REPORT

on

GUJCOST SPONSORED & DST SUPPORTED
STATE LEVEL SEMINAR

'ADVANCES IN WELDING PROCESSES'

ORGANISED BY

MECHANICAL ENGINEERING DEPARTMENT

DR. JIVRAJ MEHTA INSTITUTE OF TECHNOLOGY, MOGAR,

ANAND

Held on

21ST FEBRUARY 2019

Seminar Title : **ADVANCES IN WELDING PROCESSES**

- Organized By : **Mechanical Engineering Department**
- Chief Patron : **Shri. Narendra Shrimali**
- Patron : **Dr. Arvindkumar M. Jain**
- Convener : **Dr. Manish Mehta**
- Coordinators : **Prof. Sunil Bachani,**
  - **Prof. Avdhoot Jejurkar (DJMIT Coord.)**
- Venue : **Ramanujan Hall,**
  Dr. Jivraj Mehta Institute of Technology.
- Date : **21st February 2019**

AIM OF THE SEMINAR

- To introduce the Advances in Welding Processes.
- To bring the awareness and importance of welding engineering field through interaction with experts of different sessions.

ABOUT THE SEMINAR:

- The seminar focused on various aspects of advances in welding processes as the welding processes play very dominant role in fabrication industries for metal joining to achieve higher joint efficiency with a proper combination of base material and process parameters.
- In the sessions there was discussion related to the process parameter influencing the development of weld microstructure and the joint strength.
- There was also discussion on fusion welding which is more susceptible to certain problems such as liquation cracking, solidification cracking and porosity that degrade the mechanical properties. Solid state welding can overcome these problems to improve the joint strength.

- Also the sessions discussed on Friction stir welding which is more preferred than fusion welding to join high strength aluminum alloys. The seminar also discussed about the process details and benefits.

SCHEDULE OF ONE DAY SEMINAR

21st FEBRUARY 2019, FRIDAY	
Time	**Activity**
9:30 am	Registration
10:00 am to 10:30 am	**Inaugural Function**
10:30 am to 11:00 am	Hi-Tea
11:00 am to 12:15 pm	**Expert Lecture on Advances in Welding Engineering** **by Dr. Sanjay Soman**, Head, Metallurgical Engineering Department, Faculty of Technology & Engineering, The Maharaja Sayajirao University of Baroda, Vadodara.
12:15 to 1:15 pm	Lunch
1:15 pm to 2:30 pm	**Expert Lecture on Advances in Metal Joining** **by Dr. Vishvesh Badheka**, Head, Mechanical Engineering Department PDPU, Gandhinagar
2:30 pm to 2:45 pm	Tea & Snacks
2:45 pm to 4:00 pm	**Expert Lecture on Advanced Welding Processes in Aluminum Alloys** **by Dr. Nilesh Ghetiya**, Associate Professor Mechanical Engineering Department Nirma University, Ahmedabad
4:00 pm to 4:30 pm	**Valedictory Function**

REGISTRATION:

The registration began from 9:00 a.m. onwards. The total of 81 participants registered for the seminar including UG students, PG students, Research Scholar and Faculty members. Spot registration was allowed for participants.

All registered participants received the Kit which included the seminar brochure.

INAUGURATION FUNCTION:

The inauguration session began with welcome to all the dignitaries on the dais. Prof. Anirudhsingh of E&C Department, DJMIT welcomed the dignitaries on the dais and off the dais. Also he welcomed all the faculties and participants.

As an auspicious beginning, the prayer was sung along with the lighting of lamp done by all the dignitaries. After that the floral welcome to all the dignitaries was done.

Inaugural Function

The dignitaries on dais included Shri Narendra Shrimali, Honourable Chairman of CENT-DJMIT, Shri. Sanjay Shrimali, Director, DJMIT, Dr. Arvindkumar Jain, Principal, DJMIT, Dr. Sanjay Soman From M.S University and Dr. Manish Mehta, Head, Mechanical Department, DJMIT

Dignitaries on the dais addressed the Inaugural session with their views and opinions.

WELCOME SPEECH:

Welcome speech was given by Dr. Manish Mehta, Head, Mechanical Engineering Dept., DJMIT. He briefed about the very purpose of organizing the event and welcomed all the dignitaries. He wished all success to the department for conducting seminars. Dignitaries were presented mementoes as a token and memory of the Seminar from the college.

Vote of thanks for the inaugural function was proposed by Prof. Mahesh Chavda, Assistant Professor, Mechanical Engg. Dept. DJMIT. Participants were invited for Hi-Tea after the inaugural session.

SESSION 1:

ADVANCES IN WELDING ENGINEERING BY DR. SANJAY SOMAN

Head, Metallurgical Engineering Department, Faculty of Technology & Engineering, The Maharaja Sayajirao University of Baroda, Vadodara

After the introduction of Speaker a floral welcome was done by done by Dr. Manish Mehta, Head, Mech. Engg. Dept.,DJMIT.

Dr. Sanjay Soman discussed the fundamentals and importance of welding metallurgy. Increasing the weld joint efficiency is the primary objective of metal joining. The joint efficiency depends on process parameters. Thereafter, he explained the effect of process parameters on the development of weld microstructure and the austenite and delta ferrite contents in the microstructure of the weld zone. In the end, he talked about the effect of process parameters on micro hardness and microstructure of the heat affected zone and the corresponding change in the material properties


Dr. Sanjay Soman delivering expert talk

SESSION 2:

ADVANCES IN METAL JOINING BY DR. VISHVESH BADHEKA.

Head, Mechanical Engineering Department, PDPU, Gandhinagar

After the introduction of Speaker a floral welcome was done by done by Dr. Manish Mehta, Head, Mech. Engg. Dept.,DJMIT.

Dr. Vishvesh Badheka discussed various shortcomings in the traditional fusion welding processes and the significance of overcoming the same using solid state welding processes. Unlike fusion welding processes where workpiece melting occurs, the peak temperature in solid state welding process does not exceed the solidus temperature. Subsequently, he highlighted the relationships between microstructure, grain size, micro hardness and performance of the joint using friction stir welding process. In addition, he talked about the influence of the process parameters on joint microstructure and mechanical properties in friction stir welded joints. In the end, he discussed about the challenges in the experimental efforts during friction stir welding and demonstrated the actual welding samples of friction stir welded joints using different combinations of process and tool parameters.


Dr. Vishvesh Badheka delivering expert talk

SESSION II: ADVANCED WELDING PROCESSES IN ALUMINUM ALLOYS

BY DR. NILESH GHETIYA,

Associate Professor, Mechanical Engg. Dept., Nirma University, Ahmedabad

After the introduction of Speaker a floral welcome was done by done by Dr. Manish Mehta, Head, Mech. Engg. Dept.,DJMIT.

Dr. Nilesh Ghetiya discussed the applications and importance of aluminum alloys in automotive, marine and aerospace industries. Subsequently, he explained the various classifications of aluminum alloys and emphasized more on the precipitation hardened aluminum alloys such as 2xxx, 6xxx, and 7xxx series aluminum alloys. In the end, he highlighted the difficulties and challenges during welding of thin aluminum alloys specifically related to heat input that significantly influences the weld quality such as porosity, cracking, burn-through and distortion defects.


Dr. Nilesh Ghetiya was delivering expert talk

VALEDICTORY FUNCTION:

The session began with inviting dignitaries on the dais. After the brief speech by Principal, DJMIT who appreciated efforts of the team for successfully conducting the seminar, the certificates were distributed to participants.



Certificate distribution to participants during valedictory function

Memento was given to all Experts as a token of love and appreciation.

Memento given to Experts as a token of love and appreciation

Vote of thanks was proposed by Prof. Mahesh Chavda, Assistant Professor, Mechanical Engg. Dept., DJMIT. On behalf of Mechanical Engineering Department, DJMIT, he thanked all Expert speakers for delivering expert talk. He thanked convener and coordinators and the DJMIT management for organizing the seminar. He also thanked GUJCOST and DST for providing financial assistance for the seminar.