

**DEPARTMENT OF MECHANICAL ENGINEERING
P E S COLLEGE OF ENGINEERING, MANDYA-571401**



REPORT

On

**MECHANICAL ENGINEERING ASSOCIATION
ACTIVITIES
FOR THE YEAR 2022-2023**

Prepared by

Dr. SADASHIVA M
Secretary-MEA

Event 1

Report on

Academic Event - VVDN and NI LabVIEW & Data Acquisition System

One Day Academic Event on Lab VIEW and Data Acquisition System was jointly organized by VVDN technologies and National Instruments (NI) at Hablis Hotel, Guindy, Chennai, Tamil Nadu on 11th October 2022. Mr. K N Pavan, Dr. Gurupavan H R, Dr. Madhusudana C K and Mr. Ramesh Kurbet had represented the PESCE. LabVIEW is a graphical programming environment engineers use to develop automated research, validation, and production test systems. LabVIEW has been engineers' tool of choice for developing automated test systems. Tests can be carried out from simple voltage measurement to advance space missions. LabVIEW includes the standard capabilities viz.,

1. Acquire data from NI & third-party hardware, and communicate using industry protocols.
2. LabVIEW create interactive UIs for test monitoring and control.
3. Utilize standard math, probability, and statistical functions Integrate code written in Python, C/C++, .NET, and MathWorks MATLAB® software Save data to .csv, .tdms, or any custom-defined binary file.

Around 100 delegates were attended the event and various topics were discussed. In addition to the above, the event has also provided a large platform to the academicians to exchange their idea towards skill lab setup for the students. The LabVIEW software can be used for pre final year and final year students for academic purpose and also can be used for PG students as well as research scholars.



Fig: Photograph at the event

Event 2

REPORT on
One Week FDP
On
ADVANCED MANUFACTURING TECHNOLOGY

<u>FDP Name</u>		Day 1.	
ADVANCED MANUFACTURING TECHNOLOGY		Date:17.10.2022	
Title of the talk on:			
INTRODUCTION TO NANO MATERIALS			
Venue	CRC Seminar Hall Dept. of Mechanical Engg., PESCE MANDYA		Dr. S. GHANARAJA Professor Dept. of Mechanical Engg. PESCE, Mandya
Abstract: Scientists have not unanimously settled on a precise definition of nanomaterials, but agree that they are partially characterized by their tiny size, measured in nanometers. A nanometer is one millionth of a millimeter - approximately 100,000 times smaller than the diameter of a human hair. Nano-sized particles exist in nature and can be created from a variety of products, such as carbon or minerals like silver, but nanomaterials by definition must have at least one dimension that is less than approximately 100 nanometers. Most nanoscale materials are too small to be seen with the naked eye and even with conventional lab microscopes. Materials engineered to such a small scale are often referred to as engineered nanomaterials (ENMs) which can take on unique optical, magnetic, electrical, and other properties. These emergent properties have the potential for great impacts in electronics, medicine, and other fields. while engineered nanomaterials provide great benefits, we know very little about the potential effects on human health and the environment. Even well-known materials, such as silver for example, may pose a hazard when engineered to nano size.			

<u>FDP Name</u>		Day 2.	
ADVANCED MANUFACTURING TECHNOLOGY		Date:18.10.2022	
Title of the talk on: Fabrication and advance testing methods of composite materials			
Venue	CRC Seminar Hall Dept. of Mechanical Engg., PESCE MANDYA		Dr. RUDRESH ADDAMANI Associate Professor & HOD Dept. of Mechanical Engg. PESCE, Mandya
Abstract: A composite material can be defined as an artificially prepared or natural multiphase that exhibits significant properties of constituent material resulting in a superior and stronger product. Being formed by the combination of two or more materials that have different characteristics, Composite materials open a wide window for application in various engineering sectors like Aerospace, defense, Automobile, etc. “How come it has been proved that Composites are better than Conventional materials” Answer: “Testing and analysis of composite materials”. Thorough Testing practices and Standards have helped to evaluate the performance of composite materials. The data derived from composite materials testing and analysis can be used to compare the composite materials against conventional materials. Composite materials testing plays a vital role across the composite’s supply chain and product life cycle. A range of challenges in regards to safety, quality, process control, regulatory compliance, and performance is encountered. Whether you are a base chemical provider, additive supplier, fibre manufacturer, or end-user, overcoming these challenges can give your business a significant commercial advantage.			

<u>FDP Name</u>		Day 3.	
ADVANCED MANUFACTURING TECHNOLOGY		Date: 19/10/2022	
Title of the talk on: Computational Fluid Dynamics (CFD) Analysis of fluids			
Venue:	CRC Seminar Hall Dept. of Mechanical Engg., PESCE MANDYA		
Abstract: Computational Fluid Dynamics (CFD) is the analysis of fluid flows using numerical solution methods. Using CFD, you are able to analyze complex problems involving fluid-fluid, fluid-solid or fluid-gas interaction. Engineering fields where CFD analyses are frequently used are for example aerodynamics and hydrodynamics, where quantities such as lift and drag or field properties as pressures and velocities are obtained. Fluid dynamics is involved with physical laws in the form of partial differential equations. Sophisticated CFD solvers transform these laws into algebraical equations and are able to efficiently solve these equations numerically. CFD analyses have a great potential to save time in the design process and are therefore cheaper and faster compared to conventional testing for data acquisition. Furthermore, in real life tests a limited amount of quantities is measured at a time, while in a CFD analysis all desired quantities can be measured at once, and with a high resolution in space and time. Because CFD analyses approximate a real physical solution, it should be noted that these CFD analyses cannot fully exclude physical testing procedures. For verification purposes tests should still be performed			

<u>FDP Name:</u>		Day 4.	
ADVANCED MANUFACTURING TECHNOLOGY		Date: 20.10.2022	
<u>Title of the talk:</u> STRESS ANALYSIS OF GEAR			
Venue:	CRC Seminar Hall Dept. of Mechanical Engg., PESCE Mandya		Dr. SRINIVASA M R Assistant Professor Dept. of Mechanical Engg., PESCE, Mandya
Abstract: Gears are most powerful machine element to transmit the motion between rotating shaft. It acts as a dominating transmission system from many years ago. In this work, a spur gear from stone crusher machine is analysed using theoretical Lewis equation and Finite element analysis method. Here, the bending stress on the spur gear is analysed since these stresses induced play a vital role in gear life. The analysis presented the effect of gear material on induced bending stress. The material C15 steel/CI 30 is replaced by C45 steel/CI 30. The C45 steel material has better mechanical properties than C15 material. The result explains that C45/CI30 gives lower value of bending stress as compare to the existing material. Module is important parameter during modelling of spur gear. The parameter is varied and proportionally the bending stress are determined theoretically for both new and existing materials. Finally the results of both gear are compared and concluded with the American gear manufacturer association data. The results shows that the bending stress reduces with increase in module. The future work is to find the bending stress induced on spur gear by varying the module using FEA and varying the shape of meshing structure.			

<u>FDP Name:</u>		Day 5.	
ADVANCED MANUFACTURING TECHNOLOGY		Date: 21.10.2022	
<u>Title of the talk:</u> Recent Developments in Friction Stir Welding Techniques.			
Venue	CRC Seminar Hall Dept. of Mechanical Engg., PESCE Mandya		Dr. Sadashiva M Assistant Professor Dept. of Mechanical Engg. PESCE, Mandya
Abstract: The comprehensive body of knowledge that has built up with respect to the friction stir welding (FSW) of aluminium alloys since the technique was invented in 1991 is reviewed. It is demonstrated that FSW of aluminium is becoming an increasingly mature technology with numerous commercial applications. In spite of this, much remains to be learned about the process and opportunities for further research and development are identified. <i>Friction stir welding</i> presents a new technique for material joining and processing. Friction stir welding has enjoyed worldwide interest since its inception because of its advantages over traditional joining techniques including with overcomes melt-related problematic, such as <i>porosity and cracking in traditional welding</i> . FSW is a solid-state process involves benefits not only eliminates melt-type issues but also significantly decreases the temperature in the weld zone. This in turn limits formation of <i>intermetallic phases</i> . Because of these added advantages fabrication of aluminium and its alloy is a emerging field in modern era, so in this regarding matters, this technical talk focus on widely on aluminium, its alloy, composites, fabrication technique including and majorly focus on solid state welding called friction stir welding concept, principle, method , process parameters, tools, advantages, limitations and application. Also briefly discuss on current trends in FSW methods, optimization and challenges with respect to research.			

Event 3

REPORT

EVENT: TECHNICAL TALK

TOPIC: CAREER DEVELOPMENT

VENUE: CRC SEMINAR HALL

DATE: 19 NOV 2022

TIME: 1:00 PM

ALUMNI OF PES COLLEGE
MECHANICAL DEPARTMENT
(2007-2011),



Mr Chirag Hiremath ,
Principal Thermal Engineer at ZF,
Detroit, **USA**.

Department of Training and Placement has organised an interactive session with Mr Chirag Hiremath , Bachelor's Degree in Mechanical Engineering, PESCE 2007-2011 batch student, currently working as Principal Thermal Engineer at ZF, Detroit, USA. The technical talk is on how to build the career after completion of engineering for 5th and 7th SEM students of PESCE. Students are asked to make use of this opportunity from alumni of our department for career benefits. Mr Chirag Hiremath gave an wonderful talk and students are much satisfied and got a brief ideas regarding career benefits. In the last session of the technical talk students are interact with Mr. Chirag Hiremath regarding doubts.

Photo Gallery



Event 4

REPORT

EVENT: Induction Program For First Year Mechanical Engineering Students

For the AY: 2022-23

VENUE: Placement Seminar Hall and CRC Seminar Hall

DATE: 1ST DEC 2022

TIME: 2 PM.

On 1st DEC 2022, AY 2022-23 batch students were gathered in PESCE mandya. On that day students are first invited to placement auditorium to give brief guidelines regarding to their academics and various activities that take place in the college. Next they are invited to their respective departments. The students of mechanical engineers are gathered at CRC seminar hall at 2pm they are welcome by the department HOD Dr. Rudresh addamani sir and department staffs. Later HOD give a brief instruction to the students regarding to their classes, disciplines maintained in the campus, facilities of our departments and HOD introduces the department staffs to the students. After that Dr. M.R. Srinivasa sir presented a PPT on department achievements, social activities, numbers of students placements, achievers of the departments, alumni of the departments etc. Finally Dr. Sadashiva sir secretary of MEA gave a vote of thanks to students. After that assistant professor Avinash sir is given in charge to take the students visit the department labs and facilities. After visiting labs students are so happy that they chosen a great department.

PHOTO GALLERY



Event 5

REPORT

EVENT: ORIENTATION PROGRAM

VENUE: DR. H. D. CHOWDAIAH AUDITORIUM

DATE: 11th DEC 2022

TIME: 10 AM.

**ALUMNI OF PES COLLEGE
MECHANICAL DEPARTMENT
1996 Batch**



**RAJESH OJHA
Managing Director and India MU Business lead
For GCCS and GICS at Accenture.**

PES Engineering College has organized Orientation program for the students of AY-2022-23. For this program Mr. RAJESH OJHA alumni of mechanical engineering department 1996 batch, has invited as a chief guest for the program. After the program Mr. rajesh ojha is invited to mechanical department and he is honoured by the department HOD Dr. Rudresh addamani sir, Dr. M.R. Srinivasa sir, Mr. T M Devegowda sir, Dr. Vinay.S sir, Dr.N Jagadeesh sir. Later he gave the speech of his college days remembering his student life of PESCE and professors. He gave a some suggestions to department and students based on his experience as Managing Director at Accenture. Students of mechanical department have taken suggestion from Mr. rajesh ojha that how to face today's computation world and how to become a good entrepreneur and lot has been interacted with students.

PHOTO GALLERY



Event 6

A REPORT on “BASICS AND APPLICATIONS OF COMPUTATIONAL FLUID DYNAMICS IN AEROSPACE INDUSTRIES”

EVENT: TECHNICAL TALK

TIME: 11:00am to 2.00Pm

DATE: 14/01/2023

VENUE: CRC Seminar Hall

Department of Mechanical Engineering organized a technical talk on **“BASICS AND APPLICATIONS OF COMPUTATIONAL FLUID DYNAMICS IN AEROSPACE INDUSTRIES”** on 14TH JANUARY 2023 in CRC Seminar Hall. Technical talk focused on basics of computational fluid dynamics and its application in various industries. The programme started at 11:00 am with the welcome address by Dr. Srinivasa M R IIIC Dean PESCE, and give brief introduction about Resouce person by Mr.Ganapati Bawge .The dignitaries on the dias were Dr. Rudresh addamani HOD department of mechanical Engineering, Mr.Ganapati Bawge IIIC coordinator department of mechanical Engineering, Dr.Sadashiva M Secretary for Mechanical Engineering Association and Mr Yogesh T V Resouce person Scientist F GTRE.



Prof. Dr. Srinivasa M R giving the opening remarks for the Technical T

The key note address was given by Mr Yogesh T V Resouce person Scientist F GTRE. He shared his research work and talked about basics of computational fluid dynamics. He gave several examples in applications of computational fluid dynamics in various industries which

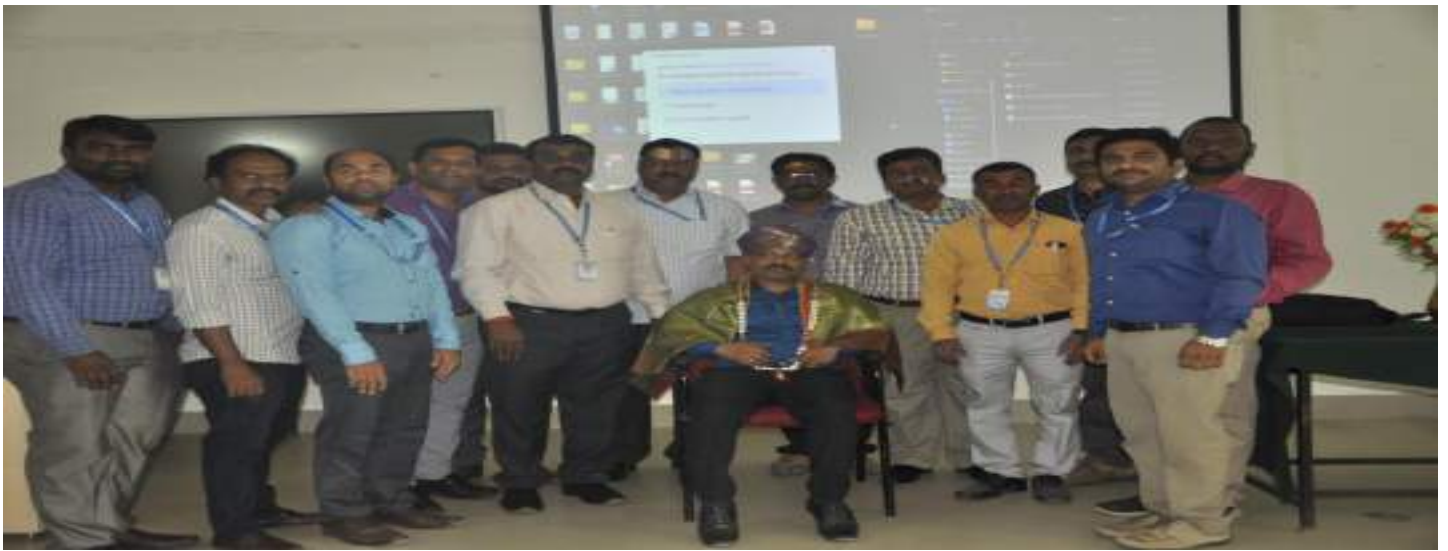
have been developed in their lab and mentioned some of the case studies related to computational fluid dynamics. In this technical talk more than 150 students participated along with the Mechanical Engineering faculties. Program is well organized by Mr. Ganapati Bawge IIC coordinator department of mechanical Engineering along with faculties Avinash M and Santhosh V. The programme wrapped up around 2:00 pm. The vote of thanks which was given by Mr. Ganapati Bawge.



Mr Yogesh T V being felicitated by Department of Mechanical Engineering

Resource person **Mr Yogesh T V Group Director - Scientist F** from DRDO-GTRE , **Gas Turbine Research Establishment** is one of the pioneering Research and Development Organizations under the Ministry of Defence, Government of India. And he has vast experience in the fields of Gas Turbine performance estimation, Computational Fluid simulations of Gas turbine components, After burner and Combustor simulations and Fuel pump studies Etc....

PHOTO GALLERY





Event 7

REPORT ON

EVENT: TWO DAYS BOOT CAMP

VENUE: P E S ENGINEERING COLLEGE MANDYA

DATE: 19TH JAN TO 20TH JAN 2023

MEA in association with III cell has organized two days boot camp for the students of mechanical 5th and 7th sem students on 19th and 20th of Jan 2023 at PESCE mandya. The boot camp is about R & D in design and analysis.

DAY 1

INAUGURATION FUNCTION

Two days boot camp begins with an Inaugural Function. The programme started at 11:00 am with the welcome address by Mr.Ganapaty Bawge IIIC coordinator department of mechanical Engineering. The dignitaries who shared the dais are Dr. R.M. Mahalinge Gowda Principal PESCE, Dr. Rudresh addamani HOD department of mechanical Engineering, Dr. Srinivasa M R IIIC Dean PESCE, Dr. Mahendra babu K J COE PESCE , Manjunath Rodagi Senior Manager skill lync and Mr.subramanian J.H Director of Mech support delivery, followed by the floral welcome of our invited guests of honours and the words of Motivation and Inspiration by them.





DAY 1

SESSION 1

Introduction to CATIA Software

On the first day of Workshop, more than 200 participants have been participated after the inaugural function students are to be dispersed to the respective venues (CAD lab (personal computer access) CAMD lab (personal computer) students who are accessing their laptops- CRC seminar hall & respective classroom). In this session experts from the skill lync explain the basics of CATIA, application of CATIA and they are taught some of the tools in CATIA software.



DAY 1

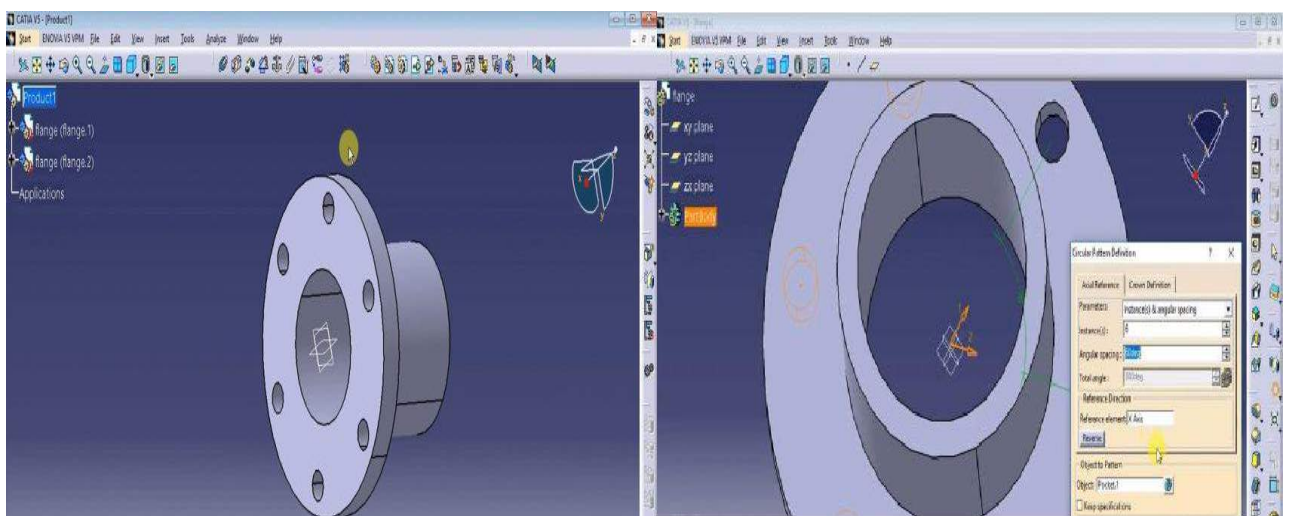
SESSION 2

HANDS ON SESSION

Students got familiar with CATIA and its tools. And can preferably perform tasks on it with



ease.



DAY 2

SESSION 1

CATIA HANDS ON SESSION AND INTRODUCTION TO CFD

On day two student are well experienced with CATIA software and students are exposed to CFD analyses which has been using in different industries



DAY 2

SESSION 2

VALIDICTORY FUNCTION

In the closing ceremony, Participants have shared their valuable feedback and experience about this Bootcamp and also talked about their learning outcome and the words of Motivation and Inspiration given by Dr Vinay TPO, Dr. Rudresh addamani HOD department of mechanical Engineering and Manjunath Rodagi Senior Manager skill lync Mr Syed Imran Ali proposed a vote of thanks.





Event 8

Report on Visit

Date of Visit: 24/01/2023

Programme: IMTEX-23 (Exhibition)

Place: Bangalore International Exhibition Centre (BIEC), Maadavara, Nelamanagala Taluk,
Bangalore Rural District.

The largest exhibition of machine tool and manufacturing technology in South and South East Asia was held in Bangalore International Exhibition Centre (BIEC), Bengaluru, from January 19 through 25, 2023, organised by Indian Machine Tool Manufacturers' Association (IMTMA). Digital Manufacturing and Tool tech organised concurrently at IMTEX-2023.

From Department of Mechanical Engineering, P E S College of Engineering, Mandya Dr. Sadashiva M and Dr. Srinivasa M R visited the exhibition. The main objective of the visit to have a knowledge of advanced manufacturing methods , to know about the knowledge and to enquire for friction stir welding machine needed for the AICTE sanctioned project and to collect the information about robotic suppliers.

The exhibition featured with more than 950 exhibitors from 23 countries and over 77,000 square metres of display space in 5 main halls. Many manufacturers and suppliers along with service providers across the world participated in exhibition.

The Indian metal cutting industry's premier event, IMTEX, will highlight the newest trends and technological advancements from both India and other major companies across the world. The top event displaying machine tools is called Tool tech was fantastic.

Companies from India, Korea, Japan, USA, Germany, China and many other countries participated in expo.



Event 9

REPORT

EVENT: Mecho Cup-2023 Cricket

VENUE: PES Outdoor Stadium

DATE: 16TH JAN TO 27TH JAN 2023



Mechanical Engineering Association organized Mecho Cup-2023 for the students of mechanical department at PES Outdoor Stadium from 16TH JAN to 27TH JAN 2023. on 16th JAN For the inauguration event Chief patron was Dr. B. Shanmukha Associate Professor & HOD Mathematic Department, Dr. Rudresh Addamani Associate Professor & HOD Mechanical Department and faculties of mechanical department. Around 10 teams were participated out of that two teams entered into finials. The final match was in between Team Crank Shaft Kalavidharu 7th B v/s Team Centrifugal Sixers 7th C. on 27th JAN finials were conducted and the battle b/w two teams were exited finally Team Crank Shaft Kalavidharu 7th B become a winners of mecho cup and Team Centrifugal Sixers 7th C become runner up. After match the prize was distributed by the HOD of mechanical department Dr. Rudresh Addamani sir. Finally the mehocup was ended with the support of all faculties.

Result of Mecho Cup-2021 Cricket

Winners: Mechanical Marvels (7th C)



Runners: Centrifugal Sixers (5th C)



Gallery







Event 10

A REPORT on “HAND LAY-UP TECHNIQUES”

EVENT: HANDS-ON WORKSHOP

TIME: 10.00 am to 4.00 pm

DATE: 07/02/2023

VENUE: AMP Lab (FF Lab)



DR. HASEEBUDDIN M. R.
Associate Professor

Dayananda Sagar College of Engineering Bengaluru

Department of Mechanical Engineering organized a hands-on workshop on “**HAND LAY-UP TECHNIQUES**” on 07TH FEBRUARY 2023 in AMP Lab (FF Lab). The workshop focused on hand lay-up techniques to prepare a Polymer Matrix Composites (PMC). The programme started at 10:00 am with the welcome address by Dr. Srinivasa M R, Assistant Professor, Dept. of Mechanical Engineering, PESCE, also a brief introduction was given about Resource person. The dignitaries were Dr. Rudresh addamani HOD department of mechanical Engineering, Dr. Sadashiva M Secretary for Mechanical Engineering Association, Dr. Haseebuddin M R, Associate Professor, Department of Mechanical Engineering, Dayananda Sagar College of Engineering Bengaluru-78. The key note address was given by **Dr. Haseebuddin** Resource person. He shared his 15 years of research work experience in field of composites and talked about basics of PMC. He gave several examples in applications of PMC in various industries which have been developed in their lab. The programme wrapped up around 4:00 pm.

PHOTO GALLERY



Dr. HASEEBUDDIN M R being welcomed by the HOD, Dept. of ME.



Token of Appreciation to Dr. Haseebuddin M R by Department of Mechanical Engineering





