

Sakeshwar Gramin Vikas Seva Sanstha's



“विद्या राष्ट्रस्य प्रतिष्ठा”

ADSUL'S TECHNICAL CAMPUS



Approved by AICTE New Delhi | Recognized By Government of Maharashtra DTE

and Affiliated to SPPU, Pune

Accredited by NAAC with B++, ISO 9001:2015 Certified

• DTE CODE:5380 •

MECH INVENTION

/// MECHANICAL ENGINEERING DEPARTMENT MAGAZINE ///



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About Trust

Sakeshwar Gramin Vikas Seva Sanstha established on 24th September 2004 to promote the noble cause of education. The founder member & president of this sanstha is Hon. Prof. Anirudha Manik Adsul. Prof. Anirudha Adsul Sir is well known personality all over Maharashtra in Education field. The work in the field of education which is started 25 year ago under the name of Adsul's classes for 11th and 12th Science students has today been transformed into Adsul's Technical campus (Engineering and MBA) College, and B.Ed. college under the Sakeshwar Gramin Vikas Seva Sanstha. Today 1500+ students from rural areas are studying in in the institute and thousands of pass out students are contributing to the progressive development of country.

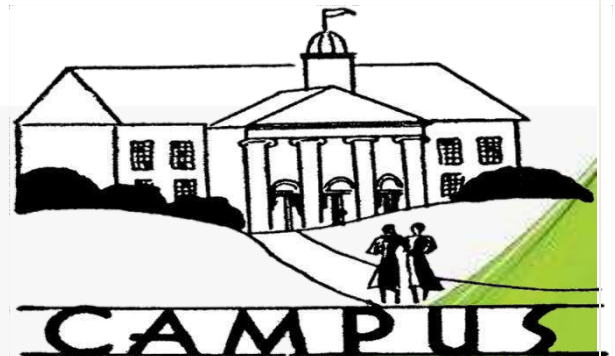


About Adsul's Technical Campus (ATC)

Sakeshwar Gramin Vikas Seva Sanstha Sakeshwar Gramin Vikas Seva Sanstha established on 24th September, 2004 by visionary educationist Prof. Anirudha Manik Adsul with the aim to develop competent, committed and compassionate leaders who will make a difference to the people among whom they work. Sanstha constantly scans the developments in business and in society and tries proactively to meet the challenges.

The founder president of the Sanstha is well known personality all over Maharashtra in the Education field. His work in the field of education started 25 years ago under the name of Adsul's Classes for 11th and 12th Science students has today been transformed into Adsul's Technical campus; Engineering, MBA, Polytechnic, Pharmacy, Arts, Commerce, Science, and B. Ed colleges under the landmark of Savitribai Phule Pune University, Pune.

Today 2500+ students from rural and urban area are studying in the campus and thousands



Editorial Board

Chief Editor : Prof. Mr. Jaware A.R.

Teacher Incharge : Prof. Gaikwad S.A.

Teacher Editor : Prof. Athawale N.V.

Teacher Editor : Prof. Nagargoje U.S.

Students

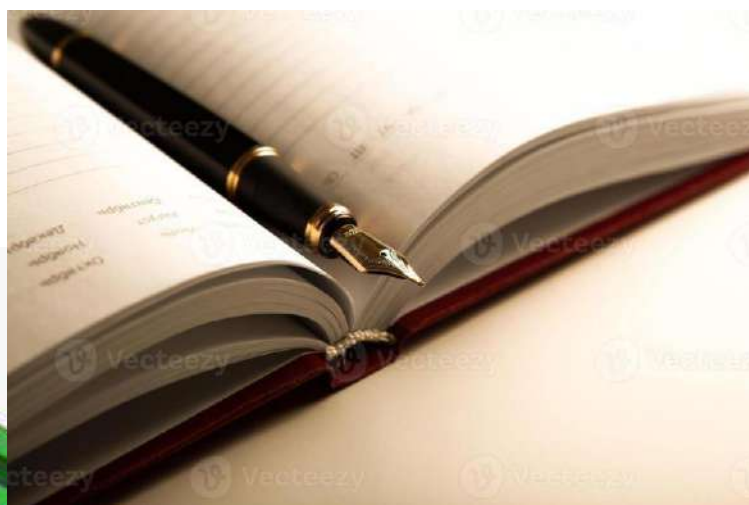
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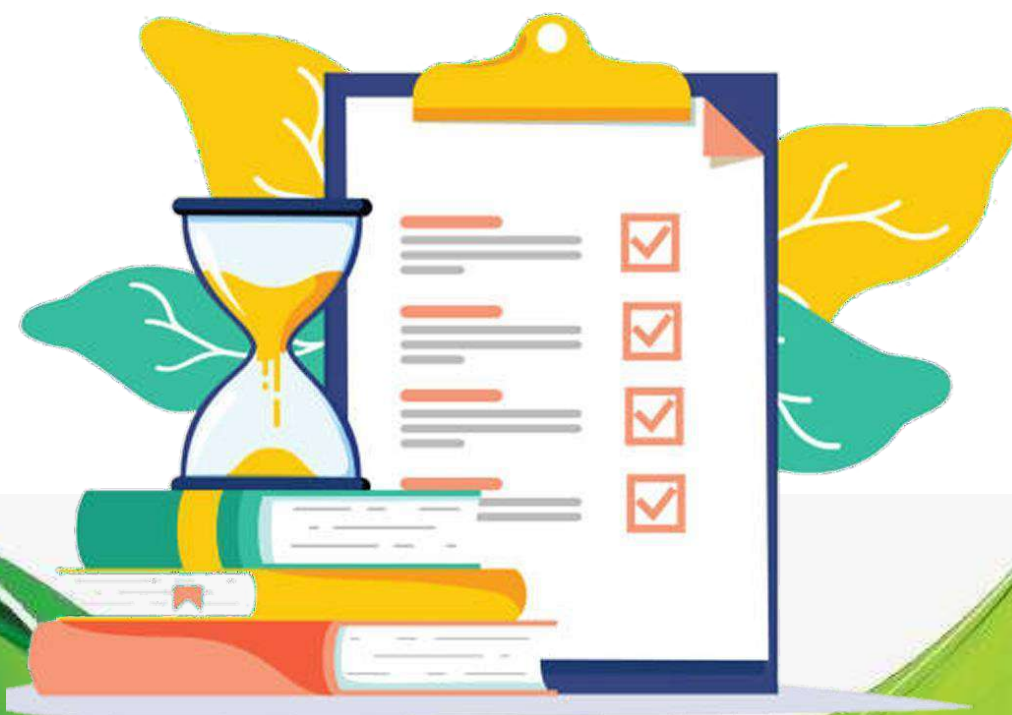
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Chairman's Desk



I am pleased to introduce one of the premier technological institutes in Maharashtra, Adsul's Group of Institutions, established in 2011. Currently, Adsul's Technical Campus in Ahmednagar offers undergraduate programs (B.E.) and postgraduate programs (M.B.A.). The institute features state-of-the-art laboratories in each department.

We have a team of qualified and experienced faculty members who work collaboratively to embrace the latest trends in learning, ensuring quality education for our students. Through this, our students acquire skills that prepare them to take on leadership roles in the field of engineering. In addition to academics, co-curricular activities, including sports, adventure, cultural events, and social service, play a significant role in shaping the lives of our students.

This importance is well indicated in the spread of facilities at the Adsul's campus. All undergraduate, postgraduates students reside on the campus and thereby get full opportunity to participate in co-curricular and extra-curricular activities leading to a holistic personality development. With all the faculty members also residing on the campus, there is a unique, close and family – like relationship between students and teachers. I wish the Institute all the success.

Prof. Anirudha M. Adsul
Chairman
Sakeshwar Gramin Vikas Seva Sanstha

Principal's Desk



I warmly welcome you all to Adsul's Group of Institutions, established in 2011. Currently, Adsul's Technical Campus in Ahmednagar offers undergraduate programs (B.E.) and postgraduate programs (M.B.A.), supported by state-of-the-art laboratories in each department.

We combine discipline with care and support to nurture our students, believing that everyone possesses great potential that can flourish with the right guidance and training. Beyond the standard teaching curriculum, we organize industrial visits and encourage students to pursue internships and field projects.

Additionally, we host lectures on soft skills, personality development, and interview techniques to not only enhance our students' professional abilities but also instill strong human values. Our approachable authorities ensure that any challenges are resolved efficiently, making learning a truly joyful and enriching experience.

Dr. Pradeep. M. Patil
Principal
SGVSS Adsul's Technical Campus

Vision

—To be a premier department in Mechanical Engineering to serve the need of Industry & Society.



Mission

M1 - To Provide state of the art facilities to impart the quality education.

M2 - To undertake various Value-added and add-on courses to make students technically sound and thorough professionals.

M3 - To collaborate with the industries and strive to instill the research and problem—solving attitude amongst students and faculty.

M4 - To inculcate high moral, ethical values, and spirit of national pride amongst students and faculty.



Staff

Sr. No.	Faculty Name	Designation
1	Mr.Jaware A.R.	HOD
2	Dr. Patil N.Y.	Associate Professor
3	Dr. Shirsath G.B.	Assistant Professor
4	Dr.Gadakh R.S.	Assistant Professor
5	Jagtap K.K.	Assistant Professor
6	Gunjal N.L.	Assistant Professor
7	Nagargoje U.S.	Assistant Professor
8	Gaikwad S.A.	Assistant Professor
9	Berad S.T.	Assistant Professor
10	Shinde S.V.	Assistant Professor
11	Athawale N.V.	Assistant Professor



Faculty Achievements

PREVISE YEAR ACHIEVEMENT

Prof. Jaware A.R.

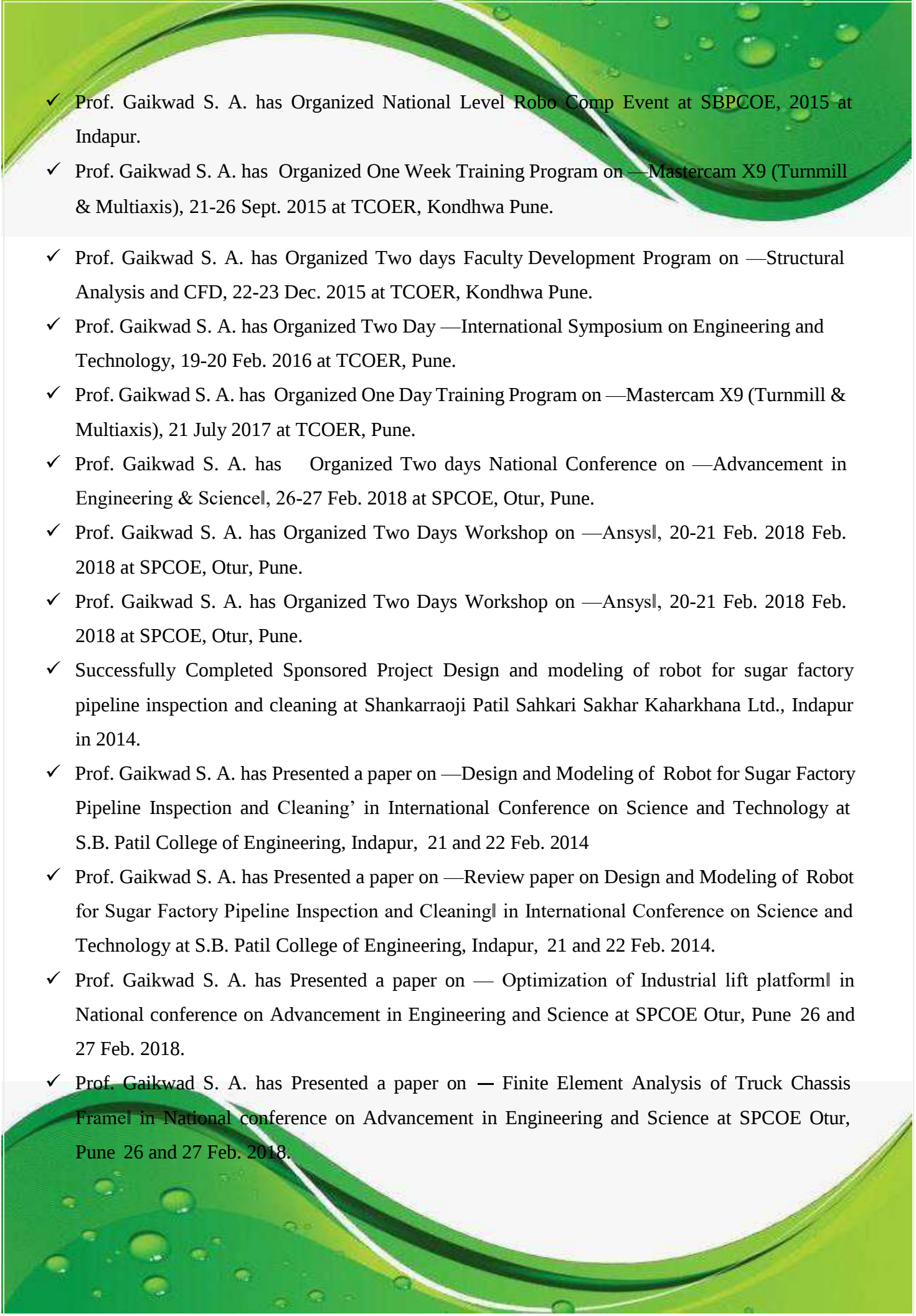
- ✓ A paper on —Vibration Analysis & Weight Reduction for Compressor Mounting Bracket using Composite Materiall, by Prof. Jaware A.R. A. published in international Research journal of Engineering & Technology, IRJET, Vol. 5 Issue 8th August 2018.
- ✓ A paper on —Design & Manufacturing of Fixture For The Casting Cylinder For Reduction Of Operation Timel, by Prof. Jaware A.R. A. published in international Research journal for Research in Engineering Application , IJREAM, Vol. 5 Issue 2018.
- ✓ A paper on —The Onion Bulb Planterl, by Prof. Jaware A.R. A. published in international Research journal for Research in Engineering Application , IJREAM, Vol. 5 Issue 2018.

Prof. Athawle V.N.

- ✓ Performance evaluation of Acetamide as a latent heat storage media in reflecting mirrors equipped Solar air dryer in International Journal of Mechatronics and manufacturing technology, volume 04, issue 01 year 2019.
- ✓ Survey on Latent heat storage media used in solar air dryer for drying agricultural products volume 06, issue 03 year 2019
- ✓ Attained one week faculty development program on new era of manufacturing challenges and opportunities organized by Department of Mechanical Engineering, D.Y. Patil COE,Pune from 25.07.22 to 30.07.22
- ✓ Completed one day FDP on Simulation & Modelling technics in industrial automation , hydraulic, pneumatics & digital CNC held on 11.02.2017 & organized by MIT, Aurangabad
- ✓ Attained two days state level workshop on , —Energy Conservation: Future & Opportunitiesl sponcered by Savitribai Phule university Pune held on 19.01.2017 & 20.01.2017
- ✓ Attended 3days training program on —Mechanical Equipment Maintenancel at RCF, Chembur, Mumbai- 400074 from 25/09/2008 to 27/09/2008.
- ✓ Attended 3 days training program on — Power Plant Familiarization l at Reliance Infra.Ltd 2x250 MW Dahanu thermal power station; Dahanu, Mumbai; from 18/07/2017 to 20/07/2017
- ✓ Attended 5 days training program on —Familiarization of metrological instruments, errors, inspection, GD & Tl at Measurewel Techno vision, Pvt Ltd, Aurangabad, from 06/08/2018 to 10/08/2018.

Prof. Gaikwad S.A

- ✓ Prof. Gaikwad S.A has attended One Day Faculty Development Program on —Computer Aided Machining using Edge-cam Software on 11 Aug. 2017 organized by Department of Mechanical Engineering at Jaihind COE, Kuran, Junnar, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended One Day Training Program on —Mastercam X9 (Turnmill & Multiaxis) on 21 July 2017 organized by Department of Mechanical Engineering at SPCOE, Otur, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended Two Days Faculty Development Program on —CFD & Structural Analysis (Ansys) on 22 Dec. 2015 to 23 Dec. 2015 organized by Department of Mechanical Engineering at Trinity COE & Research, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended One Week Training Program on —Mastercam X9 (Turnmill & Multiaxis) on 21 Sept. 2015 to 26 Sept. 2015 organized by Department of Mechanical Engineering at Trinity COE & Research, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended Two Days Faculty Development Program on —Mastercam X9 - Turnmill & Multiaxis on 29 July 2015 to 30 July 2015 organized by Department of Mechanical Engineering at Zeal COE & Research, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended One Day Workshop on —Syllabus Implementation of CAD/CAM on 21 July 2015 organized by Department of Mechanical Engineering at Zeal COE & Research, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended Two days State Level workshop on —Research Methodologies on 16 Jan. 2015 to 17 Jan. 2015 organized by Department of Mechanical Engineering at Amrutvahini COE, Sangamner, Ahmednagar, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended Two day Workshop on —Master Cam X7 on 30 July 2014 to 31/July 2014 organized by Department of Mechanical Engineering at S.B. Patil Polytechnic, Indapur, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended Two week ISTE Workshop on —Fluid Mechanics on 20 May 2014 to 30 May 2014 organized by Department of Mechanical Engineering at S.B. Patil COE, Indapur, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended Two week ISTE Workshop on —Engineering Mechanics on 26 Nov. 2013 to 06 Dec. 2013 organized by Department of Mechanical Engineering at S.B. Patil COE, Indapur, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended Two day Workshop on —Master Cam (Cam) Softer Program on 02 Aug. 2012 to 03 Aug. 2012 organized by Department of Mechanical Engineering at MIT COE, Kothrud, Pune, Maharashtra.
- ✓ Prof. Gaikwad S.A has attended One day Workshop on —Advances in Production Engineering- Six sigma Methodology on 17/03/2012 organized by Department of Mechanical Engineering at Amrutvahini COE, Sangamner, Ahmednagar, Maharashtra, Maharashtra.

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- ✓ Prof. Gaikwad S. A. has Organized National Level Robo Comp Event at SBPCOE, 2015 at Indapur.
 - ✓ Prof. Gaikwad S. A. has Organized One Week Training Program on —Mastercam X9 (Turnmill & Multiaxis), 21-26 Sept. 2015 at TCOER, Kondhwa Pune.
 - ✓ Prof. Gaikwad S. A. has Organized Two days Faculty Development Program on —Structural Analysis and CFD, 22-23 Dec. 2015 at TCOER, Kondhwa Pune.
 - ✓ Prof. Gaikwad S. A. has Organized Two Day —International Symposium on Engineering and Technology, 19-20 Feb. 2016 at TCOER, Pune.
 - ✓ Prof. Gaikwad S. A. has Organized One Day Training Program on —Mastercam X9 (Turnmill & Multiaxis), 21 July 2017 at TCOER, Pune.
 - ✓ Prof. Gaikwad S. A. has Organized Two days National Conference on —Advancement in Engineering & Sciencell, 26-27 Feb. 2018 at SPCOE, Otur, Pune.
 - ✓ Prof. Gaikwad S. A. has Organized Two Days Workshop on —Ansysll, 20-21 Feb. 2018 Feb. 2018 at SPCOE, Otur, Pune.
 - ✓ Prof. Gaikwad S. A. has Organized Two Days Workshop on —Ansysll, 20-21 Feb. 2018 Feb. 2018 at SPCOE, Otur, Pune.
 - ✓ Successfully Completed Sponsored Project Design and modeling of robot for sugar factory pipeline inspection and cleaning at Shankarraoji Patil Sahkari Sakhar Kaharkhana Ltd., Indapur in 2014.
 - ✓ Prof. Gaikwad S. A. has Presented a paper on —Design and Modeling of Robot for Sugar Factory Pipeline Inspection and Cleaning’ in International Conference on Science and Technology at S.B. Patil College of Engineering, Indapur, 21 and 22 Feb. 2014
 - ✓ Prof. Gaikwad S. A. has Presented a paper on —Review paper on Design and Modeling of Robot for Sugar Factory Pipeline Inspection and Cleaningll in International Conference on Science and Technology at S.B. Patil College of Engineering, Indapur, 21 and 22 Feb. 2014.
 - ✓ Prof. Gaikwad S. A. has Presented a paper on — Optimization of Industrial lift platformll in National conference on Advancement in Engineering and Science at SPCOE Otur, Pune 26 and 27 Feb. 2018.
 - ✓ Prof. Gaikwad S. A. has Presented a paper on — Finite Element Analysis of Truck Chassis Framell in National conference on Advancement in Engineering and Science at SPCOE Otur, Pune 26 and 27 Feb. 2018.

Tree Plantation



Quiz Competition “Aptitude Test”



EXPERT LECTURE



SPORTS DAY



Academic Toppers



Final Year
KAWALE SANTOSH



Third Year
WARDULE RUPALI
VISHWANATH

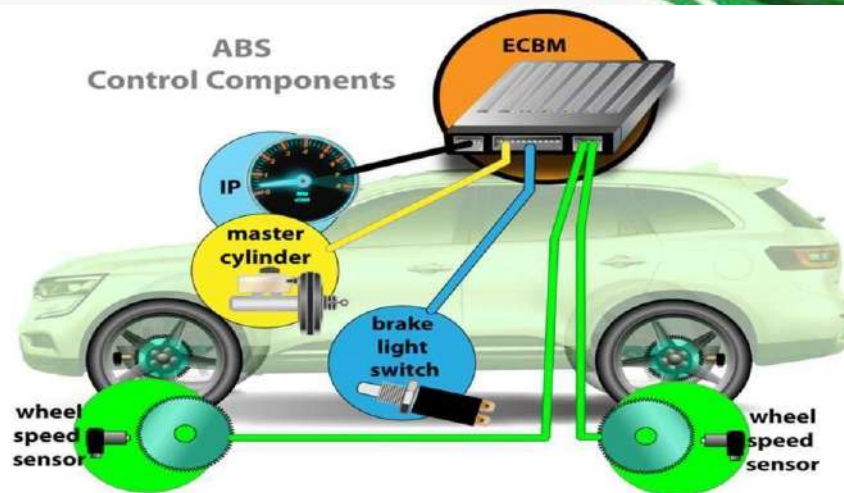


Second Year
THOMBARE MAYUR
MANJABAPU

Students Achievements

Sr. No.	Activity Name	Date	Organized By	Participants (No. of Students)
1	Online Technical Quiz	28/08/2022	Siddhant College of Engineering, Sudumbare, Pune.	32
2	CAD Modelling Competition	25/09/2022	Sharadchandra college of Engineering, Otur, Pune	27
3	Project Exhibition	16/02/2023	Vishwabharti Academy's College of Engineering, Ahemadnagar	44

Articles by students



The Role of ABS in Modern Vehicles

In modern automotive technology, the Anti-lock Braking System (ABS) has become a standard feature, ensuring safer driving by preventing wheels from locking during braking. ABS enhances vehicle control, reduces stopping distances on slippery surfaces, and significantly improves overall road safety.

How ABS Works

ABS is a safety mechanism designed to maintain traction between the tires and the road during hard braking scenarios. The system uses sensors to monitor the rotational speed of each wheel. If it detects that a wheel is about to lock up, ABS momentarily reduces the braking force applied to that wheel, preventing it from skidding. This process happens in rapid cycles, allowing the driver to maintain steering control while braking effectively.

Key Components of ABS

1. **Speed Sensors:** These sensors are installed on each wheel to monitor rotational speed.
2. **Electronic Control Unit (ECU):** The ECU processes data from the sensors and decides when to intervene.
3. **Hydraulic Valves:** These control the brake pressure applied to each wheel.
4. **Pump:** The pump restores the pressure to the braking system when the hydraulic valves release it.

Benefits of ABS

1. **Enhanced Safety:** ABS reduces the risk of accidents caused by skidding, particularly on wet or icy roads.
2. **Improved Control:** It allows drivers to steer while braking, which is critical in avoiding obstacles.

3. **Shorter Stopping Distances:** On many surfaces, ABS decreases the distance needed to come to a complete stop.

4. **Adaptability:** Modern ABS systems are integrated with other technologies like Electronic Stability Control (ESC) for added safety.

Types of ABS

1. **Four-channel, four-sensor ABS:** The most advanced type, offering independent control of each wheel.
2. **Three-channel, three-sensor ABS:** Common in pickups and SUVs, where each front wheel has a sensor, and the rear wheels share one.
3. **One-channel, one-sensor ABS:** Found in older vehicles, typically controlling both rear wheels.

Common Myths about ABS

Despite its benefits, ABS is sometimes misunderstood. For instance:

Myth: ABS guarantees shorter stopping distances in all conditions.

Fact: While it often reduces stopping distances, on loose gravel or snow, ABS may slightly increase braking distances to prevent skidding.

Myth: ABS replaces careful driving.

Fact: ABS complements, but doesn't replace, safe driving practices.

Conclusion

ABS is a crucial innovation in vehicle safety, offering drivers increased control and reducing the risk of accidents. As automotive technology evolves, ABS continues to integrate with advanced systems, further enhancing its capability. For drivers, understanding how ABS functions and using it correctly can make the difference between a close call and a collision.



WAGH AJAY ASHOK
(SE 2022-23)

NANOTECHNOLOGY

Applications of Nanotechnology

1. Medicine:

Nanotechnology has immense potential in the medical field. Nanoparticles can be engineered to deliver drugs directly to a specific target within the body, such as cancer cells, while minimizing side effects. This type of "targeted drug delivery" can significantly improve the efficacy of treatments. Nanomaterials are also being explored for use in imaging, diagnostics, and even regenerative medicine, where they may help in repairing or replacing damaged tissues.

Additionally, "Nano-medicine" refers to the use of Nano scale materials to develop diagnostic tools, new drug delivery systems, or even techniques for early detection of diseases like cancer, heart disease, or neurological disorders.

2. Electronics:

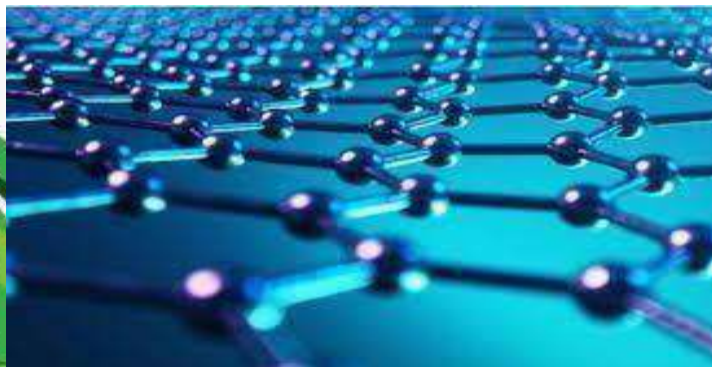
In the electronics industry, nanotechnology is being used to create faster, smaller, and more efficient devices. Nano scale materials like carbon nanotubes and graphene offer exceptional conductivity and mechanical strength, making them ideal for creating advanced transistors, memory devices, and sensors. As semiconductor manufacturing approaches its limits in traditional microelectronics, nanotechnology offers a promising path for continuing the trend of miniaturization.

Quantum dots, a type of nanomaterial, are used in the production of high-quality displays and have applications in computing, lighting, and solar energy. These materials can emit light of specific wavelengths, leading to the creation of more energy-efficient displays and lighting solutions.

3. Energy:

Nanotechnology is revolutionizing the energy sector by improving the efficiency of renewable energy sources like solar cells, batteries, and fuel cells. Nanomaterials such as nanowires, Nano rods, and quantum dots are being utilized to enhance the performance of solar panels, making them more efficient at converting sunlight into electricity.

In the field of energy storage, nanotechnology is contributing to the development of advanced batteries and supercapacitors that have higher storage capacities and faster charge times compared to traditional technologies. These innovations could significantly improve the performance of electric vehicles and renewable energy systems.





4. Environmental Applications:

Nanotechnology also holds promise in addressing environmental challenges. Nano-sized materials are being used in the development of efficient filters for water and air purification, helping to remove pollutants and toxins. For example, nanomaterials can absorb heavy metals from contaminated water, providing a cost-effective and environmentally friendly solution for water treatment.

Additionally, nanotechnology can play a role in environmental remediation, such as cleaning up oil spills or toxic chemical contamination, by using nanoparticles that can break down pollutants or help in the extraction of valuable materials from waste.

Challenges and Ethical Considerations

While the potential of nanotechnology is vast, it is not without challenges. One of the primary concerns is the safety of nanomaterials. Due to their tiny size, nanoparticles can behave differently from their bulk counterparts, and their interactions with biological systems are not yet fully understood. There is also the issue of regulation. As the field is evolving rapidly, regulators must work to ensure that nanomaterials are tested for safety before they are widely used in consumer products. Governments and international bodies are working to develop standards for testing and regulation, but many scientists argue that there is a need for more comprehensive policies to address the unique risks associated with nanotechnology.

Ethically, the power of nanotechnology to manipulate matter at such a small scale also raises questions about its potential for misuse. It is vital for researchers, policymakers, and society as a whole to consider the ethical implications of these advancements.

The Future of Nanotechnology

Nanotechnology is poised to continue transforming a wide array of industries and our daily lives. As research progresses and new materials and techniques are developed, it's likely that we will see even more breakthroughs in fields such as medicine, electronics, and energy. In conclusion, nanotechnology represents a frontier of science that holds immense promise for improving quality of life, creating new industries, and solving complex global challenges. However, with its potential comes a responsibility to address safety concerns, ethical issues, and regulatory frameworks to ensure that its benefits are realized in a responsible and sustainable manner. As we continue to explore the Nano scale world, the possibilities for innovation are virtually limitless.

Thombare Mayur Manjabapu
(SE 2022-23)

