EDITORIAL . . . ✍

Anshuman Ganeriwala

Dear Friends

It gives me immense pleasure to present this edition of Chapter's newsletter.

I am excited to share two achievements by our chapter:

Our chapter recently bagged two awards in area of Communication and Student outreach from ASM Head Quarter. It has been only because of hard work of executive team and all the members of Pune chapter. Kudos to all of you!

Our Chapter Chairman Mr. Udayan Pathak, FASM has been appointed Industrial Technical Expert on Research Council of AMPRI Bhopal. Congratulations to Mr. Udayan Pathak.

Details of both the above is there in the newsletter.

Artificial Intelligence and Machine learning is a rapidly advancing technology basically referring to human like intelligence that can learn, reason, plan and perceive. This issue covers an article published in 'Industrial Heating' magazine on use of Machine learning in evaluation of Non metallic inclusions in steel.

Not breaking the chain of technical lectures, we organized one each in month of July and August on 'Use and effects of Biomedical Materials on Human Body' and 'Latest trends in Cutting tools to reduce cost and improve productivity' respectively.

Under the column, 'Women Metallurgist Speaks' we are pleased to introduce Dr. Kanyakumari Datta, Owner of Data Metallurgical Company, Kolkatta. She talks about her journey as a engineer, a scientist, an entrepreneur and a philanthropist.
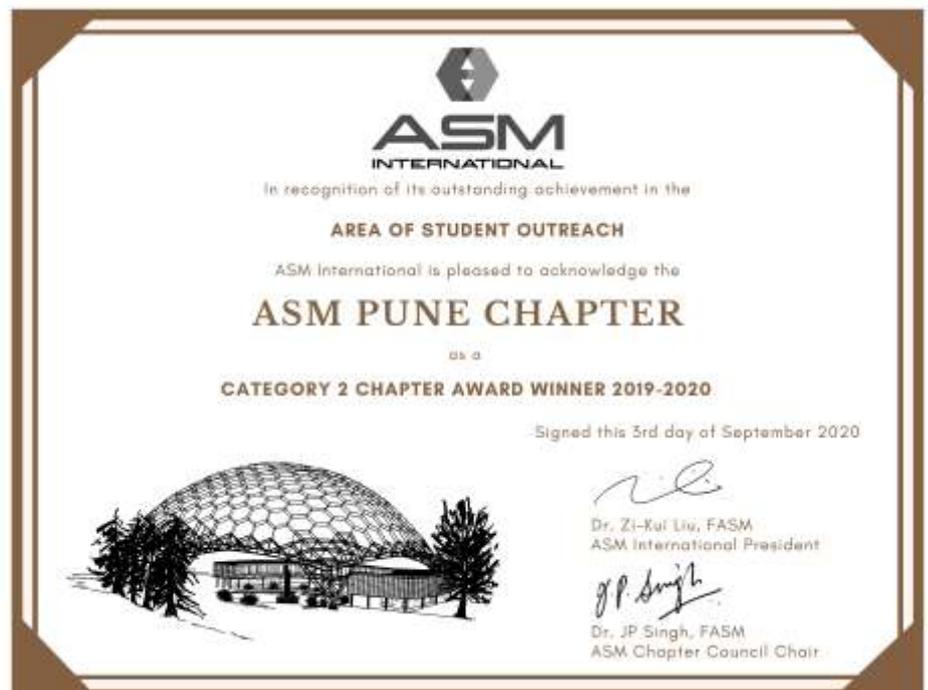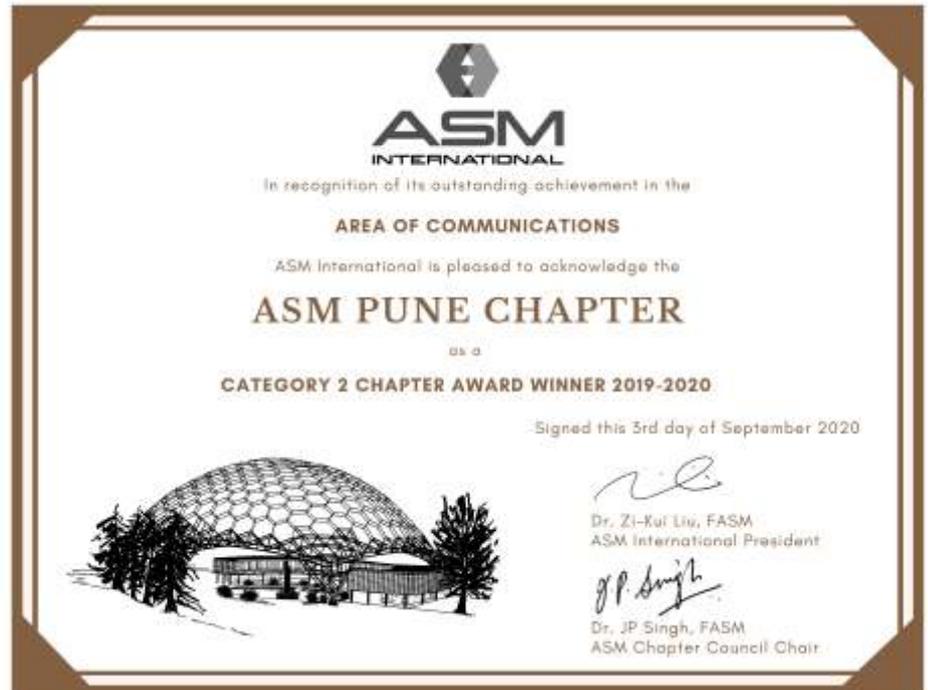
We seek your active participation and welcome comments on this newsletter and suggestions to improve this further.

Editor
Anshuman Ganeriwala

ASM Awards to Pune Chapter

Pune Chapter Bags Two ASM Awards

ASM INTERNATIONAL
In recognition of its outstanding achievement in the
AREA OF COMMUNICATIONS
ASM International is pleased to acknowledge the
ASM PUNE CHAPTER
as a
CATEGORY 2 CHAPTER AWARD WINNER 2019-2020
Signed this 3rd day of September 2020

Dr. Zi-Kui Liu, FASM
ASM International President

Dr. JP Singh, FASM
ASM Chapter Council Chair

ASM INTERNATIONAL
In recognition of its outstanding achievement in the
AREA OF STUDENT OUTREACH
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Signed this 3rd day of September 2020

Dr. Zi-Kui Liu, FASM
ASM International President

Dr. JP Singh, FASM
ASM Chapter Council Chair

Congratulations Team ASM Pune

Pune Chapter Bags Two ASM Awards

As a part of Chapter recognition, ASM Head Quarter installed Five Awards for Chapters. They are for Communication, Innovative Programming, Membership Retention & Recruitment, Students Outreach & Young Professional Engagement. Awards

Glorious tradition of winning Awards for our Pune Chapters started way back in 2005. We received First Five Star Award in 2005 and First Chapter of Excellence Award in 2010. We continued to get booth awards till Restructuring of Awards in 2016. Post restructuring of Awards in 2016, we received three awards for Membership Recruitment & Retentions, Membership Innovative Programming, & Communications. Since then, we are getting Awards almost every year. Keeping the tradition of Awards, this year we received two awards for – Communications & Students Outreach. Congratulation Team ASM Pune, Dynamic Executive Committee and each one of us!

Udayan Pathak, FASM appointed on AMPRI Research Council

We are happy to inform, our Chapter Chairman, Udayan Pathak, FASM has been appointed as Industrial Technical Expert on Research Council of AMPRI Bhopal. Advanced Materials & Process Research Institute (AMPRI) , Bhopal is Premium Research Institute under Council of Scientific & Industrial Research – CSIR. AMPRI is focusing on Research areas like Lightweight Materials, Nanostructured Materials, Smart and Functional materials and Waste to Wealth.

The Research Council will advise AMPRI on formulation of R&D programmes and future directions of activities of laboratory keeping in view national priorities, local and global opportunity areas. Research council will also review R&D activities and research programmes and advice on future directions. Advising AMPRI on fostering linkages between the laboratory, industry and potential clients will also be role of research council. The appointment is for three years.

First time, ASM Pune Chapter member got such recognition by Government of India.

CHAPTER NEWS

Use of bio materials in human body and their effects on human body

A technical lecture was arranged by ASM Pune chapter on bio materials and their effects on human body was held on 19th July 2020. Dr. Yogesh Gujjar gave this presentation The virtual meeting was held on RingCentral platform.

| *Dr. Yogesh giving his presentation* | *Some of the participants* |

When biomaterials are used in the body, they create a reaction. To avoid the reaction biomaterials have to be coated. Dr. Gujjar with the help of slides explained the different methods of biomaterial coating, In his observations with heart operations, where the heart lung machines are used, the platelets of the patients used to drop drastically after the operation. This was because the platelets used to get adhered to the PVC pipes that were used in the heart lung machine. To overcome this problem, bovine albumin extract was first run through the machine, and then the operation was started. It was observed that post operation there was negligible drop in platelets.

He explained the use of different kinds of biomaterials that are used in the human body. He also explained how metallurgy plays an important role in developing and coating these materials. He also explained the use of stents in heart surgery, and the importance of coating of the stents.

There were about 35 participants for the lecture, and was very much appreciated by them.

."Latest Trends in Cutting Tools to reduce Cost and Improve Productivity"

A technical Lecture on "Latest Trends in Cutting Tools to reduce Cost and Improve Productivity" by Mr. Satish Sagdeo, was held on Ring Central platform on 14th August 2020.

37 participants attended the meeting.

In his presentation, Mr.Sagdeo described the various parameters required to improve production efficiency in machining. He explained the cutting tool geometry required for different type of machining. He also explained cutting angles and clearances required in cutting tools. Different materials have different machinability. Silver and copper havemaximum machinability while as titanium is very difficult to machine.

Factors affecting machinability like adhesiveness, thermal conductivity abrasiveness and hardness were also presented. Types of tools like hi-speed tools, carbide tools, nitride tools and ceramic and poly crystalline diamond tools were discussed. Mr.Sagdeo also explained coated tools like PVD and CVD. He concluded by giving the benefits of machining due to the latest technological tools.

The lecture was very well received by the audience, and many questions which were put up were answered privately by Mr. Sagdeo on e-mail, due to time constrains.

UPCOMING TRAINING PROGRAM

ARAI *Progress through Research*

Failure Analysis: including Auto & Engine Components
4 Day Global Online Proficiency Improvement Programme (oPIP)

ASM INTERNATIONAL Pune Chapter

PIP Overview:

Failure of Components is a disastrous experience for user as well as to manufacturer and efforts are always on to avoid such Failures in future. Hence, it is necessary to understand cause of failures. Only a systematic & painstaking analysis can lead to the real "culprit" responsible for failure. Understanding theoretical aspects of stress, failure modes, fracture mechanisms and applying this knowledge to number of failures can build the expertise over a period of time. The present training programme is designed to cover the theory as well as practical aspects of Failure Analysis.

The course will cover three principal topics of interest viz. Procedure analysis, Failure mechanisms, and forms of failure in product & components. Causes of failures will be explained with easy to understand discussion on stress application and distribution. Various case studies of failure and their elimination will be discussed. Participants are requested to bring along the failure cases (resolved or unresolved) for discussion.

The faculty members selected for each topic are experts in that field and bring along a rich experience of theory and application of this theory to systematically resolve failures. So this is most comprehensive course on Failure Analysis.

The course is designed for participants having no prior metallurgical training & has basic understanding of simple chemistry and physics.
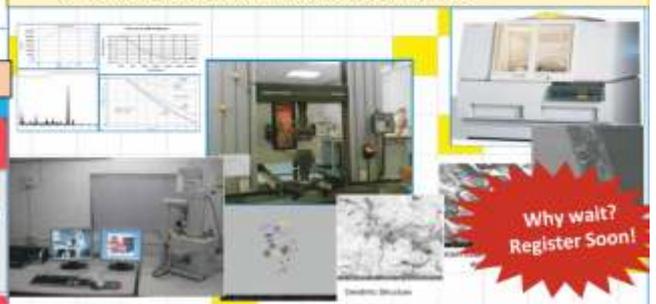
What's in it for you?

- General procedures, techniques & precautions for Failure Analysis.
- How stress systems relate to Failure analysis
- Ductile & Brittle materials fracture
- Identify Design related failure
- Analysis of factors causing failure
- Typical fatigue characteristics
- Basic fracture modes and their characteristics, factors affecting ductile-brittle relationships.
- Wear, shafts, Gears, Bearings etc. failure
- Grasp many inter-related factors involved in examining fractures.

Learn from Industry Experts!

Who is it for?

This training is useful for all industry professionals, who needs to have comprehensive understanding of Failure Analysis and working in area of:

- ✓ Design Dept., Product Design & Development, R&D, Service Engineers, Inspection, Testing, Quality Control, Assurance & Improvement, CAE and Metallurgy & techno commercial activity will benefit by attending this program.
- ✓ Manufacturing Shop Floor, Shift engineer / manager
- ✓ Sales, Business Development & Marketing
- ✓ Purchase, Vendor development & Supply chain
- ✓ Also working engineers / managers working as Supervisors, Engineers, Technicians, Graduate / Diploma Engineers and Executives, who need to work & analyse materials data & quality issues.

Pricing Category	Registration fees per person (incl. 18% Goods Service Tax)
Industry Professionals	Rs. 2,400 + Rs. 432.00 = Rs. 2,832.00
ASM Members	Rs. 2,160 + Rs. 388.80 = Rs. 2,548.80

Participants whose organization is in SEZ, kindly confirm for GST applicability before making the payment.

Contact Information:

Mr. N. A. Deshmukh / Mr. R. M. Patil
Phone: 02135-396695/90/91 or 02135-630 795/790/791
Email: training.pga@araiindia.com
Nadeshmukh.pga@araiindia.com   patil.pga@araiindia.com

Note : ARAI reserves the right to change the dates, schedule, contents, speakers, venue, etc. for the programme without any notice.

Save the dates
15th-18th December 2020
at ARAI-FID, Chakan, Pune

Why wait? Register Soon!

Technical Article :
Bringing Machine Learning to Nonmetallic Inclusions in Steelmaking

Unavoidable by-products of the steelmaking process, nonmetallic inclusions in steel have been a focus of the industry for over a century.
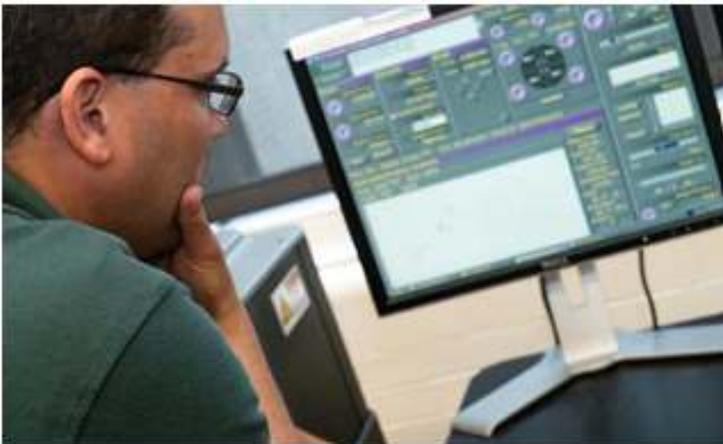

Fig. 1. Bryan Webler demonstrating use of SEM for inclusion analysis

November 6, 2019

Dr. Ellis Robinson

Researchers at Carnegie Mellon University's(CMU) Center for Iron and Steelmaking Research are bringing computer-vision and machine-learning techniques to the study of inclusions, hoping to increase the efficiency of inclusion analysis and gain new insights.

What are inclusions?

Inclusions – nonmetallic compounds and precipitates that form in steel and alloys during processing – are by-products of steelmaking, arising from different chemistries and processes. Endogenous inclusions occur within the liquid steel, precipitating out during cooling and solidification. They are typically more uniformly distributed than exogenous inclusions, which are entrapments of materials from refractory interfaces, slag or other materials in contact with the melt. Inclusions can vary widely in size and composition, giving rise to a corresponding wide range of effects and mandating sophisticated analytical equipment for characterization.

"One of the big focus points in steelmaking research has been on these non metallic inclusion particles. They're these little particles floating around in the steel that are always there,"said Bryan Webler, a professor of Materials Science & Engineering at CMU. "They affect the final performance of the steel, which is why we care about them so much."

Solid-phase inclusions can clump together to clog nozzles and other flow control systems that mediate the flow of liquid steel, posing a threat to process operations. Some inclusion chemistries reduce ductility, resistance to fatigue or overall toughness in steels. The absence of inclusions poses issues as well because "clean steels" can be harder to machine, decreasing the life span of cutting tools and requiring higher power consumption for machining. Understanding their nature is of critical importance in steel making operations, and "inclusion engineering" is both an ongoing area of academic research and an operational focus of some steel plants.
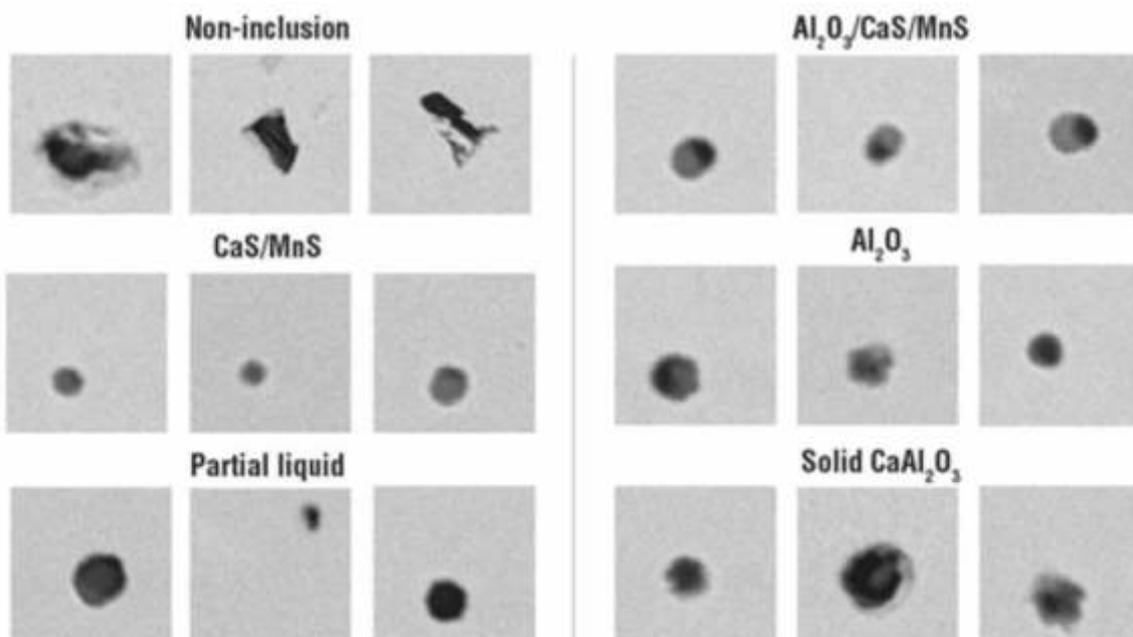

Fig. 2. SEM images of different, representative nonmetallic inclusion

Populations showing different chemistries analyzed in Weblerand Holm's computer-vision work

Inclusion Analysis: Current Practices

Inclusion analysis, even in clean-steel operations, is a routine part of process and quality control, typically using scanning electron microscopy (SEM) coupled with energy-dispersive spectroscopy (SEM/EDS). SEM uses backs cattered electrons (BSE), which provide quantitative number and size distributions as well as shape and location information. Spectra from EDS identify the chemical composition of inclusions. These batch methods often require a trained metallurgist to operate equipment and analyze the output data and are thus both labor- and time-intensive.

Consider calcium treatments that are used in clean-steel operations to reduce alumina formation to illustrate the feedback cycle between inclusion analysis and process control. Calcium is added to the melt in order to form calcium- aluminates, which convert alumina inclusions to a liquid phase. Liquid inclusions reduce the risk for clogging nozzles and other flow-control hardware that solid inclusions present. However, the addition of excess calcium can lead to solid calcium-sulfide inclusions.

Fast inclusion analysis would help identify any undesirable inclusions, informing whether the correct process-control decisions were made. Are there CaS inclusions? Turndown the calcium. Too much Al_2O_3? Add more calcium. The speed at which inclusion analysis can inform the right level of calcium addition, in this case, impacts the bottom line of a clean-steel operation both in material costs and process performance.
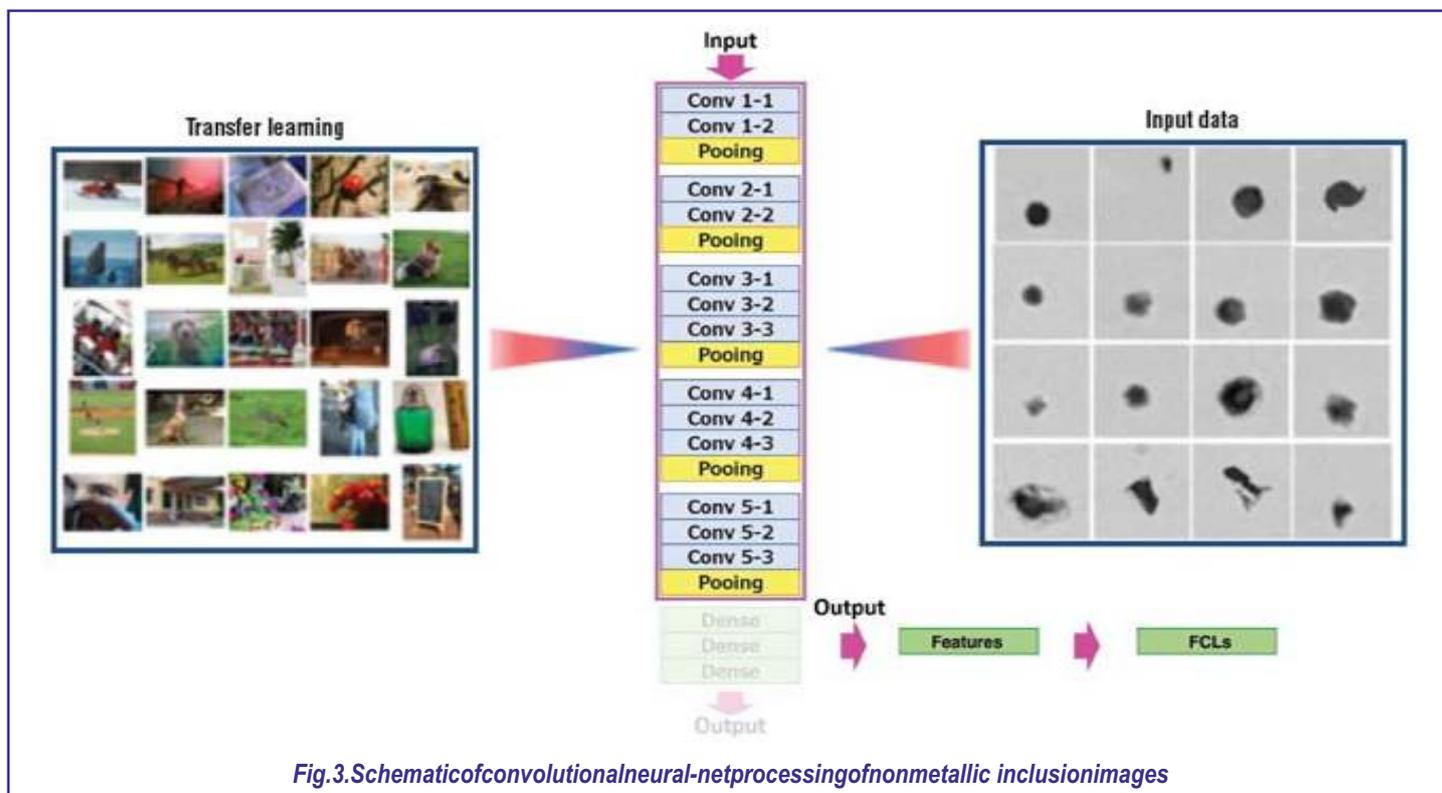

Fig.3.Schematicofconvolutionalneural-netprocessingofnonmetallic inclusionimages

Computer Vision and Machine-Learning Promise

Researchers at CMU are attempting to improve inclusion analysis through the use of computer vision (CV), which relies on advanced image processing and machine-learning (ML) classification. Materials science is rife with images. This fact makes it an ideal target for applying CV. Liz Holm, also a professor of Materials Science & Engineering at CMU, has previously used CV to classify carbon nano tubes, predict stress hotspots and characterize additive manufacturing (AM) powder feed stocks.

Having observed CV wending its way into adjacent fields, Webler realized that inclusion analysis may lend itself toward CV, eventually leading to a collaboration with Holm. With a legacy both in steelmaking research and machine learning, CMU is an unsurprising place for these two fields to converge.

Giving computers "vision" first requires numerical representation of an image, and Webler and Holm employ a popular CV approach to do so: convolutional neural networks (CNNs). CNNs create multiscale representations of images by passing them through various "filters." These filters are learned from the images themselves and then classified.

Classification, too, is learned from the images and does not require any pre- selected considerations, though it does require at raining data set to establish ground truths.
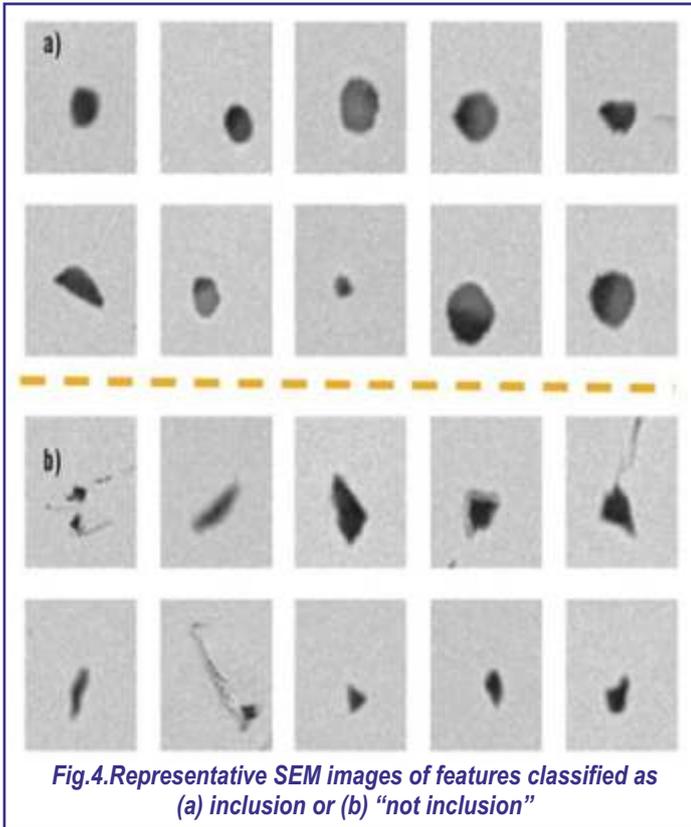
Fig.4.Representative SEM images of features classified as (a) inclusion or (b) "not inclusion"

In the case of character recognition of texts, a training dataset tells the computer what a "letter A" looks like across many printed sources. For steel inclusions, training data details whether or not a feature is an inclusion and what its chemical composition is, providing a baseline against which the computer makes sense of new data going forward.

How might CV improve the current state of inclusion analysis? First, there are always non-inclusions (e.g., dust, holes, scratches) in images of polished steel that can be detected as inclusions (false positives). Even when classified correctly, analyzing these non-inclusions is wasted time for the EDS system, and filtering them out can improve efficiency. Further, were CV techniques able to determine composition information from SEM images alone, EDS could be eliminated entirely, reducing both equipment and labor costs.

Even more appealing to Webler, though, is whether CV could elucidate information beyond the scope of current inclusion analysis. In other fields, CV has been able to produce insights invisible to human interpretation. One example of this is a CV system that could "see" traits such as age, gender and even cardiological risk factors in retinal images. No ophthalmologist had previously uncovered any of those traits by looking at human retina. By turning CV loose on inclusion images, the team hopes that unknown insights may be generated, learning through the intricate differences in the images what might be hidden within inclusion populations.

Applying CV to Inclusions Shows Initial Promise

While the research is still in the beginning phases, initial results from Webler's and Holm's research shows promise that CV can be useful for analyzing SEM inclusion images.
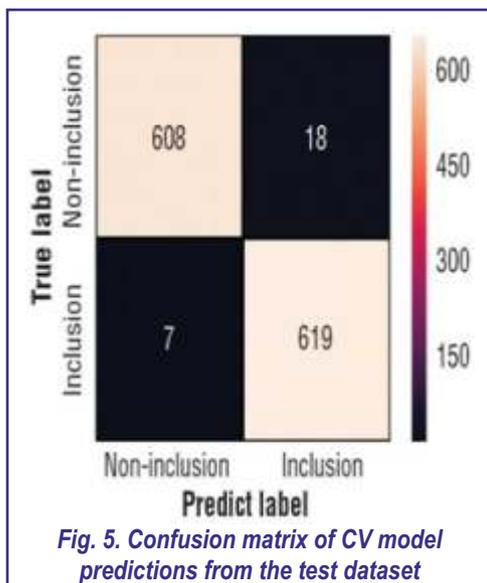

Fig. 5. Confusion matrix of CV model predictions from the test dataset

The team, presenting its initial findings at the 2019 Association for Iron & Steel Technology conference, was able to determine with 98% accuracy whether a feature on an SEM image was an inclusion or not. A previous study that applied CNNs to inclusion SEMs was only able to achieve 72% accuracy. Integrating CV into the current systems to filter out non-inclusions already shows promise for saving time in EDS scans. They were able to differentiate between inclusions and non-inclusions in 70 ms. Making that same determination for a feature using EDS takes over 14 times as long, a throughly 1,000 ms.

Interestingly, Holms aid it was not clear to herby looking at the SEM images why their CV tool classified features in one group or the other. Yet, that the CV analysis did so with a high degree of accuracy holds promise that more information is likely still lurking in the SEM images that CV may be able to tease out, though this was limited in the current dataset due to image-to- image variability. The team hopes that refining set up parameters of the SEM may address this issue. The next step, they say, is to "classify inclusions by chemical composition based only on BSE images."

Though he acknowledges that the work is still in its early phases, Webler is optimistic about his team's approach and how it could eventually have a positive impact on the industry.

"We hear lots and lots about big data, industry 4.0, all of these things, but it's still opaque in a lot of ways," Webler said. "But this is one example, at least, where I can see how machine learning could be useful when applied in this specific way."

Ellis Robinson, Ph.D. is the communications manager for the College of Engineering at Carnegie Mellon University located in Pittsburgh, Pa. He can be contacted by tel:412-268-1123,e-mail: esrobins@andrew.cmu.edu, and web: www.cmu.edu.

(Article Source & Courtesy: Industrial Heating Magazine - November 2019 Issue)

Cleanliness Analysis for Contamination Estimation
Particle Size Analysis System

- Fully compliant with the latest standards (ISO 16232)
- Automatic system with complete filter paper scanning , classifying non metallic , metallic and fiber particles and measuring their size.
- Options with stereo and metallurgical microscopes .
- Measurement of height of particle.
- Easy to use and quick to perform.
- Report Development According to user requirement.
- Access to measured particle data for further data processing

Model - CLEAN-EST

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

Metallic Particles — Count / Length(µm)

Non Metallic Particles — Count / Length(µm)

Fiber Particles — Count / Length(µm)

35 Yrs in Service
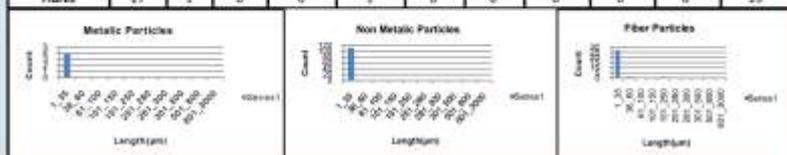
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Women Metallurgist Speaks

Kanyakumari has over 30 years of experience in working in the metal industry. She worked with Tata Steel in its R&D, Hot Strip Mill, Hot Rolling Technology Group as well as Automation Division. After working with Tata Steel for twelve years, she joined the Netherlands Institute for Metals Research to research on Philips project on metastability of stainless steels. Since 2006, she has been acting as a consulting engineer in her father's firm Data Metallurgical Company. After the unfortunate demise of her father Dr. Ranendra Dutta (VDI, Germany & FIMMM, London) in 2014, she manages Data Metallurgical Company as Proprietor and Chemmetals , her father's manufacturing unit, that produces fluxes, as partner along with her younger sister Dr. Mayurakshi Dutta who is Engineering Manager, Wireless Quality & Reliability Group at Intel, USA. Winner of several awards like Worshipful Company of Iron Mongers of the UK(1994,1995), Indo-Swedish Research Link (2010), Indo-German Workshop Award (2014), Kanyakumari has done her PhD from the University of Sheffield, MTech from IIT Kharagpur and BMetE from Jadavpur University. She is a violinist, amateur origami folder, water colour painter and she loves trekking and plays lawn tennis. She is a Rotarian of the Rotary Club of South Calcutta and served her Club as the President in 2019-20.

Dr. Kanyakumari Datta
Data Metallurgical
Company / Chemmetals

1. What attracted you to pursue metallurgical engineering?

I chose "Mechanics" as my additional subject in my high school because I wanted to study engineering. After passing the higher secondary examination in 1985 with Science (Major), I got through the admission test to study engineering as well as basic sciences. I was at cross roads to decide which field of engineering I must study. At that point, it was my late father Dr. Ranendra Dutta (VDI Germany & FIMMM London) who helped me choose metallurgy over other disciplines of engineering or science. He gave me two examples: we used to get The Metals & Materials magazine regularly from the Institute of Metals in London. He opened one of the pages of one issue and pointed out how under TEM one scientist could go very deep into the microstructure of metals. On the other hand, my father gave me the example of a lady engineer in the Otukumpu plant in Hariavalsa in Finland that he visited in the recent past. He told me that the lady was the head of the entire copper electrowinning plant and she showed him the entire plant. Basically my father was trying to tell me that if I studied Metallurgy, I would have the satisfaction of going down to an atomic level or even could manage a metal production unit. This was my inspiration to choose Metallurgy. The encouragement I received from my father that day has remained with me throughout all these years in my profession.

2. What were the 'Wow' moments and the challenges you had to face while doing your engineering and thereafter in career?

There were quite a few Wow moments while I was an undergraduate student of Metallurgical Engineering at Jadavpur University. First, in my very first year, I could do a project on electrostatic mineral separation and when I presented it in the Jagadish Bose National Science Talent Search (JB-NSTS) for Projects, I won the first prize, taking the award from none other than the then Governor of West Bengal, Dr. Nur Ul Hassan.

Second Wow moment, was when our teacher for Fluid Mechanics marked my answer sheet 46 out of 45. He told us that I solved one problem so uniquely that he had to give me one extra mark as grace. That was very uplifting as a student of Engineering. The third Wow moment came, when I was selected at the regional interview to take part in the Final interview for the Rhodes Scholarships for Oxford University. I was in the Third year and the Finals took place at IISc Bangalore in December 1988. We were six candidates from all over India. Finally, when I did my industrial training at the country's oldest Steel Plant,Tata Steel at Jamshedpur, and subsequently a training on Furnace Energetics at Dasturco in Calcutta, it inspired me to work on the shop floors. I wrote to Late Russi Modi, the then Chairman and Joint Managing Director of Tata Steel and I was interviewed by Dr. Jamshed J. Irani, the then Jt. Managing Director of Tata Steel. He gave me an open invitation to work in any place in the factory, and I chose to work in the Research & Development Division. With my GATE score, I topped the list at the IIT Kanpur interview for MTech. But I was more keen to work in a factory than continue with study, so I joined Tata Steel. These were a few of my Wow moments during my Undergraduate studies.

During the progression of my career, if at all any challenges were there, they were overcome with excellent mentoring at Tata Steel or in the Dutch Metal Research Institute: like taking plant trials during night shifts when women were not allowed by Indian Factory's law, or offering me the right job opportunities at the right moment in my career. Man or woman, everyone faces challenges: it is the eco system where they perform that help him or her overcome them.

3. You had worked on shop floor as well as a researcher and as an entrepreneur. Which of these roles you found to be most exciting and why?

I think working on shop floor was the most exciting. During my R&D stint at Tata Steel or while doing PhD at the University of Sheffield, I had to go up close to molten metals, hot metals and understand the process from inside out. It was indeed very interesting. But when I worked in the Hot Strip Mill of Tata Steel, reporting directly to the GM of all the Mills, there the excitement was the most as the coils went out of the Works with all the improvements done on them and that satisfied the customers. Very interesting assignments would be given to me including Plant-trials to improve existing grades or make new grades of steel. The amount of Team Work I had to do was unbelievable and the level of Safety Consciousness required on the Shop Floor was also a life changing experience. I had to undergo St Johns Ambulance Life Saving training to be able to work in the high-voltage, high-temperature workshops at the University of Sheffield, and needless to say I had to work out-of-hours in order to complete PhD within the three years study leave that Dr. Irani gave me. But being a Life Saver, gives an added advantage to work confidently on the Shop Floor.

Both my parents were very adventurous in raising their kids with open mind and helping us explore our inner talents. My mother Late Dr. Pratima Dutta was a world renowned Scientist and Deputy Director of the Indian Institute of Chemical Biology (IICB). We saw them hugely entrepreneurs, with my father founding his two little high-tech firms based on his intellectual abilities. So entrepreneurship also excited me but the shoop-floor experience stands out and it helps me to serve my clients and customers in the industry better, today.

4. As an Entrepreneur, request your advice to students and young engineers on how to be self-employable. How they can start this journey?

Creating a valuable product or service to an industry, existing or not-yet existing, is the basis of starting out on one's own. One should have enough confidence that the valuable product/service will be sustaining in the long run and that he/she should be adaptable enough to change course, should that valuable product or service no longer remains valuable. My father had years of experience as a Technical Director of Eyre's Smelting/Frys Metals and in the Board of Gillanders overseeing Mergers and Acquisitions. Those valuable experiences helped him in founding his own firms. I too have a solid work experience on the shop floors of Tata Steel and later on, doing innovative research in the Netherlands, into the brand development of Philips' Electric Shaver Philishave. These experiences are valuable in leading two small but high-tech firms founded by my father. So, if the students can get a job in the industry, I would advise them to join the industry. But with minimum capital or, even no-capital, one can start-up on his/her own if the business idea is good.

5. What are your hobbies and how you spend your leisure time.

I am trained in Eastern Classical Music on violin and can key in the tunes in piano as well. I love to listen to Western Classical Music and Mozart is my favourite composer. I love listening to music, not necessarily classical. Some Rock n Roll, some Jazz tunes are also very touching.I do water colour painting, collage, mosaic and love to fold origami, the Japanese art of paper folding for fun. I am also an avid movie watcher: I love to watch movies from across generations. Of out door Sports, I like trekking and have done many many treks in the Greater Himalayas with respected Madam Bachendri Pal at Tata Steel Adventure Foundation. I also did many hill walks in the Peak District National Park in the UK and in the Mount Hood (Cascades of the USA) area around the city of Portland where my younger sister and family were living few years ago. I play lawn tennis and played for the tennis Club Ludica in the Netherlands and at the South Club and Calcutta Club here. Swimming, meditation and yoga are my go-to stress-busters. As also cooking.

6. What is your advice to the budding generation specially women aspiring to pursue Metallurgy and Material Sciences as a career?

I would tell the budding generation that first, follow what your heart desires and do not select a subject based on either pressure from home or peers. Sit down with yourself, make an appointment with your own core beliefs and longings. If flying an aeroplane is what you dream, try at gliding first and see if you can get out of the fear of the height. If growing flowers is what inspired you to start a garden at your home, do not discount your ability to flourish as a horticulture expert in the future. If young students want to aspire for Metallurgy and Materials Science, I would tell them that please do not be intimidated by the high temperatures and high voltages associated with Metal production. These days, everything is sensor based and more and more safety norms are in place. My own experience is, industry is generally very equal-opportunities and gender-unbiased platform. But young generation also needs good mentoring in the industry.

7. Your message to the audience?

It has been a very exciting journey for me so far in the Metal industry. Today, I talk more about Safety as it is the most important aspect in any industry, specially Metal industry. Last year, I had an opportunity to work with the Bill & Melinda Gates Foundation and Tata Steel on a social project as the President of the Rotary Club of South Calcutta. It is so interesting that the Gates' Foundation's vision for the next twenty years would hinge on Gender-Equality. In our country, if we create more conducive eco systems for gender-equality from the level of basic primary education, we would automatically have more women participating in the industry as they grow up. With more Open-Houses to high School students, we can show them the possibilities they could opt for their future.

KNOW OUR MEMBERS

Dr. Ajeet Babu is an automotive engineer from Vellore Institute of Technology and completed his doctorate in deformation modelling of aluminium. He has with him around ten years of experience in forging technology and is developing right weighting automotive solutions. His technical interest is towards aluminium alloys, micro alloyed steels, magnesium alloys and their characterization. In the last four years he is also working on the Lithium ion battery materials with focus on destructive and non destructive battery characterization.

He is now manager in Technology Group department of ARAI, Pune wherein his primarily role is to work in the advanced materials and manufacturing technologies. This group focuses in developing technologies considering future mobility in India. He collaborates and works with various institutes, industries and carrying out funded research projects. He has published around nineteen publications and filed one Patent. He is an avid traveler and before COVID his family completed 3500 km journey of Pune-Madurai-Pune in Tata Nano.

Dr. Ajeet Babu

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UPCOMING NEWS LETTER

Theme: Innovation.

⮡ *Guest Editor : Student from Cummins College of Engineering for Women*

⮡ *Contents :*

- *Interview of Dr. Anuya Nisal, Principal Scientist, NCL Pune, 2020 Young Entrepreneur Award Winner.*
- *Special Article on "Innovation"*
- *Know our Member*

And much more ....

PROFESSIONAL CHAPTER PROGRAMS

Technical Program on Ring Central – ASM Webinar Platform at 7 p m

Sr.No.	Lecture on	Date
1.	Effective use of FEA in manufacturing sector by Satyajit Kulkarni and Kinsuk Koley, ARAI.	16.10.2020
2.	Recent Innovations and Trends in induction hardening by Fabian Marquis, SAET, Italy.	19.11.2020
3.	Clean steel and dirty steel by Dr.Deepak Moghe, ENIT, Nagpur.	17.12.2020
4.	Automotive HVAC challenges and opportunities for materials by Pravin Ghate, Tata Motors Ltd.	14.01.2021
	Students Chapter programs	
	Kaizen – introduction to industrial way of life by Mohini Limaye Modak, Corporate trainer, blogger (joint programme by Cummins College of Engineering for Women, Nagpur, Pune and Government Polytecnic Pune)	05.11.2020

Wait for Individual Invites & Ring Central Link.

From Chairman's Desk:

Hello All,

On the depressing background of Covid-19 Pandemic lockdown, we all were excited to hear that our Chapter got Two Outstanding Achievement Awards in the areas – Students Outreach & Communication. Our chapter has glorious history of Awards. Your wholehearted support and dedication by Executive Committee members is key to this success.

I realised, although we received many individual ASM Awards like 4 FASM, One President Medal, Presidential Citations, there is need for focussed work in this area of Awards. Accordingly, I requested Mr P S Subramanian, Past Chairman Pune Chapter to take this responsibility as Chairman Awards Committee. He has happily agreed for the same. Under his leadership, we are sure we will get many personal ASM Awards also. He has elaborated his plans in this issue.

ASM Pune has treasure of of Maharashtra wants to leverage of ASM experts with Engineering avenues will be Guest Lectures Membership development areas of your expertise and initiatives. Vaibhav Chiplunkar will response will help us to finalise the communication to Govt. of

Udayan Pathak, FASM

resourceful people. Government our strength for close interactions Diploma Students. The interaction and External Examiner. committee is collecting the data on willingness to work for such be in touch with you. Your list of Resource Persons for Maharashtra.

With many positives on our side, too. I am confident; with your One of the major concern is we are need to bring at least one new

we are facing couple of challenges support we will overcome them. losing our membership. All of us member while retaining one old

member. Our Training Programs organised jointly with ARAI are rich in contents. We were getting about 60 participants for each program. Off late we are getting poor response. We were forced to cancel a few training program due to poor response. In Covid – 19 Pandemic scenario, we are able to manage training programs on ASM Platform Ring Central effectively. I appeal all of us to get at least one participant for each training program. Let me remind you, Training Program surplus is one of the important chapter resource. You may be noticing many new volunteers, including students are active in Chapter taking various roles and responsibilities. However, with increasing activities we need more & more volunteers. I appeal all of you to come forward for Volunteering.

We are also focussing on increased visibility of our Pune Chapter. News Papers in Nagpur appreciated our First ASM Lecture Series for Polytechnic Students and Faculty Development program organised jointly with Cummins of Engineering. Maharashtra Times Pune published news about Chapter Awards. I am sure you will be proud to see more and more news items about our Chapter in Media.

Maintain Distance – Use Masks - Wash Hands – Stay Safe.

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

★★★★★ FIVE STAR CHAPTER

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