Shri. Balasaheb Mane shikshan prasarak mandal Ambap's
ASHOKRAO MANE POLYTECHNIC
Vathar Tarf Vadgaon, Tal- Hatkanangle, Dist- Kolhapur 416112
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
NEWSLETTER
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INNOVATION AND FUTURE

INSIGHTS...

EDITORIAL TEAM

CHIEF - EDITOR
Mr. N. Y. Patil

EDITORIAL COMMITTEE
Mrs. J. S. Mali
Mrs. N. P. Chougule

ABOUT INSTITUTE

Shri Balasaheb Mane shikshan prasarak mandal Ambap's, Ashokrao Mane polytechnic (AMPV) was established in 2008 and is located near Kolhapur. This institute has AICTE approval for the seven diploma courses. Under the visionary leadership and administration, AMPV has emerged as a leading technological institute and is perfect destination for quality technical education. The institute has NBA accredited programmes, 100% placement in MNCs, best academic results well established labs. The institute has also been honored with notable awards.

VISION

Achieve excellence in quality technical education to create competent technocrats with ethical and social responsibilities for the betterment of society.

MISSION

M1. To provide scholarly and vibrant learning environment that enables students to achieve professional growth.
M2. To impart quality technical education with emerging technology to fulfill industrial requirements.
M3. To develop culture for holistic development of an individual, inculcating social as well as ethical responsibilities.
M4. To strengthen relationship with industries for empowering the students to work in adverse conditions.

ABOUT DEPARTMENT

The department of applied science & humanities is the foundation stone of all diploma courses. It consists of four distinct wings: Physics, Chemistry, Mathematics and English. The department has well - equipped laboratories of Physics, Chemistry and English. The language laboratories made for offering a unique training of soft skills in English is the cheap attraction of not only the department but also of the college. This, being a base department, has highly qualified staff who offer quality education to empower and uplift the message morally, culturally and socially.

MESSAGE FROM THE PRINCIPAL'S DESK

Dr. Y. R. Gurav
Principal
Ashokrao Mane Polytechnic

Dear Readers,

The Department, which has been an integral part of the college ever since its inception offering instruction in Mathematics, Physics and Chemistry to students of the various core branches of engineering, is devoted to foster the understanding of basic scientific principles. The academic programs of this department are designed to meet the requirements of the fast-growing technology. The Department offers several educational programs for undergraduate students.

The overriding objectives of these programs are,

- To build a strong foundation of basic science for engineers and understand science at work.
- To lay strong foundation at the first year stage so that the grasp of engineering streams becomes easily accessible. The clarity of concepts in pure sciences go a long way to help them in engineering streams. To improve communication skills of students as per the industrial needs.
- To understand applications of basic science, so that technology and their advancements can be understood and applied. To build an ability to understand and interpret the impact of engineering solution for society.

MESSAGE FROM THE HOD'S DESK

Mr. N. Y. Patil
HOD
Applied Science & Humanities

Dear Readers,

The major role of Applied Science & Humanities Department is to build a strong foundation for first year diploma engineering students and enhance their basic knowledge of Engineering. The Department comprises of four wings namely Physics, Chemistry, Mathematics and English Communication Skills. Well experienced and highly qualified faculty members of the department are consistently dedicated towards the progress and development of students and this objective is achieved through continuous improvements in the management practices adopted in teaching and learning processes. The department continuously adopts and implements development, evaluation, and monitoring systems, alongside robust faculty development programs.

Annual Sports 2K25

The Students of Applied Science & Humanities Department **participated and won different prizes** in Annual Sports 2k25 which was designed to encourage physical activity and team spirit among students and staff. This event was featured with various sports such as football, Carrom, badminton, and track and field. Participants competed in teams, representing different classes or groups within the department. The aim of this event was to foster camaraderie, enhance physical fitness, and provide a break from academic routines.

Annual Social Function 2K25

The Students of Applied Science & Humanities Department enthusiastically celebrated Traditional Day at Ashokrao Mane Poytechnic, Vathar Tarf Vadgaon. The Theme of Traditional Day was **"Khandoba- Waghyamurali"**.

The Students of Applied Science & Humanities Department participated in Cultural Program Yuva Tarang 2K25 at Ashokrao Mane Poytechnic, Vathar Tarf Vadgaon. They gave remarkable performance in **"Funny Group Dance Performance"**.

Reflex 2K25

Applied Science And Humanities Department arranged Quiz Competition in Reflex 2K25 On 11th March 2025 for the polytechnic Students in pune region .

Guest Lecture

Applied Science & Humanities Department arranged Guest Lecture on topic **"Spandane Yuva Manachi"** on 5th Feb. 2025, in association with Vishakha committee for all diploma girls and ladies staff of Ashokrao Mane Polytechnic, Vathar.

Applied Science & Humanities Department arranged Guest Lecture on topic **"Importance of Soft Skills in Successful Career"** On 30th Jan. 2025 for first year diploma students of Ashokrao Mane Polytechnic, Vathar

Applied Science & Humanities Department of Ashokrao Mane Polytechnic, Vathar organized a guest lecture for first year students on topic **"Noise Pollution : regulation & Control"** on 18th Feb. 2025

FACULTY SPEAKS

LI -FI

Mrs. N. R. Patil
Lecturer

LiFi technology will allow us to connect to the internet using light from lamps, streetlights or LED televisions. In addition to being cheaper, safer and faster than wifi, it does not need a router. All you need to do is point your mobile or tablet towards a light bulb to surf the web. LiFi (light fidelity) is a bidirectional wireless system that transmits data via LED or infrared light. It was first unveiled in 2011 and, unlike wifi, which uses radio frequency, LiFi technology only needs a light source with a chip to transmit an internet signal through light waves.

This is an extraordinary advance over today's wireless networks. LiFi multiplies the speed and bandwidth of wifi, 3G and 4G. The latter have a limited capacity and become saturated when the number of users surfing increases, causing them to crash, reducing speeds and even interrupting the connection. With LiFi, however, its band frequency of 200,000 GHz, versus the maximum 5 GHz of the wifi, is 100 times faster and can transmit much more information per second. A 2017 study by the University of Eindhoven obtained a download rate of 42.8 Gbit/s with infrared light with a radius of 2.5 metres, when the best wifi would barely reach 300 Mbit/s. give this information in marathi Li-Fi (Light Fidelity) is an advanced wireless communication technology that uses visible light to transmit data, offering a faster and more secure alternative to traditional Wi-Fi, which relies on radio waves. Li-Fi operates by modulating the intensity of LED light bulbs at extremely high speeds—too fast for the human eye to detect. These light signals are then captured by a photodetector and converted into electronic data. This system allows for ultra-fast data transmission, with laboratory speeds recorded up to 224 Gbps. One of the major advantages of Li-Fi is its enhanced security; since light cannot pass through walls, it limits signal leakage and unauthorized access. It also reduces electromagnetic interference, making it suitable for sensitive environments like hospitals and airplanes. Additionally, Li-Fi is energy-efficient, as it can use existing LED lighting infrastructure without needing extra power sources. However, it does come with challenges such as requiring a clear line of sight between transmitter and receiver, and potential interference from ambient light like sunlight.

WATER FROM AIR

Mr. P. P. Hirve
Lecturer

Today, 2.2 billion people in the world lack access to safe drinking water. In the United States, more than 46 million people experience water insecurity, living with either no running water or water that is unsafe to drink. The increasing need for drinking water is stretching traditional resources such as rivers, lakes, and reservoirs. To improve access to safe and affordable drinking water, MIT engineers are tapping into an unconventional source: the air. The Earth's atmosphere contains millions of billions of gallons of water in the form of vapor.

If this vapor can be efficiently captured and condensed, it could supply clean drinking water in places where traditional water resources are inaccessible.

With that goal in mind, the MIT team has developed and tested a new atmospheric water harvester and shown that it efficiently captures water vapor and produces safe drinking water across a range of relative humidities, including dry desert air.

The new device is a black, window-sized vertical panel, made from a water-absorbent hydrogel material, enclosed in a glass chamber coated with a cooling layer. The hydrogel resembles black bubble wrap, with small dome-shaped structures that swell when the hydrogel soaks up water vapor. When the captured vapor evaporates, the domes shrink back down in an origami-like transformation. The evaporated vapor then condenses on the the glass, where it can flow down and out through a tube, as clean and drinkable water. The system runs entirely on its own, without a power source, unlike other designs that require batteries, solar panels, or electricity from the grid. The team ran the device for over a week in Death Valley, California, the driest region in North America. Even in very low-humidity conditions, the device squeezed drinking water from the air at rates of up to 160 milliliters (about two-thirds of a cup) per day. The team estimates that multiple vertical panels, set up in a small array, could passively supply a household with drinking water, even in arid desert environments. What's more, the system's water production should increase with humidity, supplying drinking water in temperate and tropical climates.

STUDENT SPEAK

AIR -INK

Mr. Viraj Powar
Student, First Year
AIML Dept.

The last few decades, Asia has grown exponentially, but this growth has come at a cost of air pollution due to increase in carbon-footprint. AIR-INK is the first ink made entirely out of air pollution. After capturing air pollution through pilot trials of KAALINK and other pollution sources the carbon rich pollutants are converted into tools for art. Research has shown that many premature deaths are directly related to soot in the environment. Our vision is to arrest the urban PM air pollution in a way that it doesn't reach our lungs or waste streams.

The process of creating AIR-INK carefully ensures that the end product is safe-to-use. The pollutants which could have been in the lungs of millions of people, or mixed into our water, land streams are now beautifully resting as art

HISTORY : Anirudh Sharma, the founder of Graviky Labs, first conceived the idea of Air Ink in 2013 after he and his friends observed that his clothes were being stained by air pollution. Sharma and his team spent close to three years researching how to purify and repurpose carbon soot from auto emissions, a major contributor to air pollution.In 2013, the Fluid Interfaces research group, at the Massachusetts Institute of Technology demonstrated the process of converting carbon residue into ink for use in an inkjet cartridge. In 2016, Air Ink products were given to graphic artists in Hong Kong, which is known for its high air pollution who were requested to paint murals. An artist, who participated in this campaign, said of the product, "genius, and deserves a chance."

FEATURES ➢ Every 45 min worth of car emissions- 30 ml of ink.

➢ 600 ml spray- holds the equivalent of 2000 hrs of pollution.

➢ Kaalink can even fit over the polluting mouths of boats, chimneys and cranes.

➢ Each device can collect up to 95% of pollutants.

FUTURE SCOPE : In future the overall air pollution will be controlled and health problems which are caused by air pollution like premature death, heart attacks, and strokes, bronchitis and aggravated asthma among children will be reduced.

CONCLUSION : It will be the best for controlling air pollution in environment and best for living things to protect the health.

INDUSTRY EXPERT SPEAKS

Dear Readers,

In today's fast-paced digital world, cybersecurity is not just a technical challenge; it's a societal need. With an increasing reliance on technology, every generation faces unique.

so than today's hyper-connected population. This newsletter highlights the critical aspects of cybersecurity that are shaping the future and the measures we must take to stay secure. Cyberattacks have grown in sophistication, with ransomware-as-a-service (RaaS) and AI-driven malware becoming prevalent. Understanding these threats is critical to protecting personal and organizational data. Internet of Things (IoT): IoT devices are a double-edged sword, offering convenience but also increasing attack surfaces. While they help identify threats, they can also be exploited to launch more sophisticated attacks. Striking a balance between innovation and user privacy remains a pressing issue. The importance of compliance with laws like GDPR and CCPA is more significant than ever. The shift to remote work has opened up new vulnerabilities, requiring robust endpoint security, secure VPNs, and zero-trust architectures. There's a growing need for cybersecurity professionals. Upskilling the current workforce and inspiring the next generation of ethical hackers is crucial. Support research initiatives focused on developing new cyber security technologies and techniques for AI systems.

Mr. Mayuresh Patil

LTI Mindtree

Specialist Software Engineering

Dear Readers,

As we continue toadvance in the field of Artificial Intelligence (AI), the need for robust cyber security measures has become more pressing than ever.

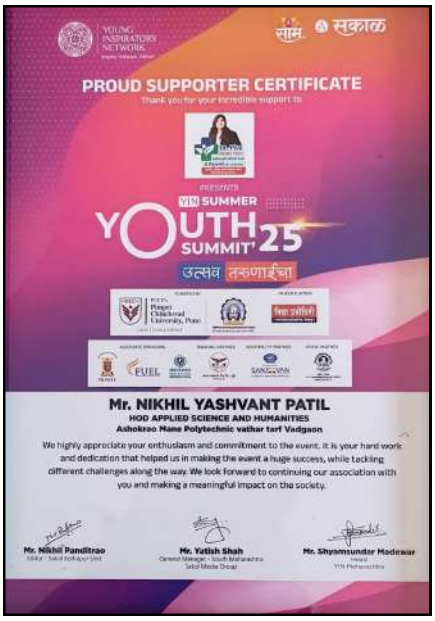
The increasing reliance on AI and machine learning (ML) has opened up new vulnerabilities that threat actors are eager to exploit. Data Poisoning in AI systems can be compromised by feeding them manipulated data, leading to biased outcomes and decisions. Model Inversion Attacks in Hackers can reverse-engineer AI models to gain access to sensitive data and intellectual property. Adversarial Attacks in Malicious actors can craft inputs that cause AI systems to misbehave or make incorrect decisions. 1. Financial Losses in Cyber attacks on AI systems can result in significant financial losses, damage to reputation, and legal liabilities. Compromised Safety in industries like healthcare, transportation, and energy, compromised AI systems can have catastrophic consequences for human safety. Erosion of Trust in as AI becomes more pervasive, cyber attacks can erode public trust in these technologies, hindering adoption and innovation. Implement Robust Security Measures in Develop and implement comprehensive security protocols for AI systems, including data encryption, access controls, and anomaly detection. Conduct Regular Security Audits in Perform regular security audits and penetration testing to identify vulnerabilities and address them before they can be exploited.

Mr. Ninad Kukdolkar

Infosys

Senior Consultant

FACULTY ACHIVEMENT



STUDENT ACHIVEMENT'S

CO- CURRICULUM ACTIVITY

FY Electronics & Computer Engineering Students Anushka Kumbhar & Chaitrali Devakule secured 2nd Rank in Quiz Competition of Reflex 2K25.

EXTRA CURRICULUM ACTIVITY

FY Students - Winner of Kabbadi Inter Zonal BI (IEDSSA) Level Competition

First Year Students - Winner In Kho-Kho

First Year Students - Runner Up In Cricket

FY CO Student Samiksha Mane - Runner Up In Chess Competition

FY ECO Chautrali Devkule - Runner Up In Shot Put competition

FY AIML Prem Koparde - Winner In Running Competition

FY ECO Sakshi Kesarkar - Runner Up In Jawelling Through

FY ECO Anushka Kumbhar - Winner In Mehandi Competition

FY CO Diksha Biraje - Runner Up In Mehandi Competition

ACADEMIC TOPPERS

Computer Engineering

Kamble
Prajwali
90.71%

Dixit
Sakshi
88.82%

Chavan
Prajakta
87.77%

Mechanical Engineering

Patil
Sharyu
87.65 %

Sutar
Najiya
82.47%

Mane
Gaurav
81.77%

Electronics and Computer Engineering

Kumbhar
Anushka
88.71%

Dalavi
Shubham
87.41%

Kulkarni
Aditya
85.53%

Electrical Engineering

Chougule
Prajakta
91.53%

Khot
Soniya
89.65%

Hajarat
Samir
82.35%

Civil Engineering

Powar
Suhas
81.53%

Bhopale
Riya
75.65%

Patil
Prem
75.00%

Automobile Engineering

More
Shreevaradhan
79.29 %

Jamadar
Aarju
77.41%

Kole
Krishna
76.71%

Artificial Intaligence & Machine Learning

Sutar
Mayuri
86.94%

Powar
Viraj
86.47%

Gaikwad
Prajwal
85.88%

Success Stories

Vikas Sutar
Alumini 2023-24

I am Vikas Sutar a student of APMV, 2023-24 batch. I will always be grateful and proud to have been a student of APMV, as it played a key role in helping me achieve my dream of joining Technimont Engineering Pvt. Ltd. Mumbai Renowned MNC. Without the guidance and blessings of my teachers, this would not have been possible. I am truly thankful to N. R. Patil Ma'am, Nangre Sir, Yadav sir, V. A. Patil sir, N. Y. Patil sir, P. S. Patil sir and all the lab assistants for their unwavering support.

My teachers motivated me to take part in paper presentation competitions, which greatly boosted my confidence and helped me hone my presentation skills. They also encouraged me to create a YouTube channel, which allowed me to share my knowledge and passion with a wider audience. Additionally, I had the privilege of serving as President, a role that taught me invaluable leadership and management skills, and helped me understand the importance of organization and teamwork.

I really enjoyed my three years of journey here, filled with learning, fun, and challenges. It has been an unforgettable experience, and I am forever thankful for everything this college has given me.

THEME FOR NEXT ISSUE

Science Technology & Society

The responsibility of the authenticily of the information in this newsletter lies with the author. views expressed by the author are solely theirs they are neither the views of Applied Science & Humanities Department nor are they endorsed by Applied Science & Humanities Department. Queries, comments, feedback and information may be sent to ampappsci@gmail.com Edited printed and published by Mr.P. M. Patil , HOD. First year department. Ashokrao Mane Polytechnic. Vathar Tarf Vadgaon . (416112) website - www.amietv.org