

2020-21

Mechzine 2K20

NEWSLETTER

Volume 4

Department of Mechanical Engineering



S.V.S.M.D's

**Kai. Kalayanrao (Balasaheb) Ingale
Polytechnic, Akkalkot**



Mechanical Engineering Department

Welcome



Welcome to the department of Mechanical Engineering. The department is consistently striving hard to offer a quality education in Mechanical Engineering. We are proud to present the Newsletter of Mechanical Engineering Department for the year 2020-21. It summarizes the achievements and progress we have made over the last year to improve our academic offerings and students services. Our faculty is making progress to provide a truly excellent learning environment to the students. We are working hard to create an innovative environment to promote research activity through their projects.

Mr. M. B. Mane

Head of Department

Vision

To nourish the rural youth by technical education favorable to mechanical industries and social excellence

Mission

1. To create awareness of technical education & minimizing the gap between industry and rural youth by industrial visits & internship programs
2. To make the students ready with technology in Mechanical Engineering through workshops
3. To enable the students to overcome the challenges in higher studies & industrial profession by Seminars

Program Educational Objectives (PEOs)

4. To make them eligible for higher education and endless learning
5. To develop employability in technical field.
6. To develop socially responsible professionals.

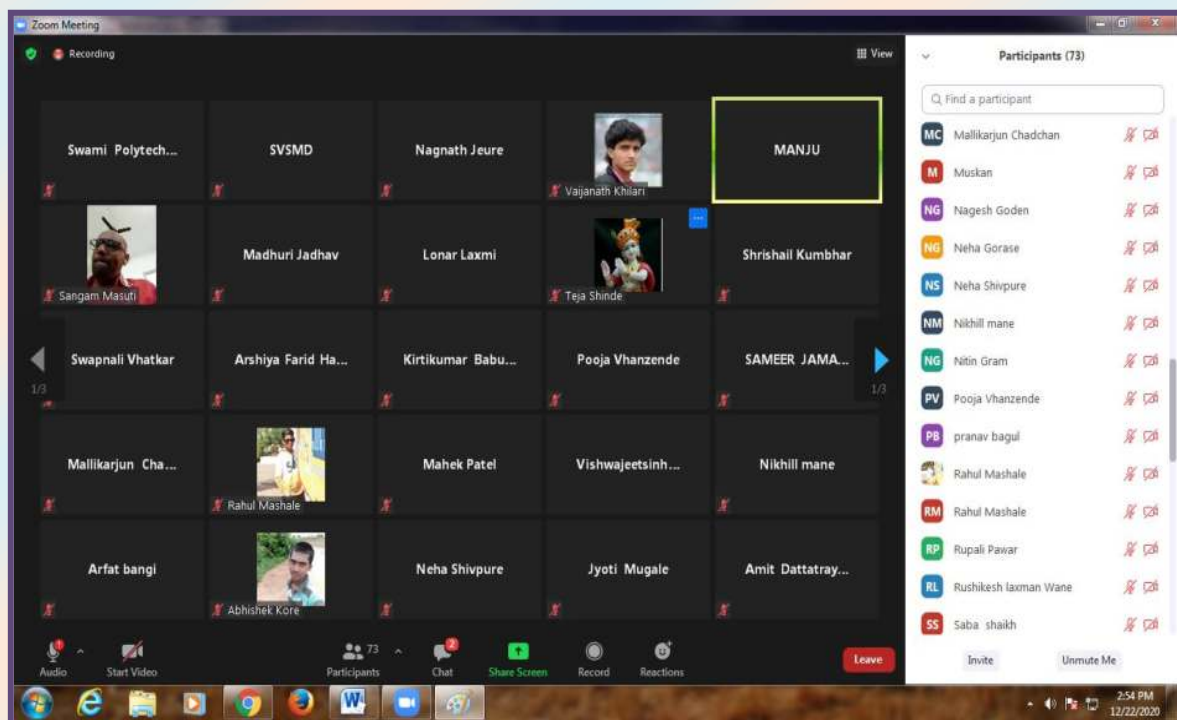
Program Outcomes (POs)

1. **Basic and discipline specific knowledge:** Apply the knowledge of basic mathematics, science and engineering fundamental and engineering specialization to solve the engineering problems.
2. **Problem analysis:** Identify and analyze well-defined engineering problems using codified standard methods.
3. **Design / Development of Solution:** Design solutions for well-defined technical problems and assist with the design of system components or process to meet specified needs.
4. **Design / Development of Solution:** Design solutions for well-defined technical problems and assist with the design of system components or process to meet specified needs.
5. **Engineering Practices for Society, Sustainability and Environment:** Apply appropriate technology in context of society, sustainability, environment and ethical practices.
6. **Project Management:** Use engineering management principals individually, as a team member or a leader to manage projects and effectively communicate about well-defined engineering activities.
7. **Life-long learning:** Ability to analyze individual needs and engage in updating in context of technological changes.

Expert Talks:

We invited various experts to enhance student's technical knowledge as well as overall personality

1. **“Webinar on Entrepreneurship Development”** by Mr. Manju B. H. & Mr. Gavandi S. S. (ICEAS Bangalore) for third year students on 22/12/2020.
2. **“One week workshop on AutoCAD”** by Prof. B.R. Birajdar & Prof. M.B. Awate (NKCOE Solapur) for second year students from 26/04/2021 To 30/04/2021
3. **“Entrepreneurship Development under Start-up schemes”** by Mr. Shaikh Abarar Noor (Hindustan Traders, Akkalkot) for third students on 03/05/2021.



Experts interacting with students

Faculty Achievements:

Workshops/Trainings attended





1. Mr. Bhawthankar A.A. attended Online STTP on “Teaching Learning Pedagogies” organized by A G Patil Polytechnic Institute, Solapur and Approved & Funded by AICTE, New Dehli- AQIS dated from 07/09/2020 to 12/09/2020.
2. Mr. Bhawthankar A.A. attended two days FDP on “Innovative Tools in Online Teaching & Learning Process” organized by SVSMD's KKI Polytechnic, Akkalkot dated from 08/01/2021 to 09/01/2021.
3. Mr. Mane M.B. attended Online STTP on “Teaching Learning Pedagogies” organized by A G Patil Polytechnic Institute, Solapur and Approved & Funded by AICTE, New Dehli- AQIS dated from 07/09/2020 to 12/09/2020.
4. Mr. Mane M.B. attended two days FDP on “Innovative Tools in Online Teaching & Learning Process” organized by SVSMD's KKI Polytechnic, Akkalkot dated from 08/01/2021 to 09/01/2021.
5. Mr. Paramshetti S.C. attended Online STTP on “Teaching Learning Pedagogies” organized by A G Patil Polytechnic Institute, Solapur and Approved & Funded by AICTE, New Dehli- AQIS dated from 07/09/2020 to 12/09/2020.
6. Mr. Paramshetti S.C. attended two days FDP on “Innovative Tools in Online Teaching & Learning Process” organized by SVSMD's KKI Polytechnic, Akkalkot dated from 08/01/2021 to 09/01/2021.
7. Mr. Masuti S.B. attended Online STTP on “Teaching Learning Pedagogies” organized by A G Patil Polytechnic Institute, Solapur and Approved & Funded by AICTE, New Dehli- AQIS dated from 07/09/2020 to 12/09/2020.
8. Mr. Masuti S.B. attended two days FDP on “Innovative Tools in Online Teaching & Learning Process” organized by SVSMD's KKI Polytechnic, Akkalkot dated from 08/01/2021 to 09/01/2021.
9. Mr. Phopale Y.A. attended Online STTP on “Teaching Learning Pedagogies” organized by A G Patil Polytechnic Institute, Solapur and Approved & Funded by AICTE, New Dehli- AQIS dated from 07/09/2020 to 12/09/2020.
10. Mr. Phopale Y.A. attended two days FDP on “Innovative Tools in Online Teaching & Learning Process” organized by SVSMD's KKI Polytechnic, Akkalkot dated from 08/01/2021 to 09/01/2021.
11. Mr. Korshetti V.V. attended Online STTP on “Teaching Learning Pedagogies” organized by A G Patil Polytechnic Institute, Solapur and Approved & Funded by AICTE, New Dehli- AQIS dated from 07/09/2020 to 12/09/2020.
12. Mr. Korshetti V.V. attended two days FDP on “Innovative Tools in Online Teaching & Learning Process” organized by SVSMD's KKI Polytechnic, Akkalkot dated from 08/01/2021 to 09/01/2021.
13. Mr. Ghurghure K.A. attended Online STTP on “Teaching Learning Pedagogies” organized by A G Patil Polytechnic Institute, Solapur and Approved & Funded by AICTE, New Dehli- AQIS dated from 07/09/2020 to 12/09/2020.

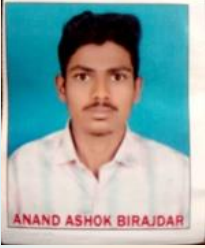




14. Mr. Ghurghure K.A. attended two days FDP on “Innovative Tools in Online Teaching & Learning Process” organized by SVSMD's KKI Polytechnic, Akkalkot dated from 08/01/2021 to 09/01/2021.



Academic Performance:

Winter 2020

COURSE	NAME OF STUDENT	PHOTO	PERCENTAGE	RANK
ME 11	VANYALOLU VISHWESHWAR HANAMANTU		87.00%	1 st
	BENNISUR SAMARTH SATISH		86.43%	2 nd
	POTADAR DATTATRAY SOMNATH		84.71%	3 rd
ME 31	UDAGI AKASH PANDIT		91.05%	1 st

	BIRAJDAR ANAND ASHOK		90.11%	2nd
	KUMBHAR SHRISHAIL RAVINDRA		85.79%	3rd
	LONAR LAXMI SIDDHARAM		88.19%	1st
ME5I	NADAF SAMEER JAVID		87.05%	2nd
	MANE NIKHIL DHANANJAY		86.38%	3rd

Summer 2021

YEAR	1 st RANK	2 nd RANK	3 rd RANK
ME2I	 Vanyalolu Vishweshwar H. (72.67%)	 Dhumal Vishal Amol (71.47%)	 Potadar Dattatray Somnath (70.40%)
ME4I	 Zalaki Rahul Shrimant (83.00%)	 Birajdar Anand Ashok (82.88%)	 Udagi Akash Pandit (82.63%)
ME6I	 Patil Akshay Virendra (85.56%)	 Shaikh Soheb Aalam (83.89%)	 Hawaldar Sakiba H. (83.44%)
TOPPER OF TYME IN A.Y. 2020-21			
TYME	 Patil Akshay V. (85.28%)	 Shaikh Soheb Aalam (84.56%)	 Nadaf Sameer Javid (84.31%)

Placements

Our students are selected by following industries.

Sr. No	Name of Students Selected	Name of Industry Approached for Campus Interview
1	PATIL SWAPNIL SIDDHARAM	RIO Machine Tool Kharbwadi Chakan
2	ALAMAD SIDDHARUDH PRAKASH	Bosch Chassis System India Ltd.
3	PUJARI BEERAPPA REVANAPPA	John Deere Ltd.
4	GURAV KASHINATH SUBHASH	FORCE Motor, PIMPRI
5	JAVALAGI GURANINGAPPA SHIVANNA	Jai Hind Sugar Factory
6	KANOJI BHIMASHANKAR CHIDANAND	John Deere Ltd.
7	SOLAPURE SHIVANAND IRAPPA	John Deere Ltd.
8	SHIVAMURTI YUVARAJ RAJASHEKHAR	BAJAJ AUTO IND LTD PUNE
9	HOTAGI BASAWARAJ KRISHNAPPA	Team Less Education-JCB India Ltd.
10	PATIL BASAVANTARAYA KASHINATH	John Deere Ltd.
11	SHAIKH SOHEB AALAM	John Deere Ltd.
12	MANE NIKHIL DHANANJAY	BAJAJ AUTO IND LTD PUNE
13	POTDAR ROHAN RAJENDRA	DANA India Ltd Pune
14	MUNOLI SHRISHAIL REVANSIDHA	Sunrise Enterprise
15	MANURE BASAWRAJ SHANTAPPA	Sintercom India Ltd.Pune
16	UDACHAN VISHAL GAJANAN	Ajwani infrastructure pvt.ltd
17	KHILARI SURESH BASAVARAJ	MRN Sugar Factory badami
18	BALGANURE NAGESH VITTHAL	VISHWADHAR ENTERPRISE

19	PUJARI VISHWAMBHAR VINAYAK	Viswa Holistic Solutioin Pvt.Ltd. Akkalkot
20	ACHALER PRAJOTKUMAR SHARANAPPA	Reliance Retailer,Chakan
21	PALKAR BRAMHANAND SHRIMANT	Tata Motors Pimpri Pune
22	KOLI BHIMASHA BALAPPA	Olg company of rajangaon pune pvt ltd
23	VHORADE VISHWAJEETSINH VITTHALRAO	Precision Cam Shaft
24	JYOTI RAVIKIRAN DILIPRAO	John Deere .Ltd.

Student Projects:

Pedal Operated Centrifugal Pump

Abstract

In this paper, design and construct pedal operated water pump which used in small irrigation and garden irrigation. The pedal operated pump can be construct using local material and skill. A water system includes a Centrifugal pump operated by pedal power. The pump stand includes a housing in which a foot pedal and a drive shaft rotate. It works on the principle of compression and sudden release of a tube by creating negative pressure in the tube and this vacuum created draws water from the sump. This bicycle pedal operated pumps water at 2-3 gallons per minute from wells and boreholes up to 23 in feet depth. Provides irrigation and drinking water where electricity is not available. They can be built using locally available materials and can be easily adapted to suit the needs of local people. They free the user from rising energy costs, can be used anywhere, produce no pollution and provide healthy exercise. Energy is the primary and most universal measure of all kind of work by human Being and nature. Everything what happen in the world in the expression of flow of energy is one of its forms. Most people use the world energy for input to their bodies or to the machines and thus about fuels and power. Energy is an important input in all sectors of counters economy.

Implemented by

Mr. Sonkamble Prakash P.

Mr. Udachan Vishal G.

Mr. Alamad Siddharudh P.

Mr. Patil Swapnil S.

Under the guidance of

Lect. Korshetti V. V.

Study & Fabrication of Angular Drilling Machine

Abstract

Manual method of seed planting, results in low seed placement, spacing efficiencies and serious back ache for the farmer which limits the size of field that can be planted. The cost price of imported planters has gone beyond the purchasing power of most of our farmers. Pleasant farmers can do much to increase food production especially grains, if drudgery can be reduced or totally removed from their planting operations. To achieve the best performance from a seed planter, the above limits are to be optimized by proper design and selection of the components required on the machine to suit the needs of crops. This project work focused on the design of a manually operated planter sowing for different crop seed that is cheap, easily affordable by the rural farmers, easy to maintain and less laborious to use. The basic requirements for small scale cropping machines are, they should be suitable for small farms, simple in design and technology and versatile for use in different farm operations. A manually operated template row planter was designed and developed to improve planting efficiency and reduce drudgery involved in manual planting method.

Implemented by

Mr. Shaikh Soheb A.

Mr. More Makkuchand Y.

Mr. Mane Nikhil D.

Mr. Hegde Vishwajit N.

Under the guidance of

Mr. Mane M. B.

HOD in ME Department

Tech Art:



Prof. Bhawthankar A.A.
Lecturer in Mechanical Engineering Department

Friction welding

If you rub your palms against each other, you'll observe that your palms will become hot. As you increase the pressure and speed further, you will start feeling warmer. The same principle of heat generation by friction is used in friction welding, where the metal parts are made to rub against each other at extremely high speed and pressure.

This interaction between the two surfaces results in mechanical friction. Even if the two materials to be welded together may seem smooth to the naked eye, there are irregularities at the microscopic level. These irregularities are enough to generate friction between their surfaces.

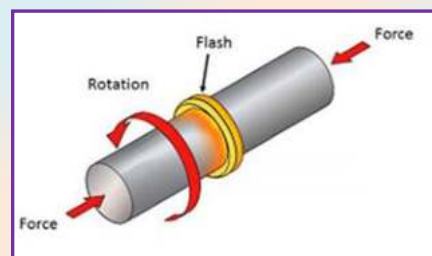
When two materials undergo friction welding, the relative motion between each other, and the pressure applied to them generates heat at the contact points. As the process continues further, the heat generation also rises, and the two materials will start becoming viscous at the contact points. Again, the motion between the two promotes the mixing of the two parts at their contact points, creating a bond or a weld.

Different types of friction welding

Any welding process that uses friction as a way to create the bond can be termed as friction welding. However, there are four types of friction welding processes fundamentally. Let's go through each of them briefly to understand the subtle differences between them.

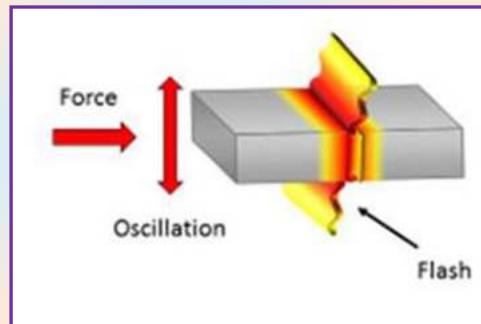
Rotary Friction Welding

Out of the two materials, one is rotated over the surface of the other where the weld is required. The process uses compressive axial force and the high rotation speeds. This combination causes the plasticizing of the two materials, eventually leading to a bond between two.



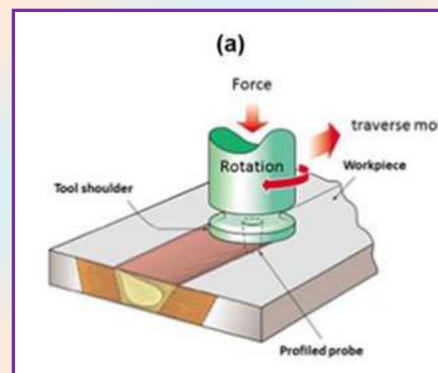
Linear friction welding

In this type of friction welding, one of the materials oscillates in relation with the other at high speeds with high compressive forces in a reciprocating motion. The resulting heat generated at the surfaces causes the metal to plasticize, and the oxides or surface-level contaminants are burned off or expelled at the sides.



Friction Stir Welding

Friction stir welding uses a special tool with a cylindrical shoulder and a profiled pin to create welds. The pin drives along the seam of the two work pieces until the shoulder rests on the seam. The tool then rotates where the friction between the shoulder and the seam softens the metal. The profiled pin is moved linearly through the line of the seam stirring the soft metal and creating a bond in the process.





S.V.S.M.D's



**Kai. Kalyanrao (Balasaheb) Ingale Polytechnic,
Akkalkot**

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Recognized by: Government of Maharashtra
Approved by: Directorate of Technical Education (DTE), Mumbai
**Affiliated to: Maharashtra State Board of Technical Education (MSBTE),
Mumbai**

COURSES OFFERED IN DIPLOMA ENGINEERING

Discipline	Intake Capacity	Duration of Course
Mechanical Engineering	60	3 Years
Electronics and Telecom. Engineering	30	3 Years
Civil Engineering	60	3 Years
Computer Engineering	30	3 Years
Total Intake	180	