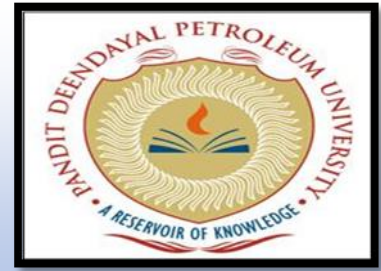




**Newsletter
Department of
Mechanical Engineering
March 2019**



From the Director's Desk...

Dear Reader,

I am delighted to introduce this fifth edition of the Mechanical Department Newsletter. We intend to maintain this regular publication and to use it to keep you in touch with news and developments related to the Department of Mechanical Engineering, School of Technology (SOT).

I take this opportunity to congratulate the editorial team for bringing out this newsletter, which in itself is an achievement considering the effort and time required. May all our students, staff and faculty soar high in uncharted skies and bring glory to the world and their profession with the wings of education.



*Dr. T.P. Singh
Director
School of Technology*

From the Head of the Department's Desk...

It gives me immense pleasure to share newsletter of the Mechanical Engineering dept., March 2019. Mechanical Engineering Dept. is the most happening dept. of the School Of Technology. Newsletter gives an overview of the activities carried out by students, staff and faculties during the month. You may please share your feedback, comments & suggestions to the coordinators.



*Dr Vishvesh Badheka
HOD, Mechanical Engineering
School of Technology*

PUBLICATIONS

Journals

- *Dr Vivek V Patel, Dr Vivek K Patel and Dr. Pankaj Sahlot published the following journal during March 2019*
1. *Sharma, D.K., V. Patel, V.J. Badheka, K. Mehta, and G. Upadhyay. Fabrication of hybrid surface composites AA6061/ (B4C+MoS2) via friction stir processing. Journal of Tribology 2019, 1-15.*
 2. *Panchal D, Prajapati A, Patel V, Mudgal A, Davies P. "An efficient optimization and comparative analysis of cascade refrigeration system using NH3/CO2 and C3H8/CO2 refrigerant pairs" International Journal of Refrigeration. 2019.*
 3. *P. Sahlot, A. K. Singh, V. J. Badheka and A. Arora, " Friction stir welding of copper: Numerical modeling and validation", Transactions of the Indian Institute of Metals, 2019, 1-9.*

PUBLICATIONS

Conferences

- **Dr Pankaj Sahlot** published the following papers during the month of March 2019.
1. **Sahlot, Pankaj; Mishra, Rajiv and Arora, Amit**, “Wear mechanism for H13 steel tool during friction stir welding of CuCrZr alloy”, in the Symposium on Friction Stir Welding and Processing X, TMS 2019 Annual Meeting and Exhibition, San Antonio, Texas, USA, 10-14th March 2019
 2. **Sahlot, Pankaj and Arora, Amit**, “Numerical model to estimate tool wear and worn-out pin shape during friction stir welding of CuCrZr alloy”, in the Symposium on Friction Stir Welding and Processing X, TMS 2019 Annual Meeting and Exhibition, San Antonio, Texas, USA, 10-14th March 2019
 3. **Sahlot, Pankaj; Nene, Saurabh; Frank, Michael; Mishra, Rajiv and Arora, Amit**, “Microstructural and mechanical properties of friction stir welding of dissimilar lap joint of metallurgically immiscible CuCrZr and SS 316L”, in the Symposium on Friction Stir Welding and Processing X, TMS 2019 Annual Meeting and Exhibition, San Antonio, Texas, USA, 10-14th March 2019.
 4. **Singh, Amit Kumar; Sahlot, Pankaj and Arora, Amit**, “Effect of actual thermo-physical properties on heat transfer and materials flow for dissimilar materials – Al 6061-T6 and AZ31”, in the Symposium on Friction Stir Welding and Processing X, TMS Annual Meeting and Exhibition, San Antonio, US, Mar. 10-14, 2019.

PUBLICATIONS

Conferences

➤ *Dr Vivek V Patel presented the following presentations during the month of March 2019 at TMS 2019 Annual Meeting and Exhibition. The presentations were delivered on:*

1. *Stationary Shoulder Friction Stir Processing: A Low Heat Input Grain Refinement Technique for Magnesium Alloy.*
2. *Homogeneous Grain Refinement and Ductility Enhancement in AZ31B Magnesium Alloy Using Friction Stir Processing.*



Presentation at TMS 2019 Annual Meeting and Exhibition

Book Chapter

➤ *Dr Vivek V Patel published the following book chapters during March 2019*

1. *V. Patel, W. Li, and D. Sejani. Friction Stir Welding and Its Variants. Advances in Welding Technologies for Process Development 2019, 33.*
2. *Das, S., J.J. Vora, and V. Patel. Regulated Metal Deposition (RMD™) Technique for Welding Applications: An Advanced Gas Metal Arc Welding Process. Advances in Welding Technologies for Process Development 2019, 23.*

WORKSHOP ATTENDED

➤ **Dr Vivek V Patel and Dr Pankaj Sahlot** attended the following workshop and conferences during March 2019

1. **Dr Vivek V Patel** attended TMS 2019 Annual Meeting and Exhibition, San Antonio, Texas, USA, March 09-15, 2019.
2. **Dr Pankaj Sahlot** attended Workshop and symposium on Advanced Simulation Methods: DFT, MD and Beyond at IIT Delhi from 6-10th March 2019. Also had lab visit and discussion with various faculties of IIT Delhi.



Workshop and symposium at IIT Delhi

WORKSHOP ORGANIZED

➤ *Dr Vivek K Patel organized a two days workshop on "Thermal Systems Design and Applications" during March 15-16, 2019. The following topics covered during the workshop:*

- ❖ *Solar thermal heating and cooling applications*
- ❖ *Design of refrigeration systems for commercial applications*
- ❖ *Air conditioning system design for commercial applications*
- ❖ *Hybrid Vehicles*
- ❖ *Fuel Cell Technologies*



Two days workshop on "Thermal Systems Design and Applications"

➤ *Faculty Seminar was delivered by Dr Janardhan V on 15th March 2019 which was attended by the Mechanical Department faculties and PG students.*

PROFESSIONAL ACTIVITY

- **Dr Vishvesh Badheka** conducted following professional assignments during the month of March 2019:
 1. As external examiner of the MSc-Engg Thesis examination of Mr Bharatkumar Doshi (scientist G) under Homi Bhabha National Institute (HBNI) on invitation of Dean - Academics and Student Affairs, Institute for Plasma Research on 8th March 2019 at IPR.
 2. As external examiner of UG viva Material science & Metallurgy at Production Engineering, BVM College, on 9th March 2019.
- **Dr Vishvesh Badheka** had interaction with the following professionals during the month of March 2019:
 1. Dr Pallavi Agrawal, Principal, BIT, Vadodara visited welding research lab and engineering metallurgy lab on 15th March 2019 for exploring possibility collaborative research.



Principal, BIT at Welding Research Lab

2. Dr Pradeep of Xylem water solution visited PDPU on 29th March 2019.
3. Mr Bharat Doshi of IPR and Mr Jignesh of Khodyar CAD centre visited during Research week celebration on 29th March 2019.



Research week celebration

4. M.Tech students from IITRAM visited welding research lab on 22nd March 2019.

PROFESSIONAL ACTIVITY

➤ **Dr Vishvesh Badheka** conducted the following important administrative assignments

1. Conducted interactive meeting of M.Tech I & II (Thermal & Design) with MEFAC and Director SOT on 14th March 2019



Interactive meeting of M.Tech I & II (Thermal & Design) with MEFAC

2. Welcomed Shree K N Vyas, Chairman, DAE on 25th March 2019 at A'bad airport and interacted with him during his visit to IPR.



Interaction with Shree K N Vyas, Chairman, DAE during his visit to IPR

3. Conducted interactive meeting with B.Tech- I, II, III, IV (Mechanical Engineering students) with MEFAC and Director SOT on 28, 29th March 2019.



Interactive meeting of B.Tech I,II, III, IV with MEFAC

PROFESSIONAL ACTIVITY

4. Member of the road show committee held on 31st March 2018 at Baroda



Road show at Baroda

FACULTY ZONE

GUEST LECTURES DELIVERED (OUTSIDE CAMPUS)

➤ **Dr Vishvesh Badheka** delivered following expert lectures:

1. **Welding Research activities and funding opportunities for faculties at Production Engineering Dept, BVM college on 9th March 2019**
2. **Fundamentals of arc welding for UG students at Mechanical Engineering Silver oak college on 12th March 2019**



Expert talk at Silver Oak College

3. **Surface modification by Solid State Processing, at Mechanical Engineering Dept, IITRAM on 13th March 2019 during five day workshop on wear & tribology**



Expert Lecture at IITRAM

4. **Friction stir welding, for UG students at Mechanical Engineering Dept, GCET, V V Nagar, 30th March 2019**

➤ **Dr Jaydeep Patel** arranged lecture on “Application of Finite Element Analysis in Pump Industry” by Dr. Pradeep Kumar, Sr. Engineer FEA, Xylem Water Solutions India Pvt. Ltd.

CONFERENCES/WORKSHOPS ATTENDED

- *Pratyush Srivastava and Rajnish Kumar attended the workshop was on The Theory and Practice: Co-Operative Robots and Wind Turbine Blade Prototyping (CRWT 2019)*



CRWT 2019 Workshop

- *Frank Gandhi attended Two-days' Seminar on "Thermal Systems Design and Applications" dated 15th-16th March, 2019 organized by Department of Mechanical Engineering.*
- *Parth Bagerwal participated in "CASE STUDY WRITING", a two day workshop on understanding the principles of writing case studies, organized by IIC, PDPU.*

HIGHER STUDIES OPPORTUNITY

Sandip Patel has been admitted to Columbia University's Fu Foundation School of Engineering and Applied Science as a candidate in the Mechanical Engineering Master of Science program

STUDENT ZONE

AWARDS

- *Varalikka Paul* was awarded with **BEST DELEGATE - UNWTO COUNCIL** at **BALI ASIA INTERNATIONAL MODEL UNITED NATIONS**



BALI ASIA INTERNATIONAL MODEL UNITED NATIONS (BAIMUN 2019)

BAIMUN 2019 was held in Bali, Indonesia from 22.March.2019 to 25.March.2019 with the aim to provide a platform for the young future diplomats to encourage themselves in understanding international issues and policy, debate and share perspectives between participants from different backgrounds and ethnicity. With the ultimate goal being to encourage youth awareness of international relations and issues, understand and try to form possible solutions to solve the issues, whilst providing an atmosphere where participants can improve their communication and diplomatic skills, networking and critical thinking towards international issues within international atmosphere and framework.

It had six councils, namely WHO, UNESCO, IMO, IMF, UNWTO and FAO." OPENING CEREMONY, MUN MAIN CONFERENCE AND CLOSING CEREMONY WITH AWARD DISTRIBUTION.

Newsletter Coordinators

Faculty Coordinator: Dr Pankaj Sahlot
Staff Coordinator: Mrs Pooja Nimavat