

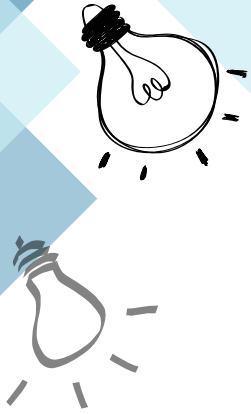
**2022-23 EVEN SEM**

**ENLIGHTEN**

**E-NEWSLETTER**

**DEPARTMENT  
OF  
ELECTRICAL  
ENGINEERING**

**VES Polytechnic**



## VISION

**To produce professionally competent Electrical diploma graduates capable to work ethically in consonance with technological demands of industry and society.**



## MISSION

**To impart and practice latest technologies related to Electrical Engineering prevalent in Industry.  
To develop relevant cognitive and psychomotor compliance in individuals.  
To inculcate ethical education capable of working in a multidisciplinary work environment, fostering societal responsibilities and developing entrepreneurial and leadership skills**



# APFC PANEL

An Automatic Power Factor Correction (APFC) panel is an electrical control system used in industrial and commercial applications to improve the power factor of a facility. Here's a brief summary of what an APFC panel is and its key functions:

1. **Purpose:** The primary purpose of an APFC panel is to maintain or improve the power factor of a power distribution system. Power factor is a measure of how effectively electrical power is being converted into useful work output. A high power factor (close to 1) indicates efficient power utilization, while a low power factor signifies inefficiency.
2. **Components:** An APFC panel typically consists of the following components:
  - **Capacitor Banks:** These are banks of capacitors that are switched on or off as needed to provide reactive power to the system.
  - **Microcontroller/Controller:** A central controller or microcontroller is used to monitor the power factor and control the switching of capacitors.
  - **Measurement Devices:** Sensors and meters are used to measure the current power factor, voltage, and other electrical parameters.
  - **Switchgear:** Electrical switches, contactors, and protection devices are used to control the connection of capacitors to the system.
3. **Operation:** The APFC panel continuously monitors the power factor of the electrical load. When it detects a drop in power factor, indicating a lagging phase angle between current and voltage, it automatically switches in the required capacitors to compensate for the lagging reactive power. Conversely, if the power factor becomes leading, the panel may disconnect capacitors to prevent overcorrection.
4. **Benefits:**
  - **Energy Efficiency:** APFC panels help reduce electricity consumption by improving power factor, which leads to lower losses in the electrical distribution system.
  - **Cost Savings:** Improved power factor can result in reduced penalties imposed by utilities for poor power factor.
  - **Equipment Protection:** APFC panels can enhance the lifespan of electrical equipment by reducing voltage drops and overheating.
5. **Applications:** APFC panels are commonly used in industries with inductive loads like motors, transformers, and fluorescent lighting. They are also employed in commercial buildings, data centers, and other facilities where maintaining a good power factor is important.
6. **Maintenance:** Regular maintenance of the APFC panel is essential to ensure proper functioning. This includes checking and testing capacitors, controllers, and measurement devices for accuracy and reliability.

In summary, an APFC panel is a vital component in electrical distribution systems, helping to optimize power factor, reduce energy consumption, and improve the overall efficiency of the electrical infrastructure.



**Automatic Power Factor Correction (APFC) panels offer several advantages in today's industrial and commercial settings due to their ability to improve power factor. Here are some of the key advantages of using APFC panels:**

**Energy Efficiency:** APFC panels help improve power factor by reducing reactive power consumption. This leads to more efficient utilization of electrical energy, resulting in lower electricity bills.

**Cost Savings:** By maintaining a high power factor, businesses can avoid penalties imposed by utilities for having a poor power factor. APFC panels can save money by mitigating these penalties.

**Optimized Electrical Distribution:** APFC panels enhance the quality of electrical power by reducing voltage drops and line losses. This results in better voltage stability and reduced equipment wear and tear.

**Increased Capacity:** A higher power factor means that electrical systems can handle more loads without exceeding their rated capacity. This can delay the need for costly infrastructure upgrades.

**Reduced Carbon Footprint:** Improving power factor reduces the overall energy consumption, which, in turn, decreases the carbon emissions associated with electricity generation. This aligns with sustainability and environmental goals.

**Improved Equipment Lifespan:** APFC panels help prevent overheating and voltage fluctuations, extending the lifespan of electrical equipment such as motors and transformers. This reduces maintenance and replacement costs.

**Enhanced Power Quality:** APFC panels contribute to better power quality by minimizing voltage sags and harmonics, which can disrupt sensitive electronic equipment and processes.

**\*\*Remote Monitoring and**

# PROTECTION OF TRANSMISSION AND DISTRIBUTION LINES

Protecting transmission and distribution lines is crucial to ensure the reliability and safety of electrical power supply. Several measures and devices are employed to safeguard these lines. Here are some key aspects of the protection of transmission and distribution lines:

- 1. Overcurrent Protection:** Overcurrent relays and devices are used to detect excessive current flow in a line. They can operate circuit breakers to isolate faulty sections of the line, preventing damage and minimizing downtime.
- 2. Distance Protection:** Distance relays measure the impedance between the relay location and the fault point. If the impedance falls below a predetermined threshold, indicating a fault, the relay activates protective measures like tripping circuit breakers.
- 3. Differential Protection:** Differential relays compare the current entering and leaving a protected zone (e.g., a transformer or a line). If there is a mismatch, suggesting a fault within the zone, the relay operates to isolate the fault.
- 4. Ground Fault Protection:** Ground fault relays detect ground faults, which occur when a conductor unintentionally makes contact with the ground. These relays can trip circuit breakers to disconnect the affected portion of the line.
- 5. Directional Protection:** Directional relays determine the direction of fault currents, ensuring that only the section of the line experiencing a fault is disconnected while maintaining power to the rest of the system.
- 6. Backup Protection:** Redundant protection schemes are used to provide backup in case the primary protection devices fail to operate. This ensures a higher level of reliability.
- 7. Remote Monitoring and Control:** Modern systems often incorporate remote monitoring and control capabilities. This allows operators to monitor the condition of transmission and distribution lines in real-time and take immediate action in the event of a fault.

- **Synchronization and Synchro-Check Relays:** These relays are used to ensure that a breaker is closed at the correct time when connecting two power sources or parallel feeders, preventing synchronization issues and potential damage.
- **Fault Locator Systems:** These systems help locate faults along transmission and distribution lines. They use various techniques like impedance measurement and time-domain reflectometry to pinpoint the fault's location accurately, speeding up repair efforts.
- **Arc Flash Detection:** In the event of an arc flash, specialized detection systems can rapidly disconnect power to mitigate the risk of personnel injury and equipment damage.
- **Lightning Protection:** Lightning arresters and surge arresters are installed to divert and dissipate lightning strikes, protecting transmission and distribution lines from lightning-induced damage.
- **Regular Maintenance and Inspection:** Routine inspections, maintenance, and testing of protective devices and equipment are essential to ensure their proper functioning when needed.

Protecting transmission and distribution lines is critical to maintaining a reliable and safe electrical power supply. A combination of protective relays, monitoring systems, and preventive measures is employed to minimize downtime, prevent damage, and enhance the resilience of the power grid.

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# SHARK TANK AT VESP

we want you to  
**BE AN ANGEL  
INVESTOR**  
in

ALL YOU NEED TO DO IS!!

- Keep an amount of minimum INR 70000 ready with you! and register by contacting Coordinators
- Join us on Saturday, 25th March 2023 to invest in minimum one or multiple new age tech start-ups and get upto 15% equity in their business!
- Let's make ATLEAST one PayPal out of VES Polytechnic!

**EVENT DATE**  
**25** March, 2023  
11:00 am to 1:00 pm &  
2:00 pm to 4:00 pm

The Institution's Innovation Council (IIC) assembled a well organized intra institutional business plan competition SHARK TANK on 25/03/23 at VES Polytechnic, Chembur .The program was held from 11.00am – 7.00 pm. With a overwhelming audience with around 100s of curious minds. The number of faculties presented were 10

The event was based on reality television series SHARK TANK. A platform were upcoming entrepreneurs pitch their businesses to sharks who had already grown their businesses, help others to established start-ups and to invest in them after assessing the business ideas. Mr.Lokesh Vasan, Mr. Monu Shetty, Mr. Sameer Karna, Mr.Rajesh Rajgor , Mr. Jayant Hudar, Mr. Amit Rambhia, represented the roles of SHARKS in the event.The event had a great

active and strong participation from the teams by being a pitch of entrepreneurs appearance and demonstration. After every pitch teams got a uniform conversation for their businesses from the following panel members. The event was great learning experience; all the students, everyone participated enthusiastically and developed creative business plans for their future. The sharks was too happy with all the presentation given by all pitches and also gave positive feedback about the event to all the teams and the audience.All the respective sharks gave the few tips

about creating their own innovations and set up the business plan among the participants and the audience . The participants managed to have impact on the sharks with unique Ideas and great presentations. The overall response of the event was beneficial and effective for everyone present over there. All the participants and the judges comprehensively admire the event and suggested that more events should be take place often in the path of more benefit in business and management.

# NATIONAL DIGITAL LIBRARY



**NATIONAL  
DIGITAL  
LIBRARY**

**ABOUT**

The National Digital Library of India is a single window platform that provides learning resources with an aim to make e-learning and education accessible to all, and to bring to users of all demographics, digital repositories from India and the world.



5TH APRIL 2023 

VESP SEMINAR HALL 

START AT  
10AM -11AM 

REGARDS::  
MANGESH PAWAR  
librarian  
&  
NDL CORE TEAM

The National Digital Library (NDL) is a valuable resource for college students and educators in India. It offers a vast collection of digital educational materials that can benefit college-level studies and research. Here's how the National Digital Library is relevant to colleges:

- 1. Access to a Wide Range of Materials:** College students can access textbooks, lecture notes, research papers, journals, and other educational resources across various disciplines. This can be especially helpful for students pursuing higher education.
- 2. Supplementary Learning Resources:** The NDL provides supplementary materials that can complement classroom teaching. Students can find multimedia content, tutorials, and reference materials to enhance their understanding of subjects.
- 3. Research Support:** College faculty and researchers can access a wealth of research papers, publications, and academic content to support their research endeavors.
- 4. Convenient Online Access:** The NDL is accessible online, making it convenient for college students and faculty to access resources from anywhere with an internet connection.
- 5. Diverse Subjects:** The NDL covers a wide range of subjects, from science and technology to humanities and social sciences, catering to the diverse needs of college students across disciplines.



# KNOWLEDGE HAS POWER !!!!!



Vivekanand Education Society's Polytechnic

IN ASSOCIATION WITH ISA V.E.S.P. STUDENT SECTION



Present's

## Kaun Banega Knowledgepati ?

"Unlock your mind and let the game begin - the hunt for knowledge starts now with Kon Banega Knowledgepati!"

KAUN BANEGA  
KNOWLEDGEPATI  
KAUN BANEGA

**Technical event + Competition**

	<b>17th April, 2023</b>		<b>1500Rs + Trophy + Certificates</b>
	<b>V.E.S. Polytechnic</b>		<b>1000Rs + Trophy + Certificates</b>

"Kaun Banega Knowledge Pati" is a reference to a popular Indian television quiz show called "Kaun Banega Crorepati" (KBC), hosted by Amitabh Bachchan. It is a quiz competition where participants can win money by answering a series of general knowledge questions.

If our college it is organized a knowledge quiz competition similar to KBC, it can be a fun and educational event for students. Typically, such competitions aim to test participants' general knowledge, problem-solving skills, and quick thinking. Here are some key points related to organizing a "Kaun Banega Knowledge Pati" competition at our college:

**Format:** Determine the format of the competition. Will it follow a quiz show format like KBC, with multiple-choice questions and lifelines, or will it be a traditional quiz with direct questions and teams competing?

**Questions:** Prepare a diverse set of questions that cover a wide range of topics, including general knowledge, current affairs, history, science, and more. Ensure that the questions are challenging but fair.

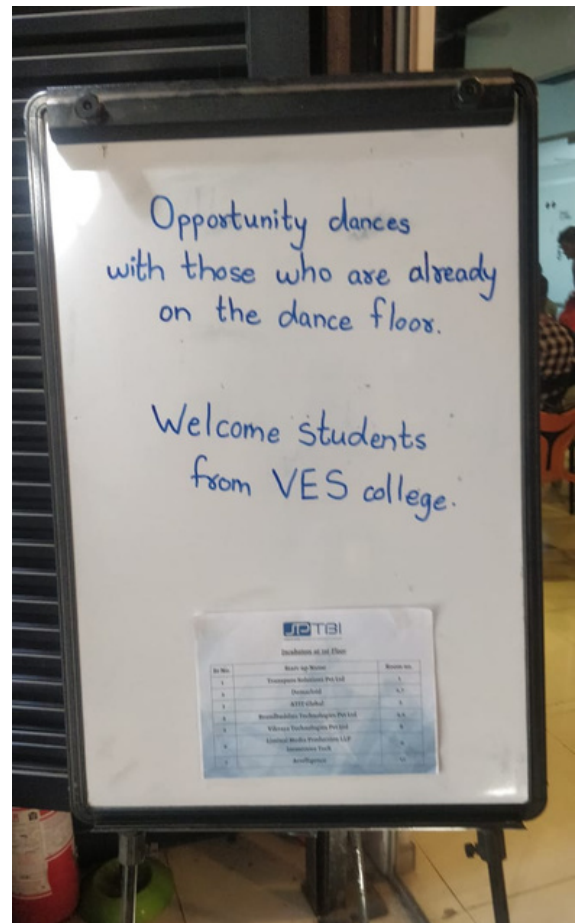
**Host:** Select a capable and engaging host or quizmaster to facilitate the event and ask questions.

**Participants:** Decide on the eligibility criteria for participants. Will it be open to all students, specific years or courses, or teams? Make clear rules regarding participation and registration.

**Prizes:** Consider offering prizes or recognition to the winning individuals or teams as an incentive

Organizing a knowledge quiz competition like "Kaun Banega Knowledge Pati" can be a fun and educational way to engage students and promote general knowledge. It can also foster a sense of healthy competition and camaraderie within your college community.

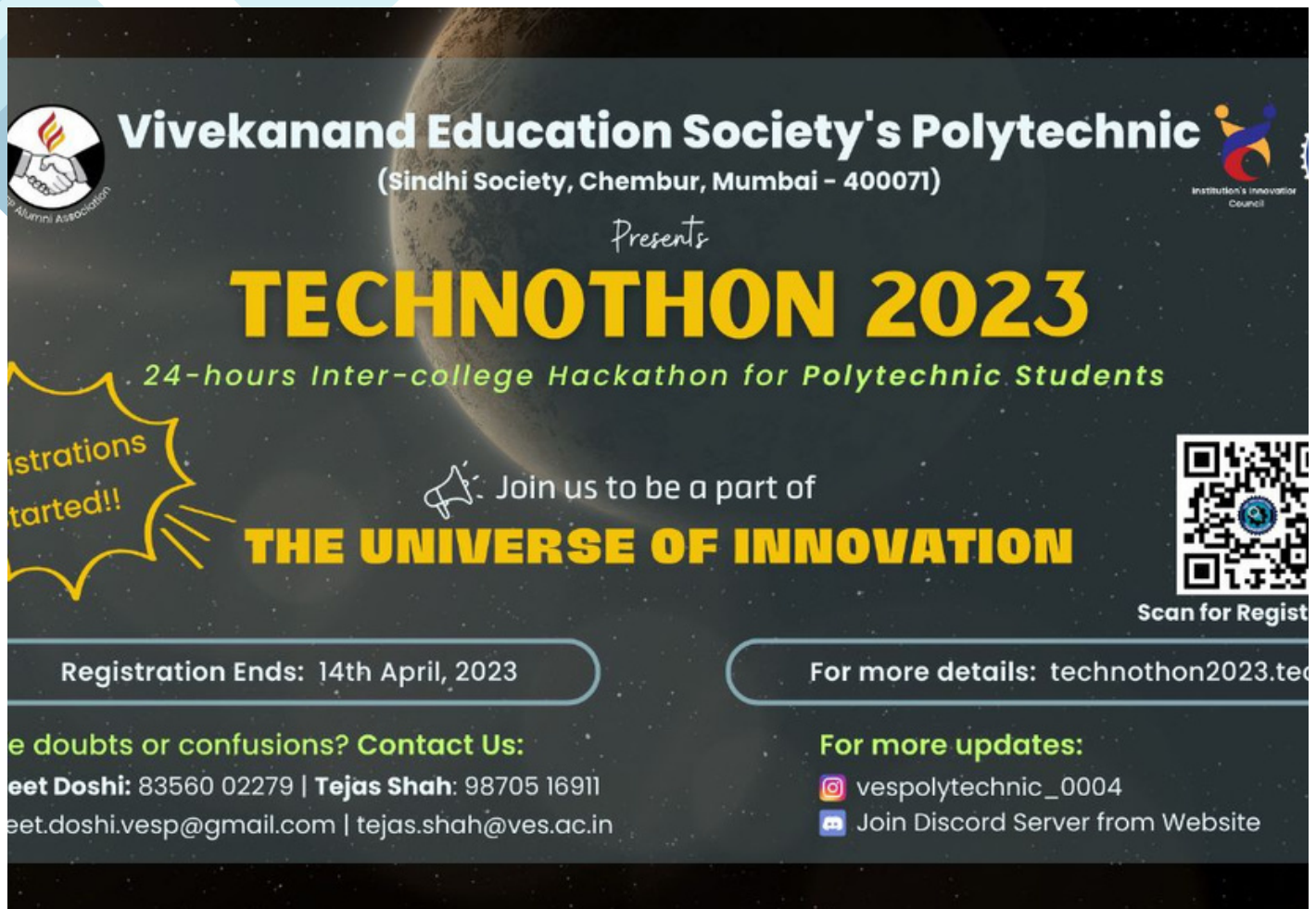
# VISIT TO SPTBI CENTER





**The Institution's Innovation Council (IIC) visited the SPTBI (Sardar Patel Technology Business Incubator) for lecture on 2nd may 2023. The lecture was conducted in two batches, first batch from 10:00 am to 11:00 am and second batch from 11:15 am to 12:15 pm. The visit was specially organized for second year students. Mr Abhishek following with a brief introduction of SPIT and how it helps startup's provide a proper space, guidance, mentorship and facilities like workspace, WiFi and seminar's. After that we were introduced to 2 startups linked with SPIT.**

- 1. SEAM App (eBook platform for authors and students)**
- 2. LineupX (recruitment business by 10x revenue)**

# TECHNOTHON AT VESP



 **Vivekanand Education Society's Polytechnic**  
(Sindhi Society, Chembur, Mumbai - 400071) 


Presents

## TECHNOTHON 2023

24-hours Inter-college Hackathon for Polytechnic Students

Registrations started!!



Join us to be a part of  
**THE UNIVERSE OF INNOVATION**

 Scan for Registration

Registration Ends: 14th April, 2023

For more details: [technothon2023.tech](https://technothon2023.tech)

Have doubts or confusions? Contact Us:  
Meet Doshi: 83560 02279 | Tejas Shah: 98705 16911  
[meet.doshi.vesp@gmail.com](mailto:meet.doshi.vesp@gmail.com) | [tejas.shah@ves.ac.in](mailto:tejas.shah@ves.ac.in)

For more updates:  
 [vespolytechnic\\_0004](https://www.instagram.com/vespolytechnic_0004)  
 Join Discord Server from Website

A "hackathon" (a portmanteau of "hack" and "marathon") is an event where individuals or teams come together to collaboratively work on creative and intensive projects, often related to software development, programming, and technology. These events typically span a fixed duration, which can range from a few hours to several days, during which participants work on innovative projects or solve complex problems.

**Technothon was the first 24 hours coding competition that happened for the first time ever in any Polytechnic college in Mumbai. Vivekanand Education Society Polytechnic was the first college to do so. Technothon brings people with technical backgrounds together for problem-solving and developing new ideas. It was organized on 29 – 30 April, 2023. The hackathon was conducted specially for diploma students for 24 hours via offline mode. The total number of participants were 18 groups from different colleges including 4 members in each with 20 volunteers and 7 faculties throughout 24 hours. The Vivekanand Education Society Polytechnic arranged every necessary thing required for 24 hours of technothon like workspace , resting area and cafeteria.**



# TOPPER OF EVEN SEMESTER

<b>1. URJA GOPAL SAHA</b>	<b>88.83%</b>
<b>2. GUPTA NIKHIL</b>	<b>86.85%</b>
<b>3. GUPTA VIKAS MANOJ</b>	<b>85%</b>



## E-E NEWSLETTER TEAM-

ACADEMIC YEAR	NAME	CLASS	ROLE
2022-23	TUPE KASTURI RAHUL	EE3I	Cordinator
	GAIKWAD JAYESH SUKHDEV	EE3I	Designer
	MANE SWARAJ PRAKASH	EE1I	Data Entry
	PRANAV SANJAY PHALAK	EE1I	Data Entry

