

IIT-Madras creates 'Shakti', India's first microprocessor



It was designed, developed and booted by IIT Madras with a microchip fabricated in ISRO's Semi-Conductor Laboratory at Chandigarh. It has been developed under a project partly funded by the Ministry of Electronics and Information Technology as part of two-decade-old efforts to develop indigenous microprocessors. Its design originates from open-source instruction set architecture (ISA), a set of basic instructions called RISC V, which makes it customizable to any device. It delivers a new level of free, extensible software and hardware freedom on architecture. It can be used in mobile computing, wireless and networking systems.

Electrical Engineers crack UPSC Civil Service Exam 2022



In UPSC CSE 2022, Electrical Engineering students of SGSITS have made the institution proud by clinching top ranks. Krishna Chandra Gupta (Batch 2016) from Gwalior cracked it and secured an AIR of 142, earlier he worked in Deloitte USI as Advisory Analyst as well as a Technical intern at Eicher Motors while Ayasha Fatima (Batch 2019) from Dewas made it and got an AIR of 184. Talking about her success Ayasha said, "I owe my success to my parents and sister who have been my support throughout the journey at UPSC. Apart from it, I would also like to thank SGSITS for pushing the boundaries of learning and hard work. I would like to extend my thank you to EED that during my college times helped me identify my strength of communication."

Rail minister announces India's first hydrogen train



The hydrogen-powered train uses hydrogen fuel cells to produce electricity by converting hydrogen and oxygen, which is then used to power the train's motors. The upcoming hydrogen-powered trains will be known as Vande Metro. It will initially run on historic, narrow-gauge routes Railways Minister Ashwini Vaishnaw on 12th April announced that India will have its first hydrogen train designed and manufactured locally by December 2023 on the Kalka-Shimla historic circuit. Although hydrogen-powered train technology is still in its infancy, India's early adoption is regarded as a significant step toward green initiatives.

Indore Gourav Divas: Startup & IT Conclave



The Indore Development Authority organized a Start-up conclave on May 30, 2023, at the Brilliant Convention Centre in Indore, as a significant initiative by the government. SGSITS engineering students showcased innovative models at the conclave, including a garbage segregation system, milk purity detection, and soil moisture measurement, highlighting their technical prowess and dedication to addressing societal challenges. The Electrical Engineering Department students undertook diverse projects like the Anti-Sleep Alarm for Drivers, Zebra Crossing Elevator, Robo-Arm for Servo Control, Automatic Seed Sowing Machine, and Digital Tachometer to expand their knowledge and skills. Overall their showcasing caught attention resulting in a fruitful visit.



Energy Storage

By Umakant Chachondiya
2nd Year

Energy storage has become an essential component of modern energy systems. As the world shifts towards renewable energy sources, the need for energy storage solutions is increasing. Energy storage systems can store excess energy generated by renewable sources during periods of low demand and release it when needed, ensuring a stable and reliable energy supply.

Energy storage systems come in different forms, including batteries, flywheels, pumped hydro storage, compressed air energy storage, and thermal storage. Batteries are the most commonly used energy storage technology due to their flexibility, scalability, and fast response time. Lithium-ion batteries are the most popular type of battery used for energy storage, but other types such as flow batteries and sodium-ion batteries are also gaining popularity. Pumped hydro storage is another form of energy storage that involves pumping water from a lower reservoir to a higher reservoir when there is excess energy. The water is released from the upper reservoir through turbines to generate electricity when there is a demand for energy. This technology is efficient and has been in use for many years. (Scan QR for reading full article)

Vidyut 2023 Edition



Vidyut - Voyage with youth reached its second edition this year. It gave the incoming batches a quick rundown of the electrical department's background, accomplishments, technology, and social contributions. The second edition, released on February 10th in presence of Prof. Rakesh Saxena - Director SGSITS, Prof. HK Verma - Dean Academics along with EED faculties. Vidyut included some interesting articles on the electric motor, the EV Series 2.0, and lithium-ion batteries which are the upcoming future. It included Achievers Archive, featured some prominent alumni from EED, proceeding to EED's Know Your Mentees column, as well as some additional information from the IEEE and a journey towards academic greatness with IIT Indore visit. There were outstanding articles on wireless electricity transfer and sand batteries, as well as some amazing student-written poems, paintings, and essays along with different events hosted by various clubs in Beyond Studies Concluding with Know Your Team and a magnificent picture of the department's staff and students.

IEEE Expert Talks by Prof. MPS Chawla

Prof. M.P.S. Chawla, Associate Professor in Electrical Engineering Department, participated in IEEE education week. The IEEE education week function was hosted by Sage University from 4th April to 8th April 2023. For the inaugural IEEE Education Week function Prof. MPS Chawla was invited as a chief guest, and he was also invited as guest of honor at Shri Aurobindo Institute of Technology on 7th April 2023.



Alumni association to EED



The Electrical Engineering department has been provided with various technical and non-technical equipment by the SGSITS Alumni Association in February, this year. The Alumni Association offered the Electrical Engineering Department with LCD projector, Multimeter, and almirahs.

Alumni have consistently given back to the institute and this has enabled the institute to undertake projects and initiatives that would otherwise have not been possible. An LCD projector will provide a better interactive learning experience along with it lab instruments will be an asset to the various labs of the department. This ceremony took place in the presence of Dr. Rakesh Saxena - Director SGSITS, Dr. Arun Parakh - Head of Department EED, Prof. R.S. Mandoli - Associate Professor EED, Engr. Sandeep Consul - President Alumni Association, Dr. Girish Gupta - Honorable secretary, Engr. Bhagirath Rathore - Joint Secretary Alumni association.

AAYAAM'23

AAYAAM 2023, organized by SGSITS, was a techno-cultural festival held from March 16th to 18th. It aimed to combine information and entertainment through a wide range of cultural activities. The event provided a platform for departments and clubs to showcase their unique aptitude, allowing students to compete in their preferred fields. The Electrical Department's club, CEE, participated with the theme 'Electromania,' presenting a captivating Gamezone featuring games related to electrical engineering.

The Gamezone included engaging activities like Gully Cricket, Crossword, Buzz Wire, Electric Maze, Climb the Curve, and Rowdy Rows, providing participants with a hands-on experience of the science behind electrical engineering. Additionally, the club organized a stall in the Silveria Hall, where they showcased remarkable projects and posters such as laser-based smart security system, Neuralink, Internet of Things (IoT) applications, humidity sensors, Controller Area Network (CAN), Intel i9 processor, microprocessors, Li-Fi, and a smart blind stick. These showcases captured visitor attention and raised their knowledge on technology. The event received praise for instilling awe and appreciation for science among participants. The hard work of the volunteers and the team behind AAYAAM 2023 resulted in a successful festival, leaving participants inspired and gratified by the wonders of science and technology.



Paper Publication

✍️ **Dr. H. K. Verma, Cheshta Jain Khare, Ujjwala Rai, & Vikas Khare,** "Optimum Design of Controller Parameters for Automatic Generation Control Employing Hybrid Statistically Tracked Particle Swarm Optimization Algorithm", Published in Springer, Feb 2023



✍️ **Dr. Sandeep Bhongade,** "Efficient Transmission Pricing using Power Flow Tracing", Published in Journal of Power Electronics & Power Systems. Published on May 15, 2023.



✍️ **Rinki Keswani, HK Verma & Shailendra Kumar Sharma,** "Combined Emission Economic Load Dispatch with Renewable Energy Sources Employing Hybrid Statistical Multiswarm Particle Swarm Optimizer-Sine Cosine Algorithm". Published in Electric Power Components and Systems, Feb 2023



✍️ **Mrs. Anju Dwivedi,** "An exploratory review of various forms of EMG noise signals and their removal techniques". Published in ICICES, March 17-18, 2023.



✍️ **Dr. Sandeep Bhongade and Mr. Ankit Singh,** "Multi-area AGC scheme with and without SMES unit in restructured power system", Published in JBS, Volume 23, Issue 3, March 2023



PhD Award

EED express their heartfelt congratulations to Dr. Sukhlal Sisodiya on successfully completing his PhD from IIT Roorkee. The topic of his PhD is "DEMAND SIDE MANAGEMENT IN POWER DISTRIBUTION SYSTEM".



Farewell Batch 23' : Embracing New Horizons

As we bid adieu to the outgoing batch of 2023, praying that each one of you will go on to achieve great heights. Remember, you are not just leaving our campus but stepping into a world full of opportunities and possibilities. Embrace them with open arms, chase your dreams relentlessly, and never forget the bonds we have forged here. Let us continue to support and uplift one another, even from afar, as we navigate the uncharted waters of life, your experiences will act as a guidebook for us. EED wishing you heavy pockets, a light heart, and good health by our side. Cheers to the new beginnings!

Fate ordains to bid adieu in pain.
We do so in the hope to meet you again.

Council of Electrical Engineers Achiever's Section E-YANTRA 2023

In the E-Yantra Robotics Competition (EYRC) held at IIT Bombay, the SGSITS Team Paarth Parikh (EE), Udit Fand (EC), Vasudev Kesharwani (EC), and Ansh Gupta (EI) ranked among the top five teams.

Their task was to develop an autonomous ground vehicle (AGV) called Krishi-Bot for navigating a model greenhouse, finding fruits, and performing pick and place operation. During the competition, they simulated the AGV's task using Gazebo in the primary Stage. In the second stage, they remotely operated the actual bot using Remote-ROS to complete assigned tasks.

They were invited to IIT Bombay for the Finals, where they gained knowledge of ROS, Moveit, Gazebo, Git, and Ubuntu OS. Paarth Parikh along with his teammates also received an internship offer from IIT Bombay's CSE branch. The team received support from departmental faculties and college administration, making their IIT Bombay tour fruitful.



Pradhumn Sharma: A Journey to GATE Success



In the realm of competitive exams, cracking the Graduate Aptitude Test in Engineering (GATE) is a remarkable achievement. Meet Pradhumn Sharma, a diligent and determined student of the Electrical Engineering department at SGSITS, Indore, hailing from Guna, Madhya Pradesh. Pradhumn defied the odds and secured an impressive AIR 11 in the GATE 2023 exam, and AIR 17 in Electronics and Instrumentation. He intelligently supplemented his GATE preparation by joining a test series. He achieved AIR of 3800 in EE and 1100 in E in 3rd year. To excel in GATE, Pradhumn developed his problem-solving abilities through the consistent daily study of 4 hours and increased up to 8 hours during holidays. He set achievable targets, stayed focused, and tracked progress effectively throughout his preparation. His mantra, "Don't be average, show your dominance," reflects his unwavering determination for excellence. He is now setting his sights on higher studies with a strong inclination toward research and development in the electrical sector.

Anti Sleep Alarm catches headlines

Minor projects were completed by EE second-year students in Electrical Workshop 2. Anti Sleep Alarm, made by Abhigyan Purohit, Abhishek Patidar, Akshay Nayak, Aniruddh Sharma, and Darshan Jain, was covered in several media outlets and generated headlines.

Other projects, such as Off Track Detector, Elevated Zebra Crossing, Micro Inverter, Train Accident Prevention, and many more, demonstrate students' keen interest in and command of the practical application of electrical engineering.



Know Your Lab Machine Lab



Machine lab emphasizes imparting knowledge on construction, the principle of operation, and the performance of electrical machines.

The Laboratory is equipped with conventional and modern Electrical and Electronics measuring equipment, various AC and DC Electrical Machines, and Transformers. Laboratory displays various electrical machines such as single-phase transformers, DC Generators, DC motors, 3-phase induction motors, and 3-phase Alternators. Students will be performing experiments on both static and rotating electrical machines so that they gain practical knowledge of speed control of various rotating motors and voltage control of transformers and alternators etc.