The Zenith

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Contents:

The environmental trade-offs of autonomous vehicles

Optimistic predictions expect reliable autonomous vehicles to be commercially available by 2030, at a time when mobility is undergoing a profound shift away from traditional modes of transportation and towards door-to-door services. Previous analysis suggested that public transport will lose market share to autonomous vehicles, but the environmental impact of changing transport use has hardly been considered. New research shows that the convenience of autonomous vehicles would likely come at an environmental cost.

A recent paper by researchers from the University of Wisconsin-Madison addresses the use-phase implications of autonomous vehicles using a stated preference survey to reveal the potential users of autonomous vehicles and the resulting level of competition with traditional modes of transport. The results show an expected increase in environmental impacts across all the categories studied, due to a shift from less carbon intensive transportation options. The authors also confirm that the use of electric autonomous vehicles could change this environmental outcome. Their research is published today in the IOP Publishing journal Environmental Research Letters.

Autonomous vehicles are expected to offer significant benefits in terms of transport operations, safety and accessibility; however, these benefits may mask potential environmental impacts. Clearly, the adoption of autonomous vehicles will be accompanied by travel behavior changes, however research to date has mostly focused on autonomous vehicle technology and not on the environmental impacts that will result from transport mode shifts. This new research therefore examines these impacts based on four categories: energy consumption, greenhouse gas emissions, particulates, and pollutants.

A survey conducted in Madison, Wisconsin, examined attitudes to transport modes and found that in choice experiments between private vehicles, autonomous taxis, buses, and bicycles, respondents would use autonomous vehicle taxis 31% of the time due to their desirable operational and modal attributes. By contrast, buses had a significantly longer access time due to walking and waiting, and personal vehicles were the midway choice. However, commuters who owned a personal vehicle were less likely to choose an autonomous vehicle, implying that autonomous vehicles primarily compete with public transport; therefore, policies aiming to reduce commuting in personal vehicles might not be fully successful in reducing environmental impacts.

The researchers then examined the impacts of policy and service changes via a series of simulations, which confirmed that autonomous vehicles primarily compete with the environmentally preferred transport mode, buses. They also showed that a decrease in bus travel times would result in a significant increase in bus usage. The environmental predictions showed increases of

between 5.7% and 6.85% in the energy and pollution categories, a significant impact, given that transport accounts for 28% of the greenhouse gas emissions in the U.S.

To offset the environmental impacts of autonomous vehicles, the researchers considered the use of electric autonomous vehicles, considering the use phase only. The results showed that electric autonomous vehicles can offset the environmental impact of autonomous vehicles, subject to a suitable mix of electricity generation methods, and if the adoption rate of electric autonomous vehicles is over about 40%.

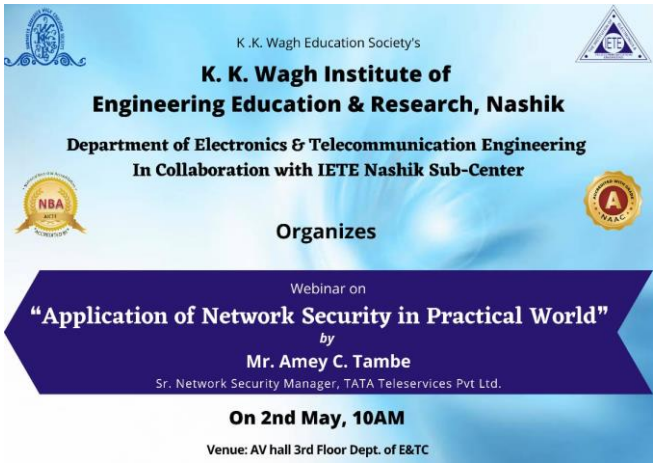
This new research into the use-phase environmental impacts of autonomous vehicles will help researchers and policy makers to exploit the full potential of autonomous vehicles while taking any potential environmental implications into account. Cities seeking to deploy autonomous vehicles will need to steer their deployment in ways that both match consumer adoption patterns and are environmentally beneficial.

Author Wissam Kontar said: "The transportation system is on the verge of a major paradigm shift. Emerging technologies as autonomous and electric vehicles, along with change in commuting behavior will have significant operational and environmental impacts. It is of crucial importance that we consider those impacts conjointly, if we are to forge an efficient and sustainable mobility of the future."

Source: www.sciencedaily.com

Expert Lecture/Seminars/Courses/Industrial Visits Organized

- Department of Electronics and Telecommunication Engineering of K.K.Wagh Institute of Engineering Education and Research Nashik, Students' Association of Electronics Engineers (SAEE) in collaboration with IETE Nashik subcenter organized webinar on "Application of Network Security in Practical World" by Mr. Amey C. Tambe, Sr. Network Security Manager, TATA Teleservises Pvt. Ltd on 2nd May 2022



- Department of Electronics and Telecommunication Engineering of K. K. Wagh Institute of Engineering Education and Research Nashik organized webinar on "Curriculum Development" by Prof. N. J. Rao, IISC, Bangalore on 5th May 2022.
- Industrial visit was organized to "Indian Railway Station, Nashik Road (NK)" for SE students on 4th May 2022.

Industrial Training / Seminar/Workshop done by Staff

- Prof. Dr. D. M. Chandwadkar and Dr. S. A. Patil (Ugale) was the Session chair for VLSI and Embedded systems Track at “ePGPEX-2022” organized by Board of Studies (E&TC), in association with Trinity College of Engineering and Research, Pune on 23rd June 2022.

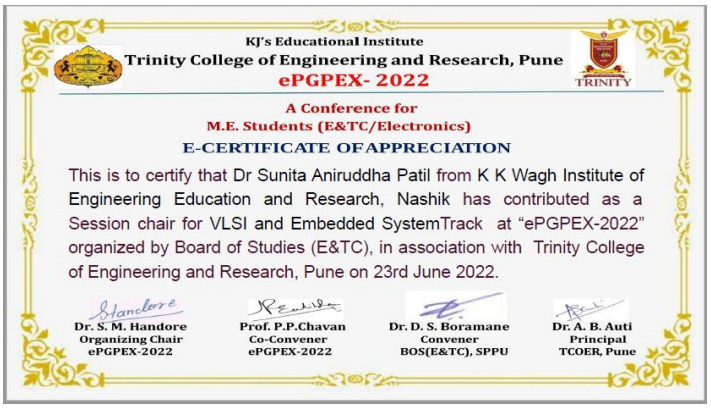
KJ's Educational Institute
Trinity College of Engineering and Research, Pune
ePGPEX- 2022

A Conference for
M.E. Students (E&TC/Electronics)

E-CERTIFICATE OFAPPRECIATION

This is to certify that Dr Dinesh M Chandwadkar from K K Wagh Institute of Engineering Education and Research Nashik has contributed as a Session chair for VLSI and Embedded systems Track at “ePGPEX-2022” organized by Board of Studies (E&TC), in association with Trinity College of Engineering and Research, Pune on 23rd June 2022.

Dr. S. M. Handore, Organizing Chair, ePGPEX-2022
Prof. P.P.Chavan, Co-Convener, ePGPEX-2022
Dr. D. S. Boramane, Convener, BOS(E&TC), SPPU
Dr. A. B. Auti, Principal, TCOER, Pune



KJ's Educational Institute
Trinity College of Engineering and Research, Pune
ePGPEX- 2022

A Conference for
M.E. Students (E&TC/Electronics)

E-CERTIFICATE OFAPPRECIATION

This is to certify that Dr Sunita Aniruddha Patil from K K Wagh Institute of Engineering Education and Research, Nashik has contributed as a Session chair for VLSI and Embedded SystemTrack at “ePGPEX-2022” organized by Board of Studies (E&TC), in association with Trinity College of Engineering and Research, Pune on 23rd June 2022.

Dr. S. M. Handore, Organizing Chair, ePGPEX-2022
Prof. P.P.Chavan, Co-Convener, ePGPEX-2022
Dr. D. S. Boramane, Convener, BOS(E&TC), SPPU
Dr. A. B. Auti, Principal, TCOER, Pune

- Ms. M. V. Marathe and Mrs. R. V. Daund have participated in AICTE IDEA Lab Faculty Development Program on Electronic Product Design organized by AICTE IDEA Lab, K. K. Wagh Institute of Engineering Education and Research, Nashik on 27th-29th June 2022.

K. K. Wagh Institute of Engineering Education & Research

Date: 29th June 2022

This is certify that **Prof. Rohini Vikas Daund** from **K. K. Wagh Institute of Engineering Education and Research, Nashik, Maharashtra State, India** has actively participated and completed successfully the **AICTE IDEA Lab Faculty Development Program on Electronic Product Design, organized by AICTE IDEA Lab** during 27-29th June 2022 at **K. K. Wagh Institute of Engineering Education and Research, Nashik.** His performance during the FDP was satisfactory.

Dr.S. S. Morade
FDP Co-ordinator

Dr. R. K. Munje
Co-ordinator
ACTE IDEA LAB

Dr. K. N. Nandurkar
Principal
K.K.W.I.E.E.R., Nashik.

K. K. Wagh Institute of Engineering Education & Research

K. K. Wagh Institute of Engineering Education & Research

Date: 29th June 2022

This is certify that **Prof. Mrunal Vasant Marathe** from **K. K. Wagh Institute of Engineering Education and Research, Nashik, Maharashtra State, India** has actively participated and completed successfully the **AICTE IDEA Lab Faculty Development Program on Electronic Product Design, organized by AICTE IDEA Lab** during 27-29th June 2022 at **K. K. Wagh Institute of Engineering Education and Research, Nashik.** His performance during the FDP was satisfactory.

Dr.S. S. Morade
FDP Co-ordinator

Dr. R. K. Munje
Co-ordinator
ACTE IDEA LAB

Dr. K. N. Nandurkar
Principal
K.K.W.I.E.E.R., Nashik.

K. K. Wagh Institute of Engineering Education & Research

About Telekinesis

This Pandemic have changed our life way too much. From last almost 2 years students have been pursuing their studies in Online mode and also the events organized for them were in Online mode. It was a great opportunity for our department to start with first Offline event “Telekinesis 2K22”.

Thereafter, The Department of Electronics and Telecommunication of K.K. Wagh Institute of Engineering Education and Research, Nashik have organized Offline event on 5th of May,2022 powered by Nikolaindustry. Students from all over K. K. Wagh have participated in the event.

Events such as Project competition, Mini Project , Essay writing , Debate competition, Quiz competition and Coding competition were organized for students of all branches including Polytechnic college. As the event was organized for a day so it was quite difficult for coordinators to manage all the event but despite of all the difficulties faced the event went quite well with the help of the mentor and coordinator.

Students of whole college and especially of 1st and 2nd year showed a great participation as it was their first Offline event. For Students of 4th year E&TC/Electronics Project competition fees was waived off and for Students of 3rd E&TC/Electronics all events had no entry fee.

Whole event was sponsored by Nikolaindustry. Nikolaindustry is a service agency that helps to convert your business vision into reality. This is a lead by a passionate and hardworking team of students from our college. They have developed this user-friendly effective web application. A very effective, consistent, clutter-free navigation system does provide a very seamless experience. There was each section of competitions where students can submit their work. Every competition as well as results was declared in the portal itself.

Pillars of Strength for Telekinesis

Program Chair: Prof. Dr. K.N. Nandurkar (Principal, K.W.I.E.E.R,Nashik)

Convenor:

Prof. Dr. D. M. Chandwadkar (Head, Department of Electronics and Telecommunications, K.W.I.E.E.R, Nashik)

Prof. Dr. S. A. Patil Ugale (U.G. Coordinator, Department of Electronics and Telecommunications, K.W.I.E.E.R, Nashik)

Sr. No.	Committee	Staff Members	Supporting Staff	Students Coordinator
1	Project Competition	Mrs.M.P.Joshi Mrs. K. Nirmalakumari	R.M.Jadhav	Om Aher Parth Thosar Sanskruti Atal Gaurav Pagare
2	Mini Project Competition	Mrs.S.V.Shelke Mr.N.M.Bhujbal	Mrs.S.M.Shinde	Avirat Labhade Shasawat Mujumdar Hitesh Ajinkya
3	Coding Competition	Mr.D.D.Khartad Mr. K. S. Navale Mr.S.N.Badgujar	Mr. K. R. Dhikale Mrs.L.N.Chaudhari	Vishal Yadav Atharva Dalvi Chaitanya Deshmukh Sahil Wable
4	Quiz Competition	Mrs. P.P.Patil Mrs.M.V.Marathe Mrs. R.V.Daund	Mrs.Snehal.Pagare	Gurukirat Kohli Taniya Ramtekar Shruti Adhav Bhushan
5	Essay Competition	Mrs.S.C.Karpe Mr.S.S.Dongare	Mr.A.A.Hadpe Mr.S.R.Gangurde	Aditi Shrivastav Neha Lohiya Disha Kariya Akshada P
6	Debate Competition	Prof. P.J. Mondhe		Piyush Patil Shreharsh T Ashwini S

Competition Wise Entry

Sr.No	Competition	Total Participants
1	Project Competition	35 groups (each of 4)
2	Mini-Project	18 groups (each of 4)
3	Debate Competition	15 group (each of 3)
4	Quiz Competition	30 pairs
5	Essay Competition	97
6	Coding Competition	70
	Total Participant's	**484**

About Inaugural Ceremony

Date: 5th May 2022 Time: 10.30 am to 11.30 am Total Participants: 100

The inauguration ceremony started with a warm introduction about Telekinesis-2022 and later on welcoming the Eminent Chief Guest of Honour Mr. Manoj Kumar Deshmukh, Deputy head of Nashik operation of Caprihans India Limited (CIL), Principal of K.K.W.I.E.E.R, Nashik Prof. Dr. K. N. Nandurkar Sir, Prof. Dr. D. M. Chandwadkar Head of Department of Electronics and Telecommunication Department.

Later on, the Inauguration Ceremony started with the introduction of Chief guest and followed by overall summary of Telekinesis. There on Chief Guest gave a speech followed by Prof. Dr. D. M. Chandwadkar followed by a speech by Prof. Dr. K. N. Nandurkar. Mr. Manoj Deshmukh sir also guided our students with their wisdom and precious knowledge. Students of K. K. Wagh attended the Ceremony in large numbers and appreciated the Guest's kind gesture to honor all of them with their gracious presence. At last, the inauguration ended with a Vote of thanks by Akshata Jadhav one of the coordinator of Telekinesis-2K22.

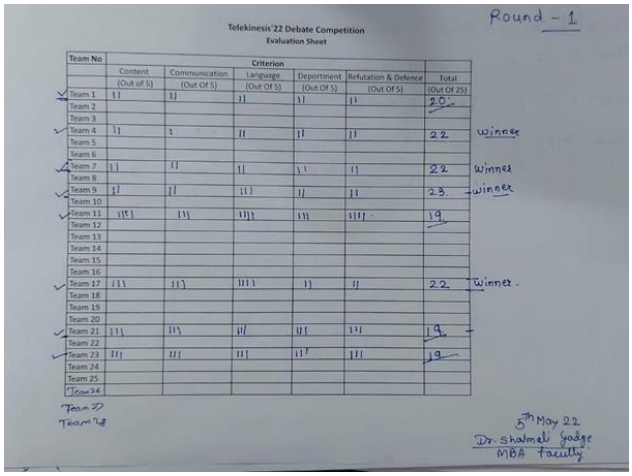
Competitions

1. **Project competition:**

   There were around 35 groups who participated in the Competition. For these competition students of last year Engineering and polytechnic have participated. Projects were based on different topics where some were Software based and some Hardware based. There were 3 judges who were judging the Competition and at the end of the Competition Three winners were given Cash Prizes.

2. **Debate Competition:**

   There were around 15 groups who participated in Debate Competition. The topics of Debate were decided and were given to Students one day before the event. On the Day of event random groups were called and a topic was given to them. A toss was tossed to decide whether they are going to speak in favor or against. There were 3 Judges to Judge the competition. At the end of Competition 3 winners were chosen and were awarded exciting cash prizes.



Round – 1

Telekinesis'22 Debate Competition
Evaluation Sheet

Team No	Criterion					
	Content (Out of 5)	Communication (Out Of 5)	Language (Out Of 5)	Deportment (Out Of 5)	Refutation & Defence (Out Of 5)	Total (Out Of 25)
Team 1	4	4	4	4	4	20
Team 2						
Team 3						
Team 4	4	5	4	4	4	22 winner
Team 5						
Team 6						
Team 7	4	4	4	5	4	22 Winner
Team 8						
Team 9	4	4	4	4	4	23 winner
Team 10						
Team 11	3	3	4	3	4	19
Team 12						
Team 13						
Team 14						
Team 15						
Team 16						
Team 17	4	4	4	4	4	22 Winner.
Team 18						
Team 19						
Team 20						
Team 21	4	4	4	4	4	19
Team 22						
Team 23	4	4	4	4	4	19
Team 24						
Team 25						
Team 26						

Team 7
Team 23

5th May 22
Dr. Shalmali Yadge
MBA Faculty

DEBATE MARKING SCHEME

3. Mini-Project Competition:

There were around 18 groups who participated in the Competition. For this competition students of First year to Third year Participated in the competition. Projects were based on different topics where some were Software based and some Hardware based. Also there were first year students who made a survey on a particular topic and presented before the Judge. There was one Judge, Judging the Competition and at the end of the Competition three winners were given Cash Prizes.

4. Coding Competition:

A coding competition was also held using Hacker rank. Participants from all over College had participated in this competition. There was a total of 70 participant's entry. Students of First year were competing with First year Students and same goes to Second and Third year Students. In total for each year we had 3 winner so we awarded total 9 winners for this Competition.

Rank	User	Score	Time	Country
1	ujjwaljha619	70.00	24:17	
1	atharvamore0011	70.00	37:04	
1	omkarg1417	70.00	37:56	
1	subodhkamde12	70.00	1:14:52	
5	SuhaanBhandary1	53.33	25:25	
6	shreyash_lanjew1	20.00	11:34	
6	s09kulkarni1	20.00	20:18	
6	k9chinmay	20.00	23:06	
6	harshalbhamre07	20.00	39:17	
6	gautambharte123	20.00	40:55	

CODING MARKING SCHEME

5. Essay Competition:

A total of 97 participants took part in the Essay competition. All Essays were submitted by participants on 5th May. There was no barrier of language (English, Marathi, Hindi) all were accepted. The word limit for the essay was 1500-3000. Judging criteria for Essay competition was Content, Clarity of topic, Presentation, Overall impression. Topics were provided to them one they prior and asked to submit essay on the day of event. For each language we awarded 2 winners so in total we awarded 6 winner for the competition.

Essay Writing Competition

Student Co-ordinators:

- Aditi Shrivastava
- Neha Lohiya
- Disha Kariya
- Akshada Pawar

Winners

- English Winners:
  - 1st – Darshana Mali
  - 2nd – Nandini Kotkar
- Hindi Winners:
  - 1st- Komal Makare
  - 2nd – Sayali Khobragade
- Marathi Winners:
  - 1st – Sakshi Nagare
  - 2nd - Purva Phadol

Evaluation Parameters:

- Focus or Thoughts
- Organisation of words
- Vocabulary
- Presentation Skills

6. **Quiz competition:**

A total of 30 pairs participated in the competition. The first round consisted of 3 rounds. Round 1 was written round were non-technical questions were asked to them and out of which 12 pairs were selected for the next rounds. Round 2 consisted of rapid fire which had question based on technical and non- technical in which 6 pairs were selected for the last round. The 3rd and the last round consisted of buzzer where first pair were given chance to answer who pressed buzzer first. At the end of competition top 3 pairs were awarded by cash prize.

ROUND 1:- written test (Top 12 contestants were shortlisted) ROUND 2:- rapid fire round (Top 6 competed against other) ROUND 3:- buzzer round (First guy to reach buzzer placed in between the room shortlisted top 3)

JUDGES:

Dr. Shalmali Gadge

Prof. Parag mondhe

Prof. Nikhil Bhujbal

- K. K. Wagh Institute of Engineering Education and Research, Nasik conducted a“AICTE IDEA Lab Faculty Development Program on Electronic Product Design” from27/06/2022 to 29/06/2022.
- The Three Days Faculty Development Program on Electronic Product Design under AICTE Idea Lab, is intended to provide participants with the introduction to the Schematic Designing for simple circuit using Eagle CAD software, Introduction to Embeded system design/ Ardinouno and its programming and Introduction to the PCB Milling Machine. Also, this workshop provides oppurtuinty to participants to work in team, build integrity and work in multidisciplinary fields.
- Participants from various multidisciplanary Departments such as MCA, E & TC, Mechanical, Electrical,civil and chemicalparticipated in said FDP. Around 15 participants have prepared PCB and understand the process making PCB in this FDP. They also understand and see the demostration of making PCB using PCB miling machine.
- Session were organized in online as well as offline mode followed by hands on experiments to the participants. The sessions are held in the basic electronis lab and IDEA LAB as well as computer lab of the department.

FDP TOPICS

- Schematic designing using Eagle CAD(online Lectrure by Kumar, NSUT, Delhi)
- Making PCB by using manual method and mounting different component
- Introducation to Embeded System Design/ Ardinouno programming
- Making of PCB using milling machine

Day 1 27/06/2022 Monday

- Demonstration of the Electronics Teaching Model and One digit thermometer to the participants
- Introduction to Eage CAD software
- Schematic designing using Eagle CAD

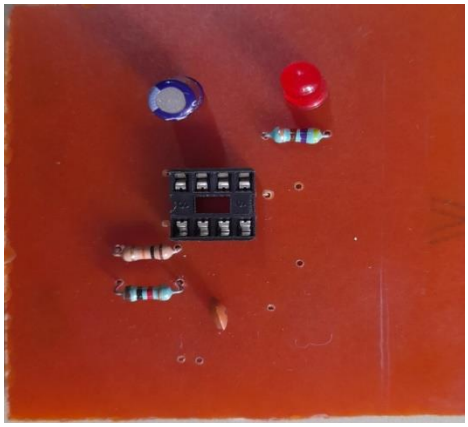
Day 2 28/06/2022 Tuesday

- Introductory lecture on Embeded System Design/ Ardinouno programming
- Installation of IDE, Accessing libraries
- Some Basic examples of ardinouno programming
- Eagle CAD software to make layout (Online Lecture by Kumar, Alumini NSUT ,Delhi)
- Fabrication of the PCB designed using Eagle CAD software

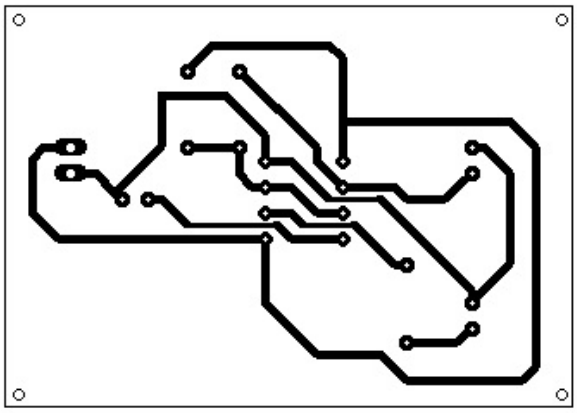
Day 3 28/06/2022

- Fabrication process of PCB eatching, drilling, soldring and testing the PCB.
- Introduction of PCB using milling machineand conversion of files required
- Demonstration of PCB making using milling machinein Idea Lab
- Validectory function

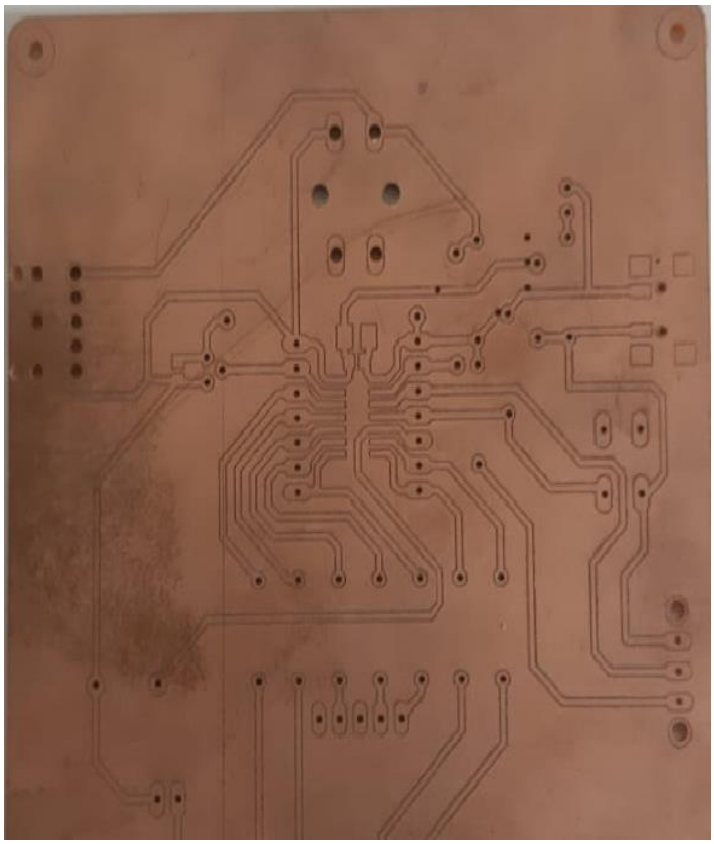
Models Prepared by participants:



PCB layout:

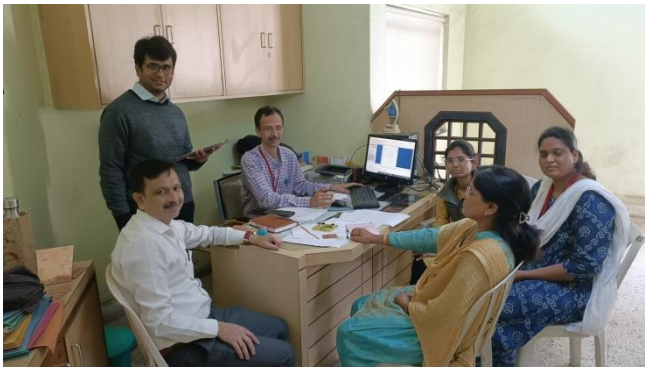


PCB Prototype using Miling Machine:



FDP Photographs


K. K. Wagh Institute of Engineering Education & Research, Nashik
IDEA LAB FDP ON Electronics Product Design
Inauguration

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IDEA LAB FDP ON Electronics Product Design


K. K. Wagh Institute of Engineering Education & Research, Nashik
IDEA LAB FDP ON Electronics Product Design

Research Paper

Title: Pulsar Detection System using Radio Telescope

Auther: Dr. S. A. Patil (Ugale), Prof. Dr. D. M. Chandwadkar, Abhinav Joshi, Rutwik Joshi, Mahak Jain

Institute: K. K. Wagh Institute of Engineering Education and Research, Nashik - 422003

Name of Journal: ADBU-Journal of Engineering Technology

Abstract:

Radio astronomers and researchers have detected numerous neutron stars in our galaxy, and they also predicted the existence of many more neutron stars in space. Pulsars are very peculiar, yet almost inscrutable celestial objects. This is an object which is impelling radiation into space closest to the speed of light. Neutron stars are the most interesting galactic bodies to mankind. The objective of this research work is to develop the intelligent system to detect the Pulsar. The fascinating properties of pulsar i.e. high density, a small diameter, strong gravity, and strong magnetic field are the main motivation behind the research work. Pulsars are distant objects with peculiar properties and the extreme nature, which enabled to draw the attention of Astronomers. The detection of Pulsar is a very tedious job. The radiations coming from pulsar are detected by the proposed system which consists of an antenna, filters, amplifiers, and receiver. The signal capture through the antenna is processed to extract the signal of importance buried in noise. The fast-folding algorithm (FFA) and Fast Fourier transform (FFT) techniques are proposed to detect the pulse signal from raw signal collected by antenna. The antenna design is also discussed in detail.

Keywords*: Pulsar detection, antenna design, software radio, PSD.*

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ADBU Journal of Engineering Technology

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Vision

Provide quality education to create engineering professionals of global standards by keeping pace with rapidly changing technologies to serve the society.

Mission

M1: To educate the students with the state-of-the-art technologies and value based education to meet the growing challenges of industry.

M2: To provide scholarly ambience & environment for creating competent professionals.

M3: To inculcate awareness towards societal needs.