



Chapter News Letter



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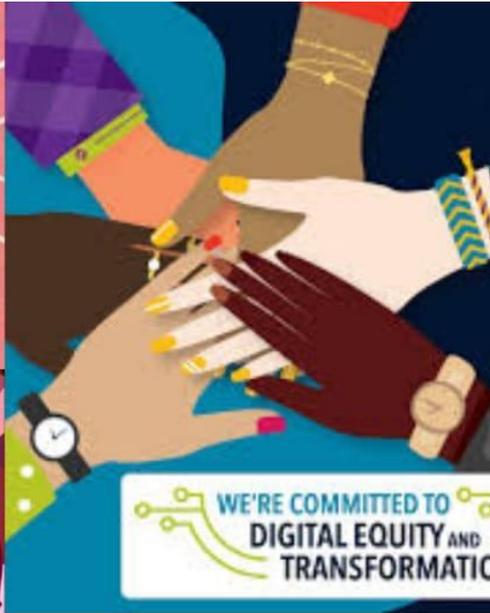
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Cummins College, Nagpur

Chapter Office Bearers

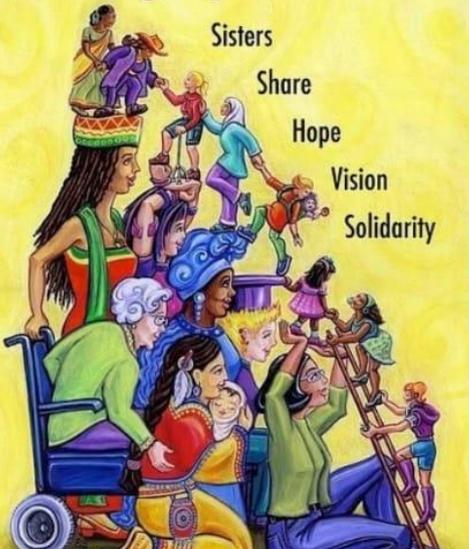
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Chairperson, News Letter Committee

Dr. Kruttika Apshankar-Kher



Rising Up



EDITORIAL

‘There is no limit to what we, as women, can accomplish.’

Dear Readers,

We are honored to welcome you to Issue No. 39 of our Chapter Newsletter.

In this issue we will recount about this year’s theme for International Women’s Day #EmbraceEquity in detail and discuss women’s role in the field of engineering. The technical articles provided by students will be a great source of knowledge for the readers.

We have tried to provide our readers with variety of information by columns of ‘Did you Know’ and ‘Fun Facts’ and to create awareness on the numerous aspects #EmbraceEquity represents.

It was an immense pleasure for us to be the newsletter editors for ASM International’s Women’s Day Edition. We as women students look forward to work for betterment of women in socio-economic sectors within the industry and society at a large.

Lastly, we would like to thank Dr. Kruttika Apshankar-Kher, Newsletter Committee Head, ASM International Pune Chapter, Udayan Pathak Sir, Chairman, ASM International Pune Chapter, Louis Vaz Sir, Secretary, ASM International Pune Chapter and Prof. Yogesh Dandekar, Faculty Advisor of Material Advantage Student Chapter, CCEW, Nagpur for this opportunity and for their everlasting support throughout the creation of this newsletter.



Swara Tupe



Tanvi Mahankar



Riya Khaparde



Mimanshi Tembhurne

3rd Year, Mechanical Department, Cummins College of Engineering for Women, Nagpur.

From FACULTY Advisor



Being a faculty advisor, it is moment of pride for me to see the third batch in a row of student members of Material Advantage Students Chapter of MKSSS's Cummins College of Engineering for Women, Nagpur as an editor of newsletter of ASM international Pune Chapter for Women's Day special edition. I hope that the contents are well managed and readers also find it insightful and well explained and enjoy the reading. It would have not been possible without the guidance of Dr. Kruttika Apshankar-Kher, Head of newsletter committee and Mr. Louis Vaz, our Secretary. Their help and guidance made it possible to complete this big task within the time and made the newsletter available to all of us. Finally big thanks to the editorial team for their huge efforts and sleepless nights to complete the task in a great way

Yogesh Dandekar,
Faculty Advisor,
Material Advantage Student Chapter, Nagpur



From Chairman's Desk:



UDAYAN PATHAK, FASM

“DigitALL: Innovation and technology for gender equality”, this is the theme, very aptly declared by United Nations for women day 2023! In this Industry 4.0 era, the usage of Innovation and Technology for gender equality is going to be the key to success and enhanced women participation in every aspect of life. This is precisely our goal in ASM Pune Chapter too!

Congratulations to the women team of our chapter for bringing out this Women’s Day Special issue of News Letter. This newsletter is all the more exclusive because it is brought out by a dedicated team of our women student members. Even the technical side of producing this issue is managed by them. ASM Pune Chapter is a pioneer to celebrate Women’s Day amongst ASM Chapter globally. Keeping in mind ‘Change is the constant thing’ our dynamic Women team decided to change the format of the women’s day program. Instead of only one day grand event, they organised Marathon lecture series by eminent women speakers. We have been trying hard to enhance women participation in Pune Chapter activities. We are able to create great enthusiasm among women materials engineers and very soon we look forward for converting this enthusiasm into Chapter membership.

It’s heartening to see more and more Indian chapters are organising Women’s Day. Indeed, it’s going to create healthy competition. I am sure very soon women participation in ASM activities in India will rise phenomenally. I appreciate encouragement by Mr. Pradeep Goyal, FASM, Vice-President, ASM International for encouraging us, specifically, our women team.

I once again congratulate Women Team of our ASM Pune Chapter for bringing out this outstanding issue of newsletter.



TECHNICAL TALK



**Maharshi Karve Stree Shikshan Samstha's
CUMMINS COLLEGE OF
ENGINEERING FOR WOMEN NAGPUR**

TECHNICAL TALK

Let's join a webinar that talks about business for budding entrepreneurs with speakers.

**Cummins College Alumna
Mech, 2016-2020 Batch
President of MEGA-2019-20
#MechanicalforGirl**

Debasmita Mohanty
Assistance HVAC Lead

JOIN ON

20 February, 2023
Start 11:00AM Onward
Meeting link :-
meet.google.com/qkq-khpq-ecz

For More Info
Visit:-www.cumminscollege.edu.in
E-mail:-office@cumminscollege.edu.in

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Ms. Debasmita Mohanty an alumna of CCOEW, Nagpur conducted a technical talk on heat, Ventilation and air conditioning systems, its scopes and technical. Through this interaction students of mechanical department were introduced to various scopes of HVAC systems present in the market for engineering students.

She Highlighted the need of HVAC Systems in market and also mentioned zero competition in this area. To this how HVAC Systems was a major need during pandemic she extended. We got to know about how HVAC systems are the milestones of buildings that provide thermal comfort for occupants accompanied with indoor air quality. Also, how the system is classified into central and local systems and their applications in particular zones, location and distribution in market.



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International Womens Day Celebrated by Pune Chapter:



Marathon Lecture Series and Felicitation



#IWD2023#DigitALL

9th March 23- Dr. Anuya Nisal
Topic- Nextgen tissue repair:
powered by Silk

10th March - Dr Sarika Verma
Topic - AMPRIs Bamboo Baithak
from Advanced Bamboo Composite
-Towards a sustainable solution

Agenda :

6.55 - 7.05 pm - Log in
7.05 -7.15 pm - Welcome & Introduction
7.15 - 7.45 pm - Tech Talk
7.45 - 7.55 pm - Q & A
7.55 - 8.00 pm - Conclude

Join Zoom Meeting

[https://us02web.zoom.us/j/86153680527?pwd=OEhYTzhSYT
NhQi9tcUVqdylUEpNZz09](https://us02web.zoom.us/j/86153680527?pwd=OEhYTzhSYT
NhQi9tcUVqdylUEpNZz09)

Meeting ID: 861 5368 0527

Passcode: 138598



New Individual member

Name : NITA SANTOSH GAYKAR

Designation: Office Management

Present Organisation : ASM International Pune Chapter

Function: Administration

Contact information (Mobile, E-mail) and other details if any: nitagaykar@gmail.com

Ph --+91-9552517568

- **Education details:** BE Metallurgy –COEP, PGD in Operations Management –MIT JNU
- **Work experience:** 25+ Years in Automotive Industry in Quality Assurance, QMS and Metallurgy
- **Area of expertise:** Supplier Quality, Heat treatment , Quality System Management , Special processes Audits , Training and skill development
- **Business Details If Any:**

INTERNATIONAL WOMEN'S DAY THEME

#Embraceequity

2k23 women's day theme suggests equal opportunities aren't enough and the tagline is embrace equity. So, let's get into it!

Every time when it comes to opportunities, resources and rewards we talk about equality. Equality is also a misconception among many of the people, people think that when women are asking for their rights, they want more opportunities and importance than men. But in reality, women just want opportunities as equal as men without any discrimination in any factors. But then the question arises just giving an equal opportunity enough? Is just a equality solution for such a diverse world? And the answer is no.

Supporters of equality consider and believe that the postulate is compatible enough and may justify inequalities which is correct at some extent. But there are also critics who do disagreement at what degree and what kind of inequalities are justified. Equal opportunities do not allow distinctness in people's social crisis and circumstances such as economic class family or culture.

Ex: amenities of high quality education is not enough to assure the differences between family's economic conditions.

So, above the extent of equality here's comes a term equity which means recognizing circumstances and understanding that we do not start from same level and make adjustments to imbalances. It includes being impartial among the people and to be fair and do justice by recognizing that each individual has different conditions and crisis irrespective of any community, gender, races, social classes and more.

Ex: Suppose there's a class of a students, in which a majority of students acknowledge auditory learning and remaining students prefers visual learning. Here teacher will teach the students by the technique which majority of students acknowledge. This is equality but taking the same situation in condition of equity teacher will teach the students from the techniques in which they are more congenial with.

#Embraceequity

Give a long hug to yourself and say I am enough.

It's a way in which equality can be achieved.

A world where differences are appraised and celebrated.

Believe in impartiality and justice.

A gender equal world. A world free of discrimination, bias, stereotypes and injustice.

Breaking stereotype:

Transgender women and LGBTQ women are WOMEN. Therefore, they should be given a same amount of respect, opportunities, rewards, justice without any discrimination. They should be treated as women. When it comes to equity in workplace, pay is important way to start making sure that women from other community and tradition should get paid equally for equal work.

As a women we have responsibilities of standing up for our sisters out there and making sure that we are being great associates for black women, women with disabilities, transgender, etc. and not only for the women but also for other genders , class and community.



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ROLE OF WOMEN



1. SRINIVASAN MALLIKA

Tractors and Agricultural Equipment Limited's CEO and Chairperson is Mallika Srinivasan (TAFE). She joined the family firm after obtaining an MBA and an MA in Econometrics.

She accepted the duty of increasing the company's turnover. Under her capable leadership, TAFE has established itself as a top producer of tractors and has diversified into new markets such as those for farm equipment, engineering plastics, hydraulic pumps, and other products



2. RAMILLE SHAH

Ramille Shah is expanding the disciplines of biomaterials and tissue engineering with her proficiency in creating and describing innovative biomaterial techniques for tissue and organ engineering. She serves as the company's co-founder and chief scientist. Shah graduated from Northwestern University with a bachelor's in materials science and engineering (MSE) and from MIT with a doctorate in MSE with a focus on biomaterials. At the University of Illinois at Chicago's Department of Bioengineering, where she presently holds the position of research associate professor, she directs the Shah Tissue Engineering and Additive Manufacturing Lab. Shah is

now recognised as a pioneer in the creation of 3D printing materials. She co-founded Dimension Inx in 2016 in order to ease the commercialization of the 3D-printable material technology.



3. LILLIAN GILBERTH

The American Society of Mechanical Engineers' first female member is Lillian Gilbreth. Often referred to as the "Mother of Modern Management," she is hailed as a pioneer in the fields of industrial engineering and psychology. To enhance the design of kitchen and home appliances, she collaborated with General Electric. "If the only way to enter a man's land was through the kitchen door, that's the way she'd enter," one of her sons wrote. She was supposedly a lousy cook, which is interesting. Consider how difficult it would be for Lillian to manage without the aid of modern time-saving devices if you believe being a working mother in the modern world is challenging. Gilbreth gained recognition for more than

simply her contributions to industrial management as a mother of twelve.



4. GWYNNE SHOTWELL

Northwestern University awarded Gwynne Shotwell a bachelor's degree in science, as well as master's degrees in mechanical engineering and applied mathematics. At the moment, she serves as the president and COO of SpaceX, a business that offers services for the construction and launch of spacecraft and rockets to clients in the public and private sectors. The first private firm to launch a liquid-fuel rocket into earth orbit (2008) was Elon Musk's SpaceX, which he created in 2002. Shotwell joined SpaceX as Vice President of Business Development at the beginning of the company's existence in 2002. She briefly worked for Chrysler before joining SpaceX, and the Aerospace Corporation employed

her from 1988 to 1998.



PRIYANKA CHAUDHARI
3RD YEAR, CCEW, NAGPUR

Advancement in Electrical Vehicle Technology

What would be the future prospects of EV technology?

Due to various favorable environments, such as no pollution, dependence on fossil fuel energy, efficiency, and less noise, electric vehicle (EV) adoption rates have been rising globally. Current EV research is focused on the productivity of increasing transportation, lowering costs, and developing efficient charging strategies. People's interest will rise with dropping costs, regardless of whether it is a hybrid, a modular crossover, or one of the many useful EVs. Also, the development of EVs is based on present and projected worldwide demand, which is linked to need for batteries and electricity. Also, the advancement of universal standards, EV policies, complete frameworks, connected peripherals, and user-friendly programming, as well as the technological development of showcases for EVs, are all necessary for the productive development of EVs. Electric vehicles can be connected to mobile to check battery level, to detect the location of vehicle in addition 'No Key' system would be added in place thumb prints would go in use. Also the driving range by increasing battery capacity that impacts the size, chemistry, and battery management system. Customers who are interested in using electric vehicles (EVs) need vehicles with quicker charge times, less frequent maintenance, and lower operating costs.

The most important factor in cars is safety. Manufacturers of electric vehicles (EVs) are required to adhere to design standards and increase driver and passenger safety. Electric battery usage is prone to explosions and cell breaking.

Advancements In Battery Technology

Power cells, which make up lithium-ion batteries, have the potential to short circuit if they have any flaws. In temperatures between 15 and 45 degrees Celsius, EV batteries are stable and have a decent operating range. The health of the battery is impacted by the temperature changes in the battery, which diminishes the vehicle's range. The installation of a cooling management system is necessary to protect the battery, electric parts, and vehicle.

Aluminum-ion Batteries Lithium-ion Batteries made of aluminum-ions EVs have traditionally used lithium-ion batteries as their power source. Li-ion battery drawbacks prompted research on other compounds to increase battery efficiency. Because of their gravimetric and volumetric capabilities, aluminum-ion batteries are effective energy storage devices. Lithium is less common than aluminum. Al-ion batteries have four times as much energy per dollar spent as Li-ion batteries. When graphitic materials are used, aluminum is used as a negative electrode in Al-ion batteries while graphite serves as a positive electrode in the future.

Foldable Batteries The invention by Jenax is the foldable battery. Around 200,000 folds of a lithium-ion battery can be made without performance being harmed. These batteries can be utilized to power up small components in EVs and support fast charging. It has a high energy density and maintains stability under bending fatigue. Foldable batteries can operate between -20 and 60 degrees Celsius, making them appropriate for all climatic conditions. The battery has a 30mAh capacity, has passed a safety test, and is waterproof

Lithium-Air Battery Another lithium battery that requires more investigation is the lithium-air battery (LiO₂B), which has a large capacity for energy production. The cell's cathode is porous carbon, its anode is lithium metal, and its electrolyte is non-aqueous. Theoretically, it is capable of producing 3505 Wh/kg of high specific density.

Lithium-Sulfur Battery – Sulfur is a cheap and widely available element that can be found in nature. Lithium-sulfur batteries are not harmful to the environment because it is environmentally benign. Due to the electrostatic field in which they store their energy, they have more than 500,000 life cycles. Compared to super capacitors, the life cycle of batteries is shorter. Batteries frequently experience issues at lower temperatures, however EDLCs have the potential to operate throughout a greater temperature range of -400 to 700 C. Moreover, internal resistance is less than that of batteries, which results in less heat loss and greater energy effectiveness. Using super capacitors, high-power delivery (10kW/kg) may be accomplished in a matter of seconds.

Solar Panel Solar panels may be used to power electric vehicles, according to researchers. With the use of renewable energy sources for battery manufacture, the amount of harmful waste produced by cars will reduce. This idea embodies perfect environmental friendliness. The solar panel modules are mounted on the Evs' roofs. The amount of solar energy the battery absorbs affects its output. The solar panels perform best when the temperature is 25°C. Electrical energy is created when solar panels collect the sun's beams. To the greatest extent possible, engineers are working to improve solar panel technology.

Conclusion :-

The main difficulties faced by electric vehicles are outlined in this article, including the lack of charging infrastructure, drive range, and battery temperature management. In the paper, potential fixes for these problems are also presented. It is suggested that improvements in battery technology would enhance the performance of electric vehicles. It also covers a few ideas that, while perhaps impractical at the moment, will help electric vehicles become more advanced in the future.

Source :- www.researchgate.net



TEJASWINI KINKHIKAR,
3RD YEAR, CCEW, NAGPUR

Did You Know?

1. Tool test and its significance:-

Tool testing is an important process that involves evaluating the performance, accuracy, durability, and safety of tools and machines. This is especially critical in industries such as manufacturing, construction, and automotive, where faulty tools can lead to product defects, worker injuries, and other hazards. There are different methods for testing tools, including destructive and non-destructive testing, and tool testing can help identify potential problems before they occur, saving time and money. Regular testing and maintenance can also extend the life of a tool and reduce the risk of accidents or injuries, and it's important to follow manufacturer recommendations for testing and maintenance to ensure proper functionality.

2. Remuneration And Growth Prospects:-

Salaries tend to increase with experience and promotions in many industries, while some industries like finance, technology, and healthcare offer high salaries and benefits. Education, skill level, bonuses, and stock options can also impact salaries. Growth prospects in a company can lead to more opportunities for employees to advance their careers, while demand for certain skills and professions can also impact salaries. Location, cost of living, and competition for talent are additional factors that can influence pay rates. However, employees also consider other factors like company culture, work-life balance, and job security when evaluating job opportunities.

3. Jet Engine

The jet engine was invented in 1930 by Frank Whittle, a British engineer who received a patent for his design in 1932. The first successful flight using a jet engine occurred in 1939 by German engineer Hans von Ohain. Jet engines work by compressing air, mixing it with fuel, burning it, and ejecting the hot gases out the back of the engine to produce thrust. The amount of thrust produced is proportional to the mass of air flowing through the engine and the speed at which it is ejected. Jet engines are used in aircraft, missiles, rockets, and some cars. The Lockheed SR-71 Blackbird is the fastest jet engine-powered aircraft in the world, with a top speed of over 2,100 mph. Jet engines require frequent maintenance and monitoring to operate safely and efficiently. Jet engines have greatly improved the speed and efficiency of air travel, allowing people to travel long distances quickly.

4. Milestone in India's Export:-

India's exports have achieved several milestones in recent years across various sectors. In 2021-22, India's total merchandise exports crossed the US\$300 billion mark, with a year-on-year growth rate of 41.2%, the highest ever in a single year. India is the largest exporter of generic drugs, accounting for 20% of global exports in terms of volume. Other notable sectors where India has made significant strides include software services, agricultural and allied exports, textiles and garments, petroleum products, and engineering goods exports. The top five export destinations for India in 2020-21 were the USA, China, UAE, Singapore, and the UK. In 2021, India's pharmaceutical exports crossed the \$24 billion mark, marking a growth of 18% over the previous year

5. Lithium

Millions of tones of lithium has been found in mountains of Salat- Haimana area of Reasi districh in the Jammu and Kashmir . As we know Bolivia has the world largest known lithium reserve. this discovery of lithium can boost the green energy creation

6. Technology

The modern average electronic devices like smartphones, laptops, and computers use more then 35 different types of minerals to have proper functions. Such as , silver , copper,gold ,magnanese ,tellurium, lithium ,coblat , tungsten,zin are the few of the elements.



SHRUTI SURYAWANSHI
3RD YEAR, CCEW, NAGPUR



RINA KSHIRSAGAR
3RD YEAR, CCEW, NAGPUR

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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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