of hot work die steels	Valmik Bhavar, Prakash Kattire, Digvijay Sheed, Jagdish Sherkar, Dr. RKP Singh - Bharat Forge
• Cryogenic treatment and New Gen Coatings of Dies	Dr. Bojan Podogorni, Slovenia
• Plasma Nitriding	Dr. Zoltan Kolozsvary
• Plastic Die Moulding - A New outlook	S Mould, Portugal
• Shot Peening of Dies	Amot Aradhya, M/s Precicut Pune
• Life Prediction of L6 Steel using Strain-Life Curve considering strain softening Phenomenon by means of Low Cycle Fatigue Testing	Sanket Inamdar1*, Manoj Ukhande2, Prashant Date3, Dattaprasad Lomate1, Shyam Takale2, R K P Singh1 - Bharat Forge



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HOW CAN YOU BE PART OF THE M & MT 2017?



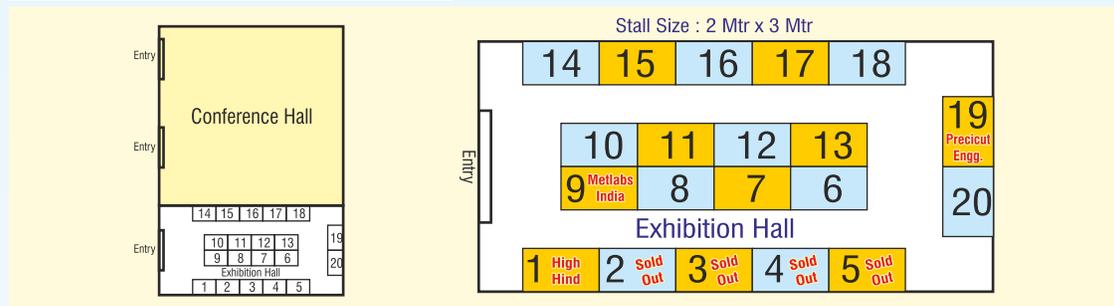
Facilities provided (Exhibitors) :

Table – 1 Nos.
Chairs – 1 Nos.
Electrical Connection (230V 5A)
1 Tube Light, 1 Focus Light.
Higher rating connection charges extra.
One Delegate, One set of Meal Coupons.

Exhibitors:

1. The concurrent exhibition provides an opportunity to showcase your products and services. Kindly refer to the Layout below for selecting the stalls. Only a few stall spaces are available and will be allotted on first come first basis.
2. Stall Charges : ♦ **Non ASM Members** - Rs. 7,500/- per sq. mtr. ♦ **ASM Members** - Rs. 6,500/- per sq. mtr
3. Taxes : Additional as applicable at the time of invoicing.
4. Reach us at : asm.pune@gmail.com & meta@metatechind.com

Exhibition Layout :



Sponsorship Opportunities: Various Sponsorship opportunities are available, as per table shown below.

Patron	Platinum	Gold	Silver	Products Presentation 5 minutes (Only 3 Slots)
10 Lakhs	5 Lakhs	3 Lakhs	2 Lakhs	1 Lakh
Logo on Conference Back drop	Logo on Conference Back drop	Logo on Conference Back drop	Logo on Conference Back drop	5 minutes slot during conference
7 Complimentary Delegates	5 Complimentary Delegates	3 Complimentary Delegates	2 Complimentary Delegates	1 Complimentary Delegates
One Stall (12 sq. mts.)	One Stall (12 sq. mts.)	One Stall (9 sq. mts.)	One Page	Banner during session
Inside Front Cover Advertisement	Back Cover Page Advertisement	Inside Back Cover Advertisement	Colour Advertisement	One Page Colour Advertisement

Avail other branding opportunities through sponsorships of Lunch, Dinner, Conference CD, Delegate Kit, Hi - Tea. For details please contact Mr. Y.S. Gowaikar - Convener Exhibition, Cell No.: 9822012226

ADVERTISEMENTS

Back Cover	1,00,000/-
Inside Front	75,000/-
Inside Back	50,000/-
Coloured Full Page	10,000/-
Black & White Full Page	7,500/-
Coloured Half Page	7,500/-
Best Compliments	5,000/-

GST @ 18% applicable on all above All above Prices in INR

DELEGATES

Delegates	Fees (ASM Members)	Fees (Non - ASM Members)
Single Delegate	6,500/-	7,500/-
Corporate Delegate (5Nos.)	30,000/-	35,000/-
Group Delegate (3 Nos.)	19,000/-	21,000/-

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KEY CONTACT PERSONS

Item	Contact Person	Email	Phone
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SPONSORSHIP	Mr. Rahul Gupta	rahul9463@gmail.com	9423009829
ADVERTISEMENTS & EXHIBITION	Mr. Y S Gowaikar	meta@metatechind.com	9822012226
CO-ORDINATION & COMMUNICATION	Mrs. Ratna	asm.pune@gmail.com	9921826890

BANK DETAILS

Name of Account	Account No.	Bank	Bank Address	IFSC Code
ASM INTERNATIONAL PUNE CHAPTER	09411010000430	Oriental Bank of Commerce	Deccan Gymkhana, Prabhat Road, Pune - 411004	ORBC0100941

Service Tax No. 27AABTA1218R1ZL

PAN No. AABTA1218R

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Contact Person :

For the conference M&MT 2017 :

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Email : asm.pune@gmail.com

ASM INTERNATIONAL PUNE CHAPTER

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