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NEWSLETTER FROM DEPARTMENT OF ELECTRONICS ENGINEERING

VOLUME 5, NO.1

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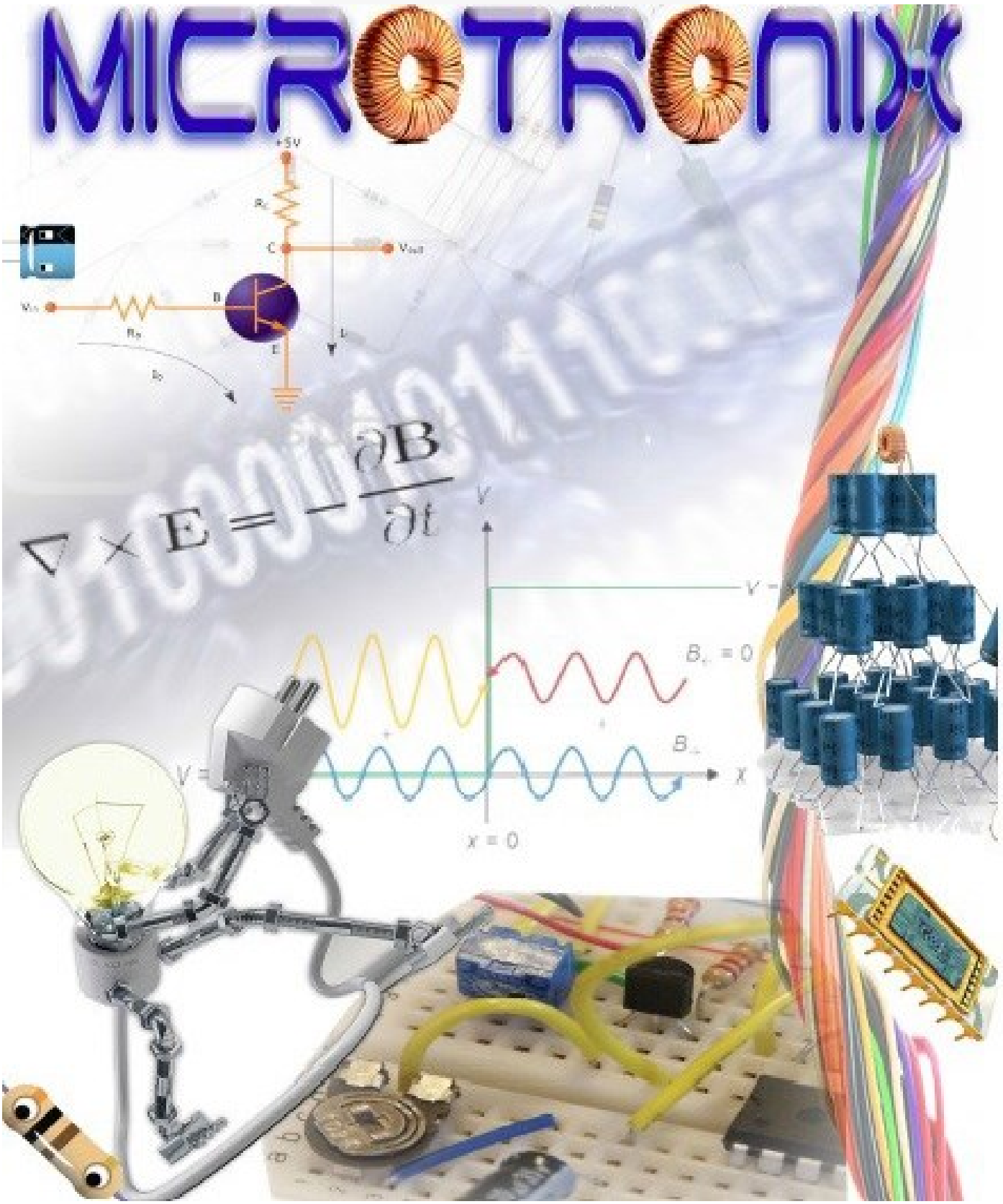
MICROTRONIX



Quick Navigator

*To be updated

EDITOR'S NOTE:

Preethi S Warrier

Assistant Professor
SAKEC

With great pride, I present to you, the 1st issue of Volume No.5. of our departmental newsletter "Microtronix", a platform for our students to showcase their technical and literary talents. At the onset, I would congratulate our toppers and also all other students for achieving extremely good results.

In this semester, many informative FDPs, workshops and technical events were conducted by the professional bodies like IEEE, ISTE and IETE. The staff and students participated with lot of enthusiasm. I also congratulate all students who actively participated in NUCLEUS, OLYMPUS, and VERVE, the technical, sports and cultural festival of our college.

It would not have been possible to bring out this issue of "Microtronix" without the efforts and hard work put in by our student editors. I would like to specially thank all editorial team members and my colleagues for their immense support

I hope Microtronix encourages all our students to explore their talents. I also wish all students great success in their future endeavors.

STAFF MEMBERS OF THE DEPARTMENT OF ELECTRONICS ENGINEERING

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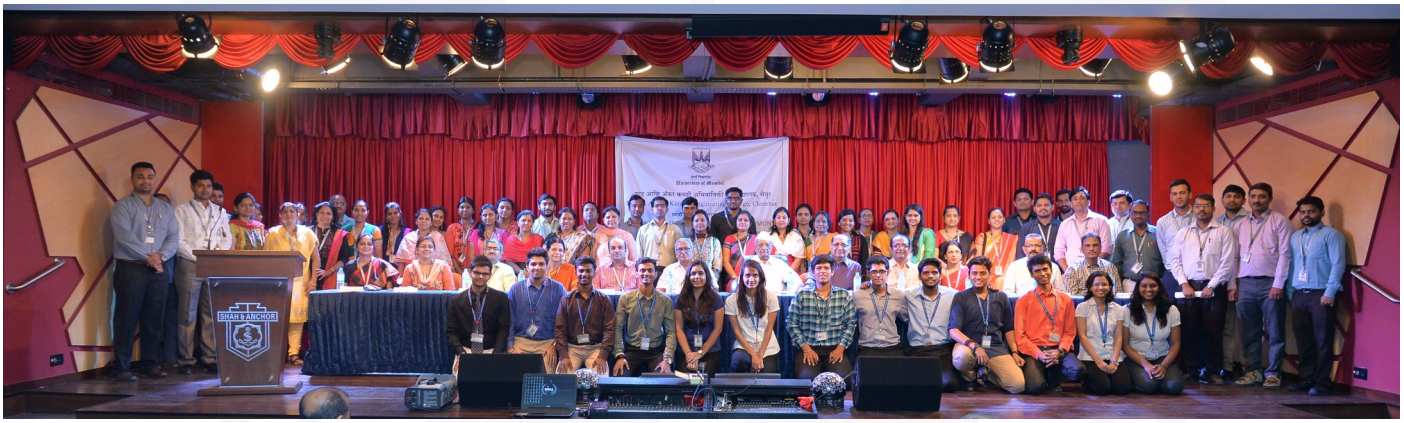



MAHAVIR EDUCATION TRUST'S
SHAH AND ANCHOR KUTCHHI ENGINEERING COLLEGE
SHRI LALJI VELJI ANCHORWALA AND SMT LAXMIBEN KARAMSHI SHAH BHUJPURWALA

ALUMNI ARTICLE

Ritika Thakkar
SAKEC BE ETRX
Batch 2016

WHEN IT HIT ME..

I'd gone to college to get a stamp on my hall ticket for the upcoming final exams of the semester which happen to be the last cog in the wheel of engineering studies. It is surprisingly scary how time flew past like a gust of wind, these past 4 years - struggling and triumphing over personal and professional issues, we all grew up before we could even understand what we were here for. Ironically, these last few days seem longer than the said 4 years. Anyway. After reaching college, I encountered a rude 5 minutes of waiting outside my own alma mater, as a hoard of enthusiastic, tired, relieved and generally hungry crowd of adolescents and their eager parents poured out onto the street like grains of sand in the hourglass - just fast enough to keep you waiting for it to get over. After an exasperating 5 minutes, when I finally got to step into the campus, I was reminded that the annual CET exam was scheduled for that day. This mandatory, mind-crunching entrance exam that every unfortunate Indian kid with a potential in the field of science is put through, is his/her gateway to the world of engineering and general mayhem. Our college being a centre for this exam that day meant the office would be shut and that my trip to chembur was a waste of an hour and valuable effort. So to sooth my spirit and my grumbling guts, I went to the canteen to sip onto some flavored milk. As I sat across a friend, discussing the misfortune of the day, I observed the couple of parent-progeny pairs scattered in the room, nervously nibbling onto food and discussing the proceedings of the next exam, which was scheduled 2 hours later. It amused me and made me nostalgic about the time when I was in that position. Now that I'm almost at the end of the race, I realize how far I've come. In another few months, I'll probably be bidding adieu not only to carefree, frivolous, lazy student life, but also to this city that has been my abode for the better of 2 decades and more. Life would take a paradigm shift as work would actually mean business. A new city, a new life. As I sat there, pondering over these thoughts, Anna broke my reverie - "Ritika, hamesha ki tarah, aaj coffee nahi liya?" I shook my head in negation, as my tense expression broke into a smile. Guess some things in life WILL change - that's what growing up is all about. The chilled pineapple doodh settled in my stomach peacefully.

STAFF ARTICLES

Why I love being what I am: A Teacher

"So you are a lecturer?", asked one of the many aunties at a wedding, looking at me with some surprise and more disdain. "But you did engineering right? Both my sons are in the US, high flying corporate jobs.." she boasted, as she settled down beside me with her juice and starters.

I was used to these taunts all the time but today I finally decided to clear the air, I had lots of time, it was a wedding.

"Oh aunty, corporate jobs … they aren't adventurous or exciting enough for me. I want my job to be full of surprises, excitement and fun. A software job wouldn't give me all that. " I retorted.

She looked shocked, but didn't stop, "And what excitement does teaching give you, it's so easy ..."

Yeah. Standing in front of a bunch of hundred odd teenagers, grabbing their attention, looking into their eyes, screaming at the top of your voice and getting a positive response from all of them is definitely easy.

I rephrased my thoughts, "Auntyji, what would you say when I have to deliver ten different presentations, every week, in front of a crowd close to a hundred students, each with a different attitude, a different mindset, each of them judging me, analysing every word I speak and ready to rip me off at my slightest blunder? And mind you, my audience is not a small group of well groomed adults who would tolerate a bad presentation. A gang of youngsters is a different story altogether. "

And while lecturing her, I imagined, how confident and well prepared you should be when you face your class. But that feeling when you finally capture their interest, interact and discuss with them, stir their young minds, encourage doubts, solve them and at times learn from them, win their respect and friendship...that satisfaction couldn't be expressed in words.

Aunty didn't give up, " It must be really monotonous, taking lectures all the time.."

I was genuinely surprised, "How can my life be boring when I'm always surrounded by young people? I'm always updated with all the latest fashion trends. There is always a flurry of activity, technical festivals, cultural festivals, sports and debates. "

Aunty now attacked me with the deadliest weapon , 'TEACHER'S SALARY '. I smiled calmly, "Aunty, no job would ever give me the satisfaction of being a teacher, a friend and an advisor, all rolled into one. We have no deadly office politics in college, the better you teach, the more popular you become. And your success only encourages others to teach better. A nod of acknowledgement, a frown of doubt, a request for advice and a smile of appreciation from students makes a teacher's day."

As aunty sat there dumbfounded, I rose to refill my juice, but not before firing my parting shot,

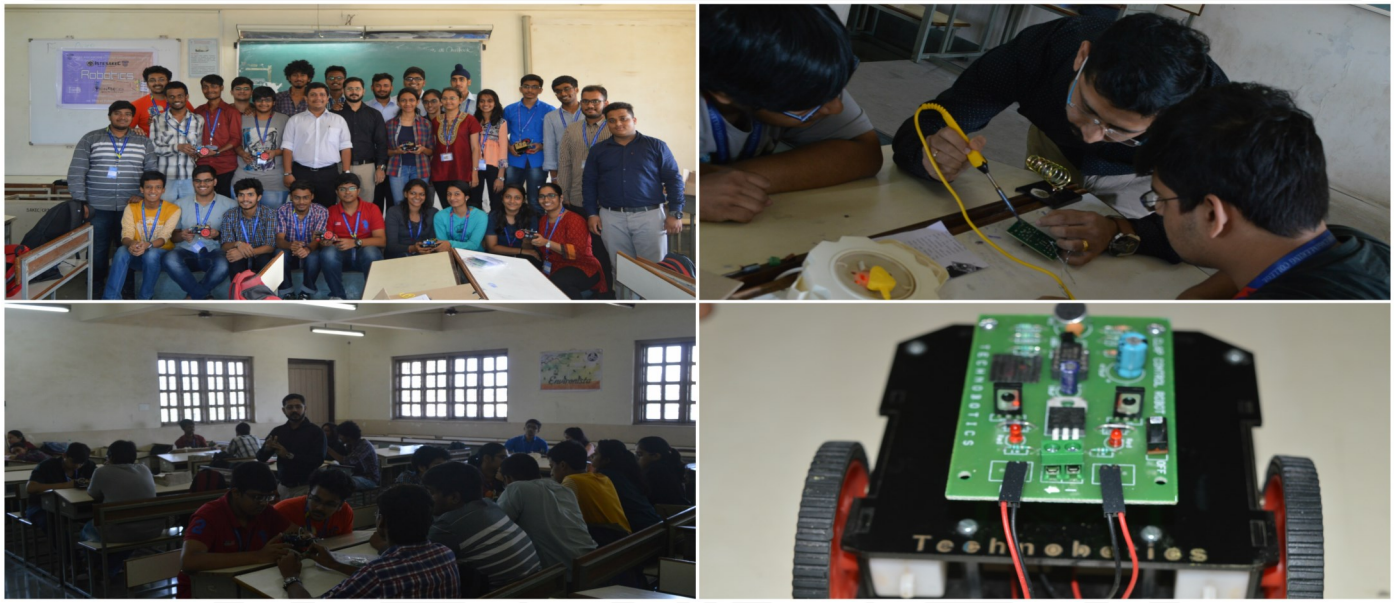
"There are some things money can't buy... for everything else... well... you have corporate."

STUDENT ARTICLE

EVENTS & WORKSHOPS

1. ISTE SAKEC

ISTE SAKEC in association with "**TECHNOBOTICS**" had organized a workshop on "**ROBOTICS**" on 11th March, 2017 at Shah and Anchor Kutcchi Engineering College.



ISTE SAKEC celebrated **Arduino Day 2017** at Shah and Anchor Kutcchi Engineering College with a workshop on (mention the date). The speaker for the workshop was (mention the name).

2. IETE SAKEC

Department of Electronics Engineering and IETE SAKEC organized an event on "**Application of Fractional Calculus**" on 4th March, 2017 at Shah and Anchor Kutchhi Engineering College. The speaker for the event was Mr. Mukesh Patil, Vice Principal, Ramrao Adik Institute of Technology, Nerul.

Department of Electronics and Telecommunication Engineering and IETE SAKEC organized an **Industrial Visit** to "Electron Beam Centre**,** Kharghar" On 8th March, 2017. It was coordinated by Ms. Mamta Tikaria, Ms. Manisha Mane and Ms. Gauri Chavan.

Department of Electronics and Telecommunication Engineering in collaboration with IETE SAKEC had organized an event on **MATLAB-SCILAB Software** Workshop On 28th January, 2017. The event on MATLAB-SCILAB Software was taught by Prof. Rohan Borgalli.

3. IEEE SAKEC

Electronics Engineering Department in association with IEEE SAKEC organized a session on **Innovation In Teaching-Learning Process "Flip your class with technology**" for faculties of SAKEC on 10th March 2017. Seminar was conducted by Ms. Simran Dawar, Product Marketing Manager, Windows and devices, Education, Microsoft.

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IEEE Bombay section in association with Electronics Engineering department and IEEE SAKEC organized **Skill & Knowledge Enhancement Program (SKEP)** in Shah and Anchor Kutchhi Engineering college on 1st March, 2017. The speakers were Dr. Sangeeta M. Joshi, Technical Advisor in Vidyalankar Institute of Technology and Dr. R.G. Karandikar, Professor in K.J. Somaiya college of Engineering.

IEEE SAKEC in association with Electronics Department organized a session on "**Why Standards Matter?**" under the distinguished lecture series of IEEE Bombay Section. The speakers were Srikanth Chandrasekaran, Director of IEEE Standard & Technology, Mr. Yatin Trivedi, Treasurer & Member of the Board Of Governors, IEEE-SA and Dr. Andrew Myles Governor of IEEE Standards Association Board Of Governors. Also we had Dr. Ing. Konstantinos Karachalios, Managing Director,IEEE Standards association as a guest.

PROJECTS

By

Rakesh Alagarswamy

TE-ETRX

Mini Refrigerator System

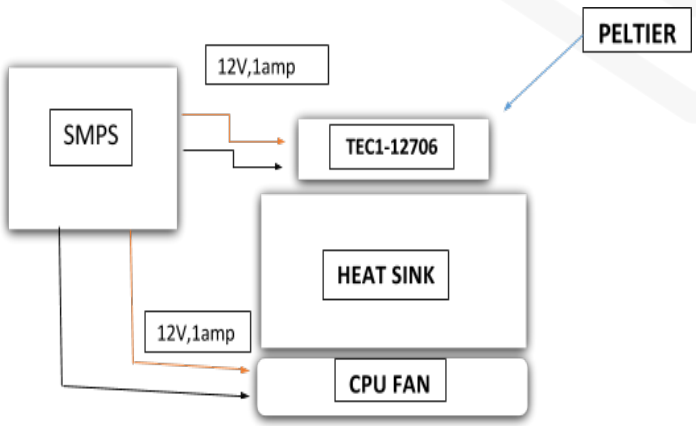
Refrigerators are an expensive investment in the present day. Not only are they priced high, one has to also incur high electricity costs considering the huge amount of power they consume to drive the compressor in them. Urban homes, also face the problem of space. Small kitchens don't have any more space assigned than that for a platform and a few storage racks.

Bearing all this in mind, I took upon this task of creating a refrigerator that consumes low power and is small in size, therefore also portable.

Circuit and working

The connection and setup of this mini fridge is illustrated below:

Here, I used an SMPS (Switch Mode Power Supply) to power the Peltier module (TEC1-12706). You can also use other Peltier modules to increase the speed of cooling, at a faster rate.

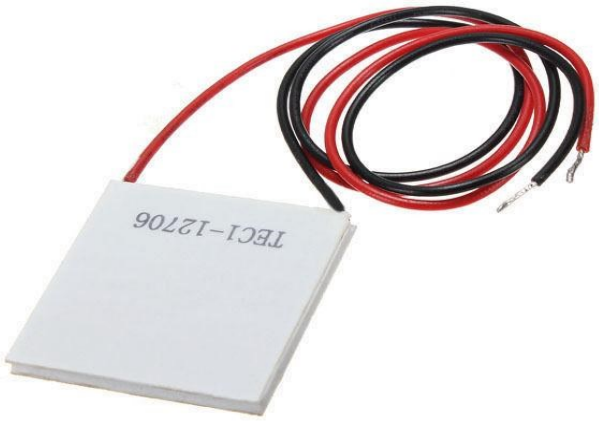


Components and materials used:

1) Peltier module (TEC1-12706)
2) CPU heat sink
3) Thermal paste
4) Foam board
5) SMPS/12v lead acid battery/12v adaptor
6) A hot glue gun and a glue stick.

I used an SMPS because it gives protection from overloading and gives different voltage levels. I used 12v (yellow wire in SMPS) to power the Peltier module and cooling fan attached to the heat sink. You can use 12v battery/12v adaptor to turn ON the Peltier.

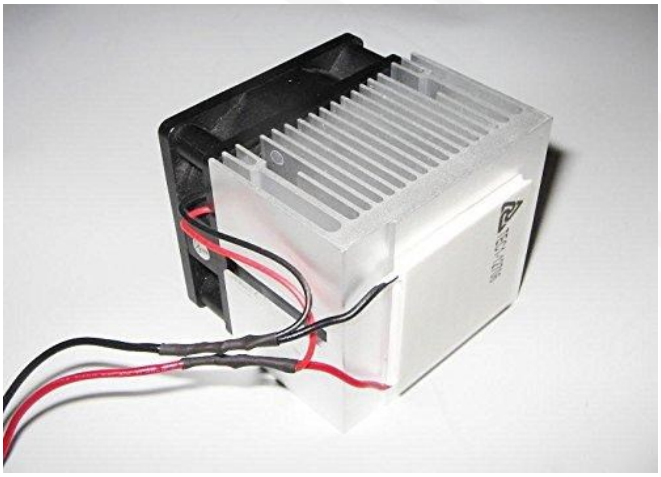
Peltier with SMPS



Peltier module (TEC1-12706)

Peltier module consists of a special substrate that has unique properties that heat one side of the Peltier unit and cool the other side, when an electrical current is applied. Peltier modules are designed to operate at a voltage between 3v-15.4v up to 7amp.

If you are connecting the Peltier module to a 12v supply, it will give -4°C. Thermal paste is needed to be applied on the heat emitting side of Peltier while fixing the CPU heat sink to increase Peltier efficiency and also to protect the Peltier from damage. CPU processor heat sink can be used for the Peltier as dimensions of Peltier are similar to those of the processor; so I placed the Peltier module on the CPU heat sink.



Peltier assembled with heat sink

Now, if you want to make the refrigerator portable, you can attach a standard USB male cable to the terminals of the Peltier module and connect it with the USB port of your laptop/any 5v portable power source. At this time, you do not need to power the CPU fan but the cooling efficiency of Peltier will be less due to less current i.e. around 500mA or 0.5Amp.

I used a foam board because of its ease of cutting and its insular properties, using a hot glue gun to attach the sides and top and then ran a line of hot glue along it to ensure an air tight compartment. A square shaped piece was cut out to make room for the Peltier unit and then, I glued it with the hot glue gun. On another foam board piece, a rectangular shape was cut out to make a door. You can use small hinges for the door by simply gluing them into place with the door for proper opening and closing. These hinges can be easily found in hardware stores. I also used small refrigerator magnets on both the door and inside the refrigerator to create a "magnetic catch" to hold the door closed.

Final Module

ELECTRONICS DEPARTMENT

YEAR	SEMESTER	PASS PERCENTAGE
BE	VII	81.16%
TE	V	36.29%
SE	III	22.53%

ELECTRONICS & TELECOMMUNICATION DEPARTMENT

YEAR	SEMESTER	PASS PERCENTAGE
BE	VII	79.41%
TE	V	78.66%
SE	III	44.15%

ACHIEVEMENTS

SHAH & ANCHOR

Branch Toppers

ELECTRONICS DEPARTMENT TOPPERS

Pawar Snehal
BE - Sem VII
CGPI - 9.33

Parab Dnyanda
TE - Sem V
CGPI - 9.64

Nemane Saahil
SE - Sem III
CGPI - 9.12

ELECTRONICS AND TELECOMMUNICATION DEPARTMENT TOPPERS

Shrivastav Rajat Kumar

BE - Sem VII

Jain Anuj

TE - Sem V

CGPI - 9.63

Sharma Gaurav

SE - Sem III

CGPI - 8.77

Mukta Krishnakant

SE - Sem III

CGPI - 8.77

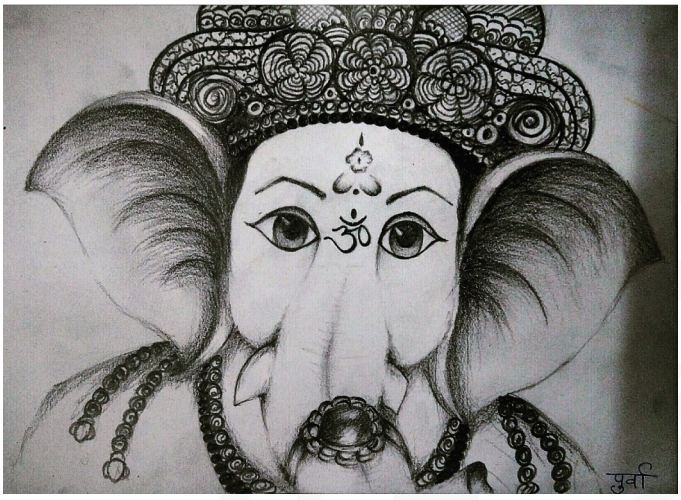
Gupta Ramashish

SE - Sem III

CGPI - 8.77

Creativity Corner

1. PAINTINGS & SKETCHES



By Purva Desai of FE ETRX

By Mohit Bhanushali of FE ETRX

2. PHOTOGRAPHY

By Sairaj Mayekar of TE ETRX

By Aniket Burde of TE ETRX

By Tejas M. Pawar of SE ETRX

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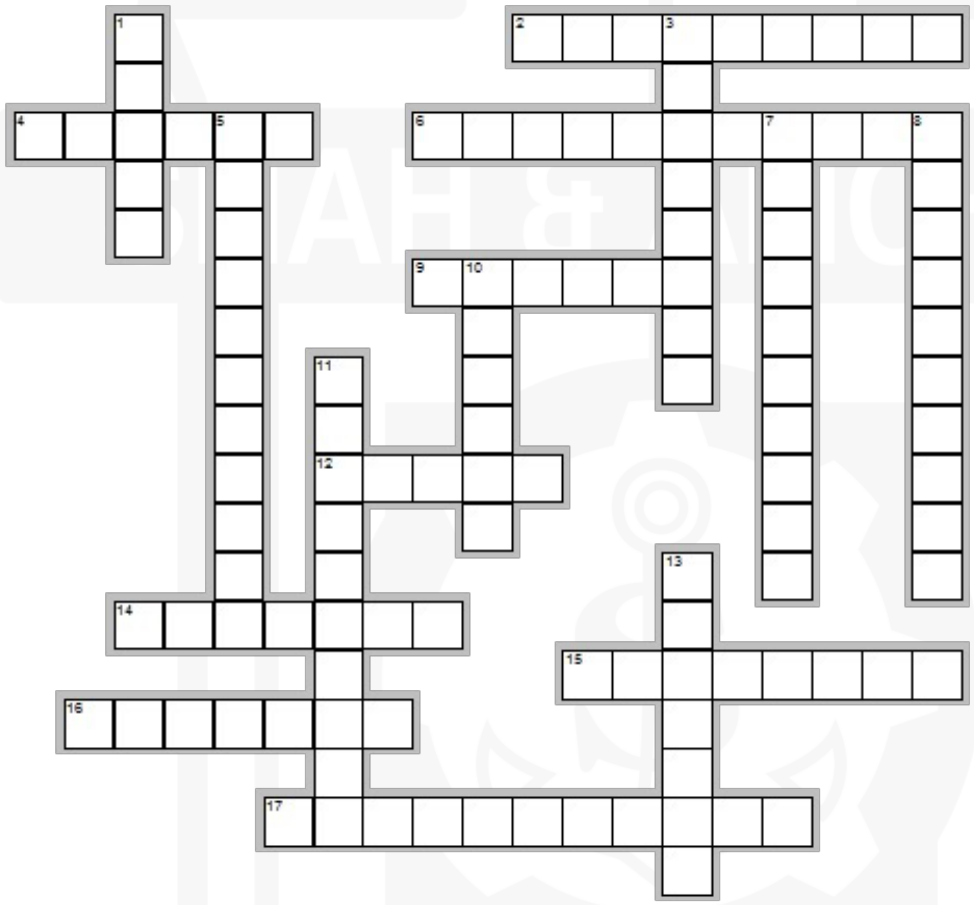
By Rakesh Algarswamy of TE ETRX

By Jeet Jobanputra of TE ETRX

By Nihar Masurkar of TE ETRX

By Preethi Naik of TE ETRX

BRAINSTORM



KEY:

1. Alpha
2. Electrons
3. Clampers
4. Ampere
5. Retentivity
6. Laminations
7. Ionization
8. Schematics
9. Charge
10. Halved
11. Admittance
12. Maser
13. Circuit
14. Crystal
15. Varistor
16. Lagging
17. Resistivity

Across

2.In p type material, minority carriers would be_____.
4. One coulomb passing a point in one second.
6. What is done to reduce the eddy current losses in a transformer?
9. Ampere second could be the possible unit of _____.
12. Similar to LASER but operates on microwave frequencies.
14. A type of piezoelectric resonator.
15. A voltage dependent resistor
16. Induction motors generally operate with _____ power factor.
17. _____ of a material is defined as resistance between opposite faces of unit cube of material.

Down

1. Collector current/Emitter current
3. These are circuits which shift the dc level of a signal.
5. Ability of a material to remain magnetized after removal of magnetizing force is known as?
7. _____ occurs when an atom or molecule gains positive or negative charge.
8. A diagram that shows the electrical connection of the electronic components.
10. When the voltage across a capacitor is halved ,stored charge is _____.
11. Inverse of impedance
13. A collection of components connected together.

USEFUL WEBSITES

*To be updated

SHAH & ANCHOR