



October, 2022

MAE-ME Technical Magazine

Yearly Technical Magazine of Mechanical and Automation Engineering Department & Mechanical Engineering Department



Department of Mechanical and Automation Engineering
Department of Mechanical Engineering
Maharaja Agrasen Institute of Technology, Rohini, Delhi - 110086

Vision Statement of the Institute

To nurture young minds in a learning environment of high academic value and imbibe spiritual and ethical values with technological and management competence.

Mission Statements of the Institute

The Institute shall endeavour to incorporate the following basic missions in the teaching methodology:

- **Engineering Hardware – Software Symbiosis:**
Practical exercises in all Engineering and Management disciplines shall be carried out by Hardware equipment as well as the related software enabling deeper understanding of basic concepts and encouraging inquisitive nature.
- **Lifelong Learning:**
The Institute strives to match technological advancements and encourage students to keep updating their knowledge for enhancing their skills and inculcating their habit of continuous learning.
- **Liberalization and Globalization:**
The Institute endeavors to enhance technical and management skills of students so that they are intellectually capable and competent professionals with Industrial Aptitude to face the challenges of globalization.
- **Diversification:**
The Engineering, Technology and Management disciplines have diverse fields of studies with different attributes. The aim is to create a synergy of the above attributes by encouraging analytical thinking.
- **Digitization of Learning Processes:**
The Institute provides seamless opportunities for innovative learning in all Engineering and Management disciplines through digitization of learning processes using analysis, synthesis, simulation, graphics, tutorials and related tools to create a platform for multi-disciplinary approach.
- **Entrepreneurship:**
The Institute strives to develop potential Engineers and Managers by enhancing their skills and research capabilities so that they become successful entrepreneurs and responsible citizens.

Vision Statements of the MAE Department

Enhancing the competence level of students and ensure that MAE department is widely recognised for the quality of its undergraduate educational program, the effectiveness of its research and broad access to the innovative use of information technology and automation while ensuring that basic mechanical engineering subjects are not ignored.

Mission Statements of the MAE Department

The mission of the department is to develop a mechanical engineer who is equipped with basic knowledge of manufacturing techniques, analytical skills along with the ability to utilize the concepts of simulation and automation for continuous learning and improvisation in the field of manufacturing, design and research.

Vision Statements of the ME Department

To be a global leader in the area of Mechanical Engineering and excel through enabling the environment of academics & research and inculcating ethical values for betterment of industry and society.

Mission Statements of the ME Department

To prepare responsible Mechanical Engineers for global challenges by imparting

- I. Quality education.
- II. Research and innovation through cutting edge technologies.
- III. Socially relevant technologies with ethical values.



Message from Founder & Chief Advisor's Desk

It is indeed a matter of great pride that the Department of Mechanical and Automation Engineering and Mechanical Engineering, MAIT is publishing its fourth annual technical magazine in October, 2022.

The technical magazine, I understand, showcases the research activities and industry – academia interaction activities which the MAE & ME Departments has adopted during last year.

I acknowledge all faculty and staff of the Department of MAE & ME for their sincere efforts in the release of this magazine. I also congratulate the Editorial Team in getting the magazine printed.

I wish them all success.

Dr. Nand Kishore Garg
Founder & Chief Advisor, MATES



Message from Chairman's Desk

I am gratified to know that the Department of Mechanical and Automation Engineering and Mechanical Engineering, MAIT has taken an initiative to publish the Technical Magazine in the month of October 2022.

This is productive as well as a great platform for the students, researchers, faculty members and industry experts to disseminate achievements in research and developments in computer science and technology.

I acknowledge the efforts of Dr. V. N. Mathur, HOD (MAE) and Dr. Vaibhav Jain, HOD (ME) the faculty members and the students of MAE & ME department for their efforts in publishing the Technical Magazine. I also applaud the coordination and efforts by the Editorial team to bring up the issue.

I wish them all great success.

Sh. Vineet Kumar Lohia
Chairman, MATES



Message from Director's Desk

I am extremely happy to know that the Department of Mechanical and Automation Engineering & Mechanical Engineering, MAIT is publishing its annual technical magazine in October 2022.

This annual technical magazine will showcase the interaction of the Mechanical and Automation Engineering Department and Mechanical Department with Industry Professionals, Academicians and Research Scientists. It will also show the research by faculties of Mechanical and Automation Engineering Department & Mechanical Engineering.

I applaud the HODs, editorials and coordinators of the team to publish this issue. I wish them success for future publications.

Prof. (Dr.) Neelam Sharma
Director, Maharaja Agrasen Institute of Technology



Message from Dean (Academics)'s Desk

It is a moment of pride for us to print the 4th edition of the annual technical magazine of the Mechanical and Automation Engineering Department & Mechanical Engineering. Creativity and innovation are the catalyst of advancement. For the time immemorial, education emancipates. No study is complete when the scope of further research is available. Research is the fuel for advancement and development.

This magazine will share and exchange the scientific knowledge of our teachers who are not only academicians but also researchers with the students.

I congratulate and compliment the entire team, faculty members, staff and fellow students for initiating this magazine to exchange their views and knowledge on recent research and developments.

Prof. (Dr.) S.S. Deswal
Dean (Academics)

It is a matter of great pride and privilege for us to be associated with the Department of Mechanical and Automation Engineering and department of mechanical engineering for this 22nd year. The year 2021-22 has been a year of accomplishments for both the Departments. Three faculty members of the Departments received their Ph.D. degrees from DTU, YMCA, Faridabad, NIT Kurukshetra. The Departments celebrated 'Earth Day' in association with Institute innovation cell (IIC) and ASHRAE Student Branch MAIT. A huge number of faculty members and students participated in this online event.

Many One Day events were organized by both the Departments. A number of lectures have been also arranged by departmental faculties and the ASHRAE society of MAIT.

It is a difficult task to include information about all the activities of the Department in an annual magazine like this. I congratulate Dr. Alok Kumar & Dr.

Garima Sharma who has worked tirelessly to bring out this edition of the magazine.

Sincerely,
Dr. V.N. Mathur
(HOD, MAE)
&
Dr. Vaibhav Jain
(HOD, ME)

MAE & ME Faculty

1. V.N. MATHUR
2. ANIL GUPTA
3. GARIMA SHARMA
4. PIU JAIN
5. NAVEEN SOLANKI
6. DESHDEEP GAMBHIR
7. RAKESH CHANDER SAINI
8. RAMAKANT RANA
9. SURABHI LATA
10. VAIBHAV JAIN
11. HARSH JOSHI
12. ANIL KUMAR DAHIYA
13. ASHWNI
14. SURBHI UPADHYAY
15. VIKAS SHARMA
16. ATUL KUMAR KAUSHIK
17. RACHNA CHAWLA
18. SIDHARTH
19. VIPIN KUMAR SHARMA
20. ALOK KUMAR
21. VIKAS ACHARYA
22. ANUPAM THAKUR
23. SACHIN GUPTA
24. AMIT GAUTAM
25. NARINDER KAUSHIK
26. SUMIT JOSHI
27. MADHUKAR CHHIMWAL
28. SATISH KUMAR

Editor:

Dr. Alok kumar

Dr. Garima Sharma

Webinar on “Experimental investigations on mechanical behaviour of friction stir welded aluminum based composites”.

Department of Mechanical & Automation Engineering and Department of Mechanical Engineering, Maharaja Agrasen Institute of Technology organized an online webinar on the topic 'Experimental investigations on mechanical behaviour of friction stir welded aluminum based composites' on 8th January 2022.



An Online-Webinar

On

TRIBOLOGICAL BEHAVIOURS OF MAGNESIUM ALLOY SECTOR SHAPE PAD WITH SURFACE MODIFICATION

(08th January 2022)

Organized by
Department of Mechanical & Automation Engineering
&
Department of Mechanical Engineering

MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY
Agrasen Chowk, Sector-22, Rohini, New Delhi-110086

SYNOPSIS

In the ongoing demand for light-weight materials, magnesium alloys are equally comparable to aluminium alloys because of attributes such as high specific strength, low density, high damping capacity and better machinability. Magnesium-Aluminium-Silicon (Mg-Al-Si) is one of the Mg alloy series which is well recognised for elevated temperature applications as they contain the thermally stable Mg₂Si intermetallic compound. However, the coarse and brittle nature of Mg₂Si deteriorates the mechanical and tribological properties; therefore researchers are working on its modification and refinement to enhance the widespread use of heat resistant Mg-Al-Si alloys. The rapid emerging surface modification phenomena like Friction Stir Processing (FSP) have proved its potential in achieving significant grain refinement and morphological modification in the materials thus enhancing their mechanical and wear behaviour. In the present research, Magnesium-Aluminium-Silicon (Mg-Al-Si) based AS21A magnesium alloy was examined for microstructural, mechanical and tribological characterization in respect of the cast and Friction Stir Processed (FSPed) conditions. The Taguchi – Grey Relational Analysis (GRA) – Principal Component Analysis (PCA) hybrid methodology was applied to achieve the optimized values of FSP parameters. Microstructural features exhibit the fragmentation of coarse Mg₂Si to fine particles thus creating their homogeneous dispersion and eliminate the casting defects present in the parent material. The morphological structure modification achieved through FSP resulted in the significant enhancement of mechanical properties like strength, ductility etc. Further, fractography images proved the brittle failure in cast AS21A sample while ductile failure in FSPed AS21A sample. In tribological study, FSPed AS21A samples exhibited noteworthy improvement in the wear characteristics at all assessment conditions. It was established that the morphology of Mg₂Si precipitates had an active contribution in the wear behaviour of cast and FSPed AS21A samples. The notable mechanisms found responsible for the wear of samples were adhesion, abrasion, oxidation, delamination and plastic deformation. An attempt has also been made to replace the Babbitt coating with the investigated alloy in thrust bearing applications in the form of sector shape pad.

SPEAKER



Dr. SUMIT JOSHI
Assistant Professor,
Deptt of MAE & ME,
MAIT, New Delhi

Dr. Sumit Joshi is presently working as an Assistant Professor in the Department of Mechanical and Automation Engineering at Maharaja Agrasen Institute of Technology, Delhi. He holds a PhD degree from Delhi Technological University (DTU), New Delhi. As recognition of his academic achievements, he has received a Research Excellence award from DTU for his research activities. Mr. Sumit has been involved in research on the materials characterization, surface engineering and tribology of Machine Elements. He has authored many research papers in International Journals and Conferences of repute.

Saturday 08th January 2022
4:00 P.M. (IST) onwards

Webinar Platform-MS Teams
Meeting Link: <https://bit.ly/3HJxqwi>

Photo: Promotional poster of the webinar

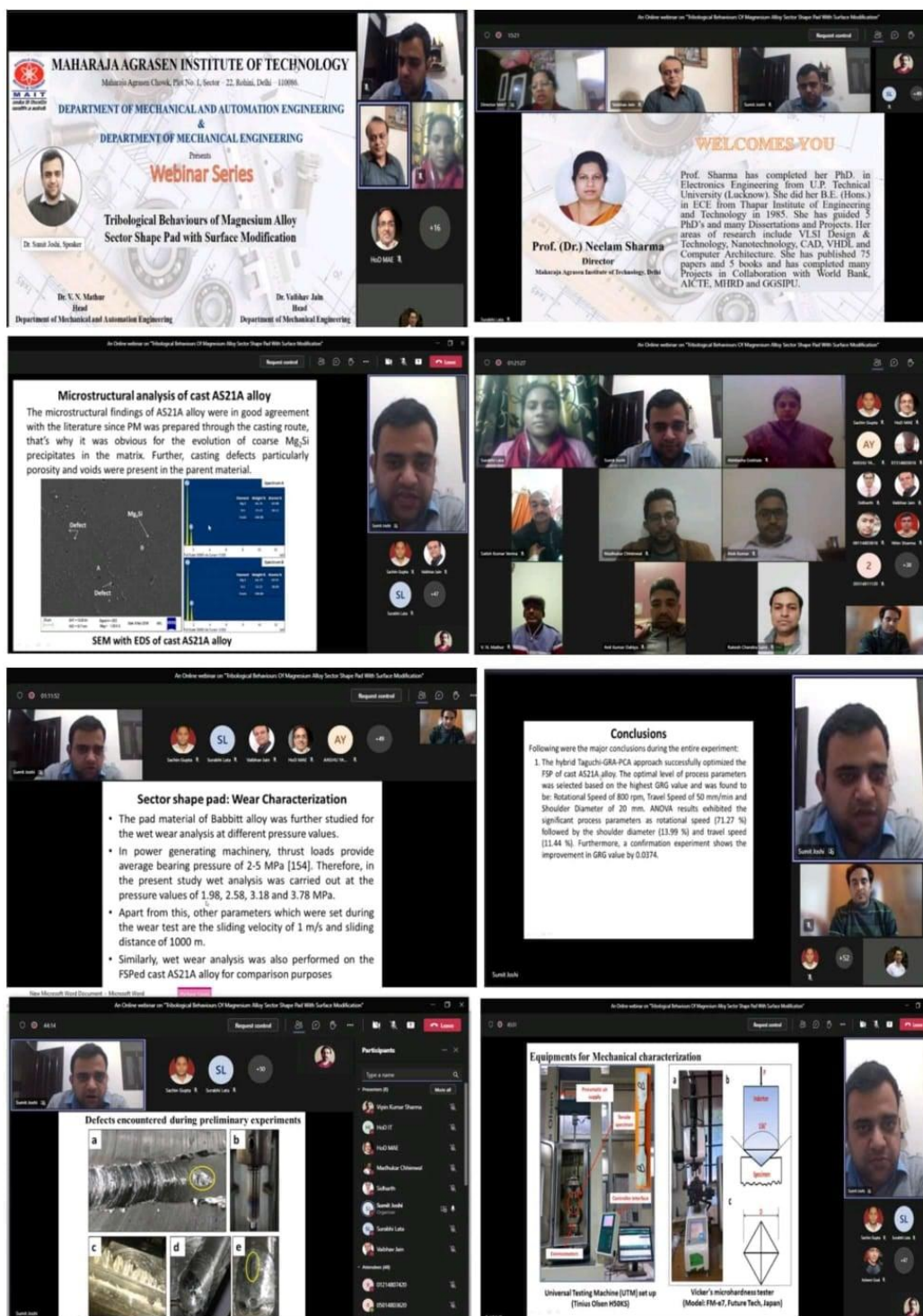


Photo: Snippet of the webinar

Webinar on the topic “Augmentation of Heat Transfer in Internal Flow”.

Department of Mechanical & Automation Engineering and Department of Mechanical Engineering, Maharaja Agrasen Institute of Technology organized an online webinar on the topic ‘Augmentation of Heat Transfer in Internal Flow’ on 22nd January 2022.



1 An Online-Webinar

On

AUGMENTATION OF HEAT TRANSFER IN INTERNAL FLOW

(22nd January 2022)

Organized by
Department of Mechanical & Automation Engineering
 &
Department of Mechanical Engineering
MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY
 Agrasen Chowk, Sector-22, Rohini, New Delhi-110086

SYNOPSIS

Heat exchangers are indispensable for achieving heat dissipation from the generation source point in applications such as heating, ventilation and air conditioning (HVAC), refrigeration devices and automobile radiators. Efforts for improving the transfer of heat between two fluids flowing over and into the heat exchanger have been a topic of research for many years. Fin-tube type of heat exchanger is one of the most commonly used types of heat exchangers and there are numerous studies that have been carried out to increase the air-side heat transfer, all of which involve either the use of active methods or passive methods for heat transfer augmentation. Since making use of passive methods does not require any extra power, they are commonly used and preferred. Among all such methods, vortex generators (VGs) are of prime interest. From the available types of VGs, the majority of the studies have been performed considering winglets as VGs because these types of VGs can be easily attached or punched out of fins. Winglets can effectively generate LV which in turn increases convective heat transfer coefficient and at the same time increases pressure drop. The present study is focused on the development of a new compact heat exchanger by enhancing the local convective heat transfer coefficient. In the present work, we have considered a fin-and-tube heat exchanger for investigations. The vortex generators considered are in the form of a rectangular winglet pair having a circular hole at their center. Experiments were performed on a fin-and-tube heat exchanger installed in a wind tunnel test rig. We have considered two configurations of the winglet during the experimentation i.e. Common Flow Down orientation at the downstream location and Common Flow Up orientation at an upstream location. Numerical simulations have also been performed to investigate the heat transfer and flow resistance characteristics of rectangular winglet type vortex generators (VGs) with a punched hole of circular shape at their center. Investigations have been performed considering Reynolds number in the range of 1400 to 9000, keeping the angle of attack at 45°. The Shear Stress Transport (SST) $k-\omega$ turbulence model has been used for performing numerical simulations. Rectangular winglet pair have been placed in Common Flow Down (CFD) and Common Flow Up (CFU) orientation at downstream as well as upstream location. After comparing the results of experimentation with the numerical simulations results, we found that the error was well within the acceptable limit.

SPEAKER



Dr. Sachin Gupta
 Assistant Professor,
 Deptt of MAE & ME,
 MAIT, New Delhi

Dr. Sachin Gupta is presently working as an Assistant Professor in the Department of Mechanical and Automation Engineering at Maharaja Agrasen Institute of Technology, Delhi. He holds a Ph.D. degree from J. C. Bose University of Science & Technology, YMCA, Faridabad. As recognition of his academic achievements, he has received a Research Excellence award from YMCA, Faridabad for his research activities. His research interests lie in the experimental and numerical aspects of improving the efficacy of conjugate heat transfer through novel enhancements in heat exchangers. He has authored many research papers in International Journals and Conferences of repute.

Saturday 22nd January 2022
4:00 P.M. (IST) onwards

Webinar Platform-MS Teams
Meeting Link:
<https://teams.microsoft.com/l/meetup-join/19%3a8462c91938614d30938a30>

Photo: Promotional poster of the webinar

Webinar on the topic “Experimental investigations on mechanical behaviour of friction stir welded aluminum based composites”.

Department of Mechanical & Automation Engineering and Department of Mechanical Engineering, Maharaja Agrasen Institute of Technology organized an online webinar on the topic 'Experimental investigations on mechanical behaviour of friction stir welded aluminum based composites' on 29th January 2022.



An Online-Webinar

On

EXPERIMENTAL INVESTIGATIONS ON MECHANICAL BEHAVIOUR OF FRICTION STIR WELDED ALUMINUM BASED COMPOSITES

(29th January 2022)

Organized by
Department of Mechanical & Automation Engineering
&
Department of Mechanical Engineering

MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY
Agrasen Chowk, Sector-22, Rohini, New Delhi-110086

SYNOPSIS

The present-day industry has understood the significance of weight to strength ratio. The existing monolithic alloys do not congregate the requirement of these industries to improve the product quality and ability. In the current past, MMCs were created with aluminum as the matrix material and reinforcement particles like SiC, TiC, TiB₂, Al₂O₃, TiO₂, Si₃N₄, ZrB₂, SiO₂, and WC etc., utilizing liquid metallurgy processing technique, in-situ, ex-situ, and powder metallurgy methods. Studies have revealed that liquid metallurgy stir casting processing technique can fabricate MMCs with great quality and high amount, but a negligible amount of research work on FSW of AMC was detailed in the literature. AA6063 based metal matrix composites find applications in intricate extrusions, railway parts, architectural components, irrigation pipes, and automobile components. In the present examination, production of AA6063/SiC AMCs (aluminum matrix composites) containing 0 to 10.5 wt. % of SiC as reinforcement was done. The fabricated composites were welded utilizing FSW process employing a square pin profiled tool to produce quality welded joints. The mechanical and metallurgical properties, viz., ultimate tensile strength, microhardness, microstructural properties, and wear behavior were examined for the manufactured AMCs. The mechanical and metallurgical characterization of FS welded AMCs was carried out to analyze the joint properties. AA6063/SiC AMC was successfully manufactured employing the liquid metallurgy stir casting process. AMC castings were produced with various wt. % of SiC (0, 3.5, 7 and 10.5 wt. %). The maximum amount was restricted to 10.5 wt. % due to excessive slag formation. The manufactured AMC was characterized using an optical microscope (OM), scanning electron microscope (SEM), x-ray diffraction (XRD) and EDAX analysis. The XRD analysis clearly revealed the presence of SiC particulates and the absence of intermediate phases. The strengthened SiC particles were uniformly dispersed, sphere shaped and had good interfacial bonding with the al-matrix phase. The mechanical properties viz., tensile strength, microhardness and dry slippery wear conduct of AA6063/SiC AMCs increased with increased amount of SiC reinforcement agents. The results demonstrated a 28.65% increase in tensile strength whereas 52.25% decrease in ductility of the AMCs when compared with as-cast AA6063 matrix alloy.

SPEAKER



Dr. NARINDER KAUSHIK

Assistant Professor,
Deptt of MAE & ME,
MAIT, New Delhi

Dr. Narinder Kaushik is presently working as an Assistant Professor in the Department of Mechanical and Automation Engineering at Maharaja Agrasen Institute of Technology, Delhi. He holds a PhD degree from NIT Kurukshetra. Mr. Narinder kaushik has been involved in research on the composite materials characterization, wear analysis and FSW of AMC's. He has authored many research papers in International Journals and Conferences of repute.

Saturday 29th January 2022
10:00 A.M. (IST) onwards

Webinar Platform-MS Teams
Meeting Link:
<https://teams.microsoft.com/l/meetup-join/19%3a8462c91938614d30938a303031228277%40thread.facy2/1643337001734?context=%7b%22id%22%3a%221b4eaaad-b887-48cf-8407-e99420eda2fb%22%2c%22old%22%3a%2253252d87-5646-4853-8fa4-e59bd20ada70%22%7d>

Photo: Promotional poster of the webinar

GUEST SPEAKER



Dr. Narinder Kaushik
Department of Mechanical and Automation Engineering

Dr. Narinder Kaushik is presently working as an Assistant Professor in the Department of Mechanical and Automation Engineering at Maharaja Agrasen Institute of Technology, Delhi. He has been awarded the Ph.D. degree from National Institute of Technology, Kurukshetra (NITKKR). Prior to working in MAIT, he had worked at Maiti College of Engineering, Rohtak for 9 years summing his total teaching experience to 14 years. His research interests include experimental and numerical aspects of fabrication of composite materials, wear analysis and tribological behavior of composite materials, and some novel approach in friction stir welding (FSW) etc. He has authored many research papers in international Journals and Conferences of repute. He is also in the reviewer board of some reputed international journals.


MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY
AGRASEN CHOWK, SECTOR-22, ROHTAK, NEW DELHI-110086

DEPARTMENT OF MECHANICAL & AUTOMATION ENGINEERING & DEPARTMENT OF MECHANICAL ENGINEERING


PRESENTS
WEBINAR SERIES
DR. NARINDER KAUSHIK, SPEAKER

EXPERIMENTAL INVESTIGATIONS ON MECHANICAL BEHAVIOUR OF FRICTION STIR WELDED ALUMINUM BASED COMPOSITES

PRODUCTION OF AA6063/SiC AMC
(0%, 3.5%, 7%, 10.5% wt. % of SiC) using stir casting



PIN-ON-DISC APPARATUS
DUCOM (TR-20LE)




PIN-ON-DISC DRY SLIDING WEAR ANALYSIS

- The manufactured composite ought to have a decent wear protection performance, when it is suited in any application. Consequently, the impact of applied load, sliding distance and wt. % of SiC particles on the output response characteristics such as wear rate, specific wear rate and frictional force are researched.

$$\text{Volumetric loss} = \text{Height loss} \times \text{cross sectional area of pin}$$

$$\text{Wear rate (WR)} = \frac{\text{Volumetric loss } \text{mm}^3}{\text{Sliding distance } \text{m}}$$

DEVELOPMENT OF FSW TOOLS



- The trials welds were carried out using tools of different profiles viz., square, cylindrical threaded and conical

SPECIALLY DESIGNED FIXTURE TO PERFORM FSW



Photo: Snippet of the webinar

1- Day Cricket Match

ASHRAE Student Branch MAIT participated in Inter College 3rd edition Dr Prem Jain Memorial Cricket Tournament organized by AIC on 5 March 2022.



Photo: Glimpses of the Cricket Match

Expert talk on ‘Designing low Carbon Water Efficient Building’ by Mr. Ashish Rakheja.

The Department of MAE/ ME in association with Institute innovation cell (IIC) and ASHRAE Student Branch MAIT celebrated 'Earth Day'. Mr Ashish Rakheja, Managing Director, Aeon Consultants and Director at large, ASHRAE presented an informative and mind provoking talk on the topic "Zero Water Building" during the occasion .

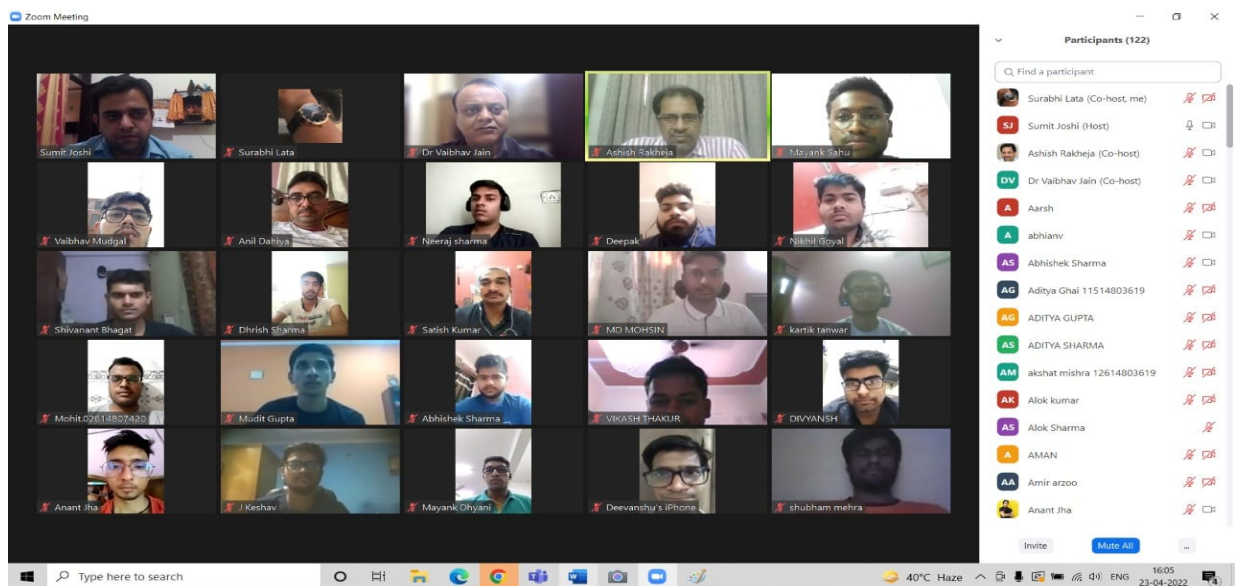
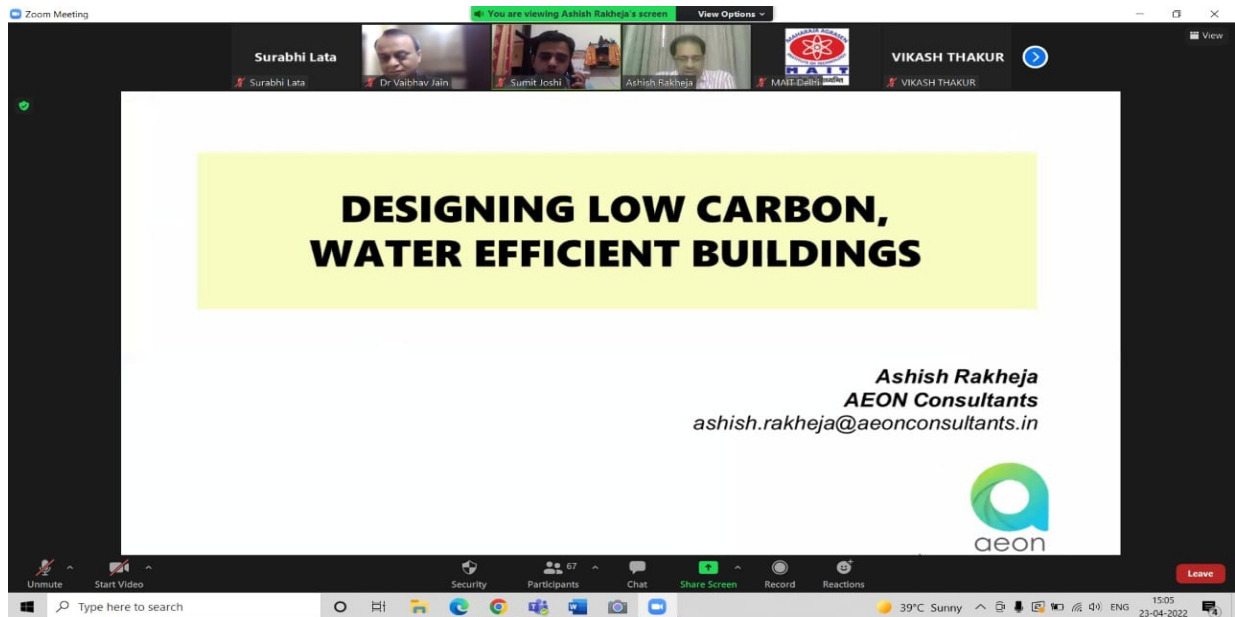


Photo: Snippet of the webinar

Expert talk on 'Success by Design' by Miss Vandana Kapuria.



MAHARAJA AGRASEN INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MAE & ME

in association with

ASHRAE STUDENT BRANCH & INSTITUTION INNOVATION COUNCIL (IIC) MAIT

is organizing the expert talk on

SUCCESS BY DESIGN

Faculty Coordinator:
Dr. SUMIT JOSHI
Member, IIC MAIT

Keynote Speaker
Ms VANDANA KAPURIA
Director, Enmax Smart System
Co-Chair (Student Activity), ASHRAE India Chapter

DATE: NOV 18th, 2022 (FRIDAY)
TIME: 02:30 PM-03:30 PM
VENUE: MAIT Campus

DR. NAND KISHORE GARG FOUNDER & CHIEF ADVISOR, MATES	SH. VINEET KUMAR GUPTA CHAIRMAN, MATES	PROF. NEELAM SHARMA DIRECTOR, MAIT	PROF. S.S. DESWAL DEAN ACADEMICS, MAIT
PROF. V.N. MATHUR HOD, MAE	DR. VAIBHAV JAIN HOD, ME	PROF. NAMITA GUPTA PRESIDENT, IIC MAIT	MR. ALOK KUMAR SHARMA CONVENER, IIC MAIT

Photo: Promotional poster of Expert Talk



Photo: Glimpses of the Expert Talk



Photo: Glimpses of the Expert Talk



Photo: Glimpses of the Expert Talk

Placements of Students of MAE Department

MAIT's dedicated placement cell for both Management and Engineering works on individual grooming and placement of students. More than 1077 students of B. Tech (2017-21 batch) and 1181 students of (2018-22 batch) were placed on campus. 136 students have been picked up by cognizant and 110 students by wipro from the 2022 passout batch. The highest package offered to MAE students is 17 Lacs by R.A. Intelligent Solutions and 12.83 Lacs by ZS Associates. Out of all the above placements following is the number of placed MAE students:

S. No.	COMPANY	PACKAGE (In Lacs)	No. of Students Placed
1	R. A. Intelligent Solutions	17	1
2	ZS Associates	12.83	4
3	Cognex	12	2
4	Druva.IO	12	1
5	Ather Energy	10	1
6	Birdeye	9	1
7	Let's Dress Up	8	2
8	Aadiswan	7	1
9	Wiley Mthree	7	1
10	Accenture	6.50	5
11	Cubation Consultancy	6.50	2
12	Polestar	6.26	5
13	Technip core	6.2	1
14	Honda Cars India	6	1
15	Tsaaro Solution	5.25	1
16	Tata Electronics Pvt. Ltd	6	2

17	Buyu's	6, 3.6	1+2
18	Cognizant	5.1	30
19	AAkash+Byju	5	3
20	QSpider	4.5	7
21	Daikin	4.5	3
22	Noon Technology	4.25	4
23	Wipro	4	17
24	Capgemini	4	7
25	IEX	4	1
26	Escorts Ltd.	3.75	3
27	HCL Technologies	3.65	2
28	New Genesis	3.6	8
29	Infosys	3.5	12
30	Reliance Retail	3.5	8
31	TCS	3.5	3
32	Moglix	3.25	1
33	ETA- Engineering	3.23	7
34	DXC	3	7
35	Sherman International	3	1
	Total		157

MAE/ME ***TECHNICAL MAGAZINE***

October, 2022

न चोरहार्यं न च राजहार्यं न भ्रातृभाज्यं न च भारकारि
व्यये कृते वर्धत एव नित्यं विद्याधनं सर्वधनप्रधानम्
॥

Department of Mechanical and Automation
Engineering & Mechanical Engineering
Maharaja Agrasen Institute of Technology,
Rohini, Delhi, India

Comment/Feedback Mail to: - mae@mait.ac.in

Website: www.Mae.Mait.ac.in