

**Report on
Design Engineering Expert Talk**

19th June, 2021

Organized by

**ISA STUDENT SECTION
INSTRUMENTATION AND CONTROL
ENGINEERING DEPARTMENT,
L.D COLLEGE OF ENGINEERING**

During this online education impartation, students had less interaction with the seniors and their other mentors, many pre final year students were confused about their Design Engineering subject. Targeting to solve their questions and doubts related to Design engineering and to make them aware of Design engineering related sheet and Project of **B.E. Sem 5th students LDCE** with the Department of Instrumentation and Control, **L.D. College of Engineering along with SSIP (student startup and Innovation Policy of Govt. of Gujarat)** had organized an Interactive expert talked on “**Design engineering**” on Microsoft Teams platform on the date of 19 June 2021.

More than 60 students of pre final year from the Instrumentation and control department had taken the main benefit of this expert talk by clarifying their doubts and interacting with the expert.

The expert talk was conducted by Prof. N. D. Mehta , He as an Assistant Professor in Power Electronics Department VGEC, Chnadheda. He has more than 12 years’ experience in Power electronics field. He has having very good experience about Design Engineering Philosophy. He received the B.E (Power Electronics) form L .E. Collage, Morbi in 2000 , and M. Tech in Electrical (Power Apparatus and Systems) from Nirma University, Ahmedabad in 2008 with Gold Medal for Best Student in Electrical Engineering for the year 2008.

Expert talk started by Prof. Chandni V. Shah, Assistant Professor (I.C. Department) L.D. College of Engineering with a Welcoming Message for all the attendees followed by brief Introduction about the expert and him past professional experience. Along with that, ISA faculty advisor, and head of the department *Dr. Manish T. Thakker* to address the students and gave brief idea about Design Engineering subject and usefulness of DE in innovative projects under SSIP.

Then Prof. N. D. Mehta started the session by sharing him professional and personal experience as a Power Electronics engineer, further he guided the students with how to identify and nurture innovative project: Design Engineering Tool for innovation, Observation, Empathy Canvas, Mind mapping, Ideation Canvas, Product development canvas, Learning needs matrix, Prior art search and discussed about problems in current scenario with block diagram, implementation, prototype and customer review. End of session was open for the live Q&A in which students had interacted with the expert about their queries related to Design Engineering.

The session concluded with vote of thanks by Prof.C.V.Shah. The entire session is available online on **Useful link:** <https://youtu.be/NLLZNRcXUOc> and answering all the queries.

Glimpse of Expert Session:-

B.E. Sem 5th Design Engineering Expet talk on 19-6-21

23:31

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190280117071 PRASHANT T...
190280117072 JAY TRVEDI
190280117073 SUNNYKUMA...
190280117076 JAINIL VORA
317079 MOHIT MARU
317081 ANIRUDDHA PARMAR
317083 YASHKUMAR PATEL
317087 GAURAWSINGH SURY...
317088 TRUSHANK PATEL
ANKIT SHAH
KRUTI JOSHI
MANISH THAKKER
MANISHA PATEL

How to Identify and Nurture innovative project :
Design Engineering tool for innovation

PRESENTED BY :
PROF. N. D. MEHTA
ASSISTANT PROFESSOR , POWER ELECTRONICS DEPARTMENT
VISHWAKARMA GOVERNMENT ENGINEERING COLLEGE, CHANDKHEDA – 382424

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317083 YASHKUMAR ... 190280117073 SUNN... MANISH THAKKER nirav.mehta.pe (Guest) CS

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190280117033 NIREN NAKUM
190280117035 KHYATI PANC...
190280117036 UMANG PAN...
190280117039 FALGUNI PAR...
190280117041 SMIT PARMAR
190280117046 DHWANI PATEL
190280117048 KHUSHALI PA...
190280117049 KRISHNA PATEL
190280117050 MAITRI PATEL
190280117051 PUJAN PATEL
190280117052 RAVIKUMAR P...
190280117054 TAKSH PATEL

Content

- Motivation
- Problem Identification
- Design Engineering : Tool for Innovation
- Implementation of Project
- Customer Reviews
- Appreciation of Project
- Open Discussion

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28:13

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Motivation

Consider a situation where in the streetlight in your locality has stopped working Suddenly although it looks all good.

You try to google a phone number or an E-mail Address to complain about it and the responsible people assure you to repair it as soon As possible, but they do not stick to what they say, right?

You are now not able to walk Through that area because it's dark or it might even lead to an unfortunate activity.

On The contrary, many a times, you must have seen the streetlights remaining ON during The day because the responsible person forgot to turn OFF those lights and the Electricity is now getting wasted.

Participants

In this meeting (53)

190280117013 KUSHDIP ...

CHANDNI SHAH Organizer

190280117002 DIVYESH BAV...

190280117004 DHRUMIL BH...

190280117006 MEET BHUVA

190280117007 BHARGAV BO...

190280117010 PALLAV CHHA...

190280117011 KEYURKUMAR...

190280117014 GAUTAM DEV...

190280117017 JIGNESHBHAI ...

190280117018 JAYSHIL GOHEL

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32:20

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Design Engineering : Tool for Innovation Observation

AEIOU Summary:		
Environment:	Interactions:	Objects:
VAST AREA ECO-FRIENDLY TEMPERATURE INCREMENT	COLLEGES DOMESTICS POWER PLANTS AIRPORTS	SOLAR PANEL BATTERY POWER INVERTERS ANTI-REFLECTION GLASS SENSORS FILTERS
Activities:	Users:	
SOLAR HEATING PHOTOVOLTAIC ARTIFICIAL PHOTOSYNTHESIS SOLAR THERMAL ENERGY SOLAR CHARGING	ENGINEERS PRIVATE SECTORS PUBLIC SECTORS DOMESTIC USERS STUDENTS	

Participants

In this meeting (54)

190280117049 KRISHNA ...

CHANDNI SHAH Organizer

190280117002 DIVYESH BAV...

190280117004 DHRUMIL BH...

190280117006 MEET BHUVA

190280117007 BHARGAV BO...

190280117010 PALLAV CHHA...

190280117011 KEYURKUMAR...

190280117013 KUSHDIP DAD...

190280117014 GAUTAM DEV...

190280117017 JIGNESHBHAI ...

317083 YASHKUMAR ...

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MANISH TH

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Design Engineering : Tool for Innovation

Mind Mapping

Participants

Invite someone or dial a number

Manage interests

TOP STORIES >

- The Print - 2h
Novavax vaccine Covovax could be available in India soon: How it works
- Jagran English - 55m
Govt refutes reports of alleged black money held by Indians in Swiss bank
- News18 - 1h
India will think of playing extra batsman and drop one spinner: Gavaskar

TARAPUR, GUJARAT

30°C
Light rain
80%
See full forecast

SUGGESTED FOR YOU

TATAMOTORS
Tata Motors Ltd 337.40 -2.39%

532656
Fator: Alloye Ltd 4.25 -1.85%

International Cricket

ENG SL
23 Jun 11:00 pm
See more International Cricket

TRAFFIC UPDATES

NH751 / NH751D / S...
Mumbai Traffic

Horoscope for June 19 by Astro Sundeep Kochar: Control your shopping urge Scorpios, take

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38:21

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Design Engineering : Tool for Innovation

Empathy Canvas

Participants

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- 1P 190280117049 KRISHNA ...
- CS CHANDNI SHAH
Organizer
- 1B 190280117002 DIVYESH BAV...
- 1B 190280117004 DHRUMIL BH...
- 1B 190280117006 MEET BHUVA
- 190280117007 BHARGAV BO...
- 1C 190280117010 PALLAV CHHA...
- 1C 190280117011 KEYURKUMAR...
- 1D 190280117013 KUSHDIP DAD...
- 190280117014 GAUTAM DEV...
- 1G 190280117018 JAYSHIL GO... On hold

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45:26

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Design Engineering : Tool for Innovation Ideation Canvas

The Ideation Canvas: Ideation Canvas Project: SOLAR STREET LIGHT Team: 05

ENGINEERS	STUDENTS	FARMERS	COOKS	SCIENTIST
Activities		Situations/Contexts/Location		
HEATING	COOKING	FARMS	POWER PLANTS	AUTOMOBILING
CHARGING	AGRICULTURE	ROOFTOPS	HILLAREAS	DESERTS
		RESEARCH CENTERS		
Proins				
INVERTERS	STORAGE TANKS	MONITORING SYSTEMS	PROTECTION DEVICES	HARNESSING CONVERTER CONTROLLERS

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50:11

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Design Engineering : Tool for Innovation Product Development Canvas

Product Development Canvas Item: Solar Street Light 8:03 6th MAY / 2016

Purpose	Product Experience	Customer Revitalization
TO SAVE ELECTRICITY	HIGH INITIAL COST	SAVE ELECTRICITY
FOR HIGHER EFFICIENCY	MORE EFFICIENT	
FOR HIGHER DURABILITY	Product Functions	
	POWER GENERATION HEATING CHARGING FUEL PRODUCTION	
	Product Features	
	ECOFRIENDLY RENEWABLE LOW MAINTENANCE COST	
	ABUNDANTLY AVAILABLE EASILY MAINTAINABLE	
	Components	
	PANELS BATTERIES POWER INVERTERS	
	CHARGE CONTROLLERS STORAGE TANKS CONVERTERS	
		LOW VOLTAGE GENERATION VERY SPACIOUS HIGH INITIAL COST

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190280117010 PALLAV CHHA...

190280117013 KUSHDIP DAD...

190280117018 JAYSHIL GO... On hold

190280117022 VATSAL KANT...

190280117026 VIDHI MEHTA

190280117027 SMIT MEVADA

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57:24

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Design Engineering : Tool for Innovation

Learning Needs Matrix

Group ID :- 05 Date :- 07 MAY 2016

Skills/Knowledge Area	During BE IV	During BE III	During BE II
Concept/Control	VOLTAGE CONTROL	DRUCK-BRIST CONVERTED GSM OPERATING WITH ARDUINO	APPLICABLE STANDARDS AND DESIGN SPECIFICATIONS/ PRINCIPLES AND EXPERIMENTS
Methodology	DEEP PROFORMANCE CONTROL		
Theoretical	OVERCHARGE CONTROL		
Application			
Process			
Problem Solving			
Auto Turn On-Off			
Software/Simulation/Skill			
Mathematical Requirement			
Proficiency			
Material			
Assembly			
Documentation			

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Participants

- CHANDNI SHAH (Organizer)
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- 190280117004 DHRUMIL BH...
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- 190280117007 BHARGAV BO...
- 190280117010 PALLAV CHHA...
- 190280117013 KUSHDIP DAD...
- 190280117018 JAYSHIL GO... On hold
- 190280117022 VATSAL KANT...
- 190280117026 VIDHI MEHTA
- 190280117027 SMIT MEVADA

12:23 PM 6/19/2021

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01:00:13

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Block Diagram

```

graph TD
    SUN((SUN)) --> SP[SOLAR PANEL]
    SP --> CC[CHARGE CONTROLLER]
    CC --> BATT[12V BATTERY]
    BATT --> ARDUINO[ARDUINO UNO]
    ARDUINO --> LED[STREET LED]
    ARDUINO --> GSM[GSM MODULE]
    ARDUINO --> SENS1[SENSOR-1]
    SENS2[SENSOR-2] --> ARDUINO
    ARDUINO --> VREG[VOLTAGE REGULATION CIRCUIT]
    VREG --> LED
  
```

Participants

- CHANDNI SHAH (Organizer)
- 190280117002 DIVYESH BAV...
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- 190280117013 KUSHDIP DAD...
- 190280117018 JAYSHIL GO... On hold
- 190280117026 VIDHI MEHTA
- 190280117027 SMIT MEVADA
- 190280117028 GAURAV MIS...
- 190280117029 SAGARIKA MISS

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01:02:22

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Working

BULB TYPE	STANDARD	HALOGEN	CFL	LED
450 LUMENS	40W	29W	9W	6W
800 LUMENS	60W	42W	14W	9W
1100 LUMENS	75W	53W	18W	11W
1600 LUMENS	100W	72W	23W	14W
RATED LIFE	1 YEAR	1-3 YEARS	6-10 YEARS	12-25 YEARS
SAVINGS	X	UP TO 30%	UP TO 75%	UP TO 90%

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- 190280117007 BHARGAV BO...
- 190280117010 PALLAV CHHA...
- 190280117013 KUSHDIP DAD...
- 190280117018 JAYSHIL GO... (On hold)
- 190280117022 VATSAL KANT...
- 190280117026 VIDHI MEHTA
- 190280117027 SMIT MEVADA

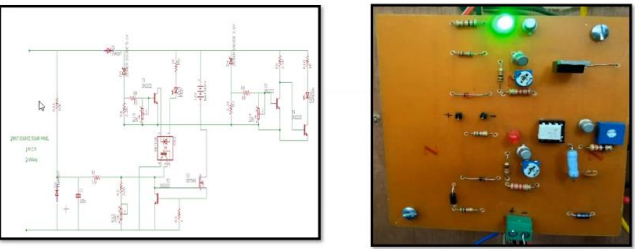
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Implementation



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- 190280117007 BHARGAV BO...
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- 190280117022 VATSAL KANT...
- 190280117026 VIDHI MEHTA
- 190280117027 SMIT MEVADA

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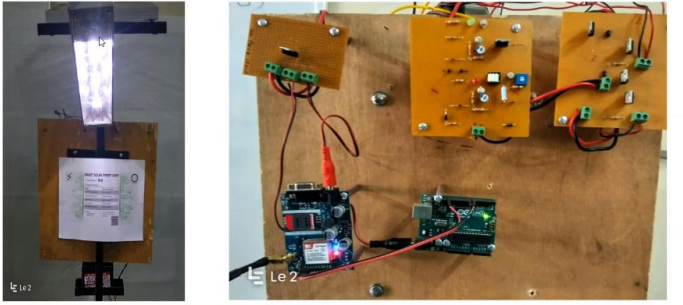
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Dirty Prototype



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- 317085 JAYMINKUMAR SOM...
- 317087 GAURAVSINGH SURY...
- 317088 TRUSHANK PATEL
- ANKIT SHAH
- MANISH THAKKER
- MANISHA PATEL
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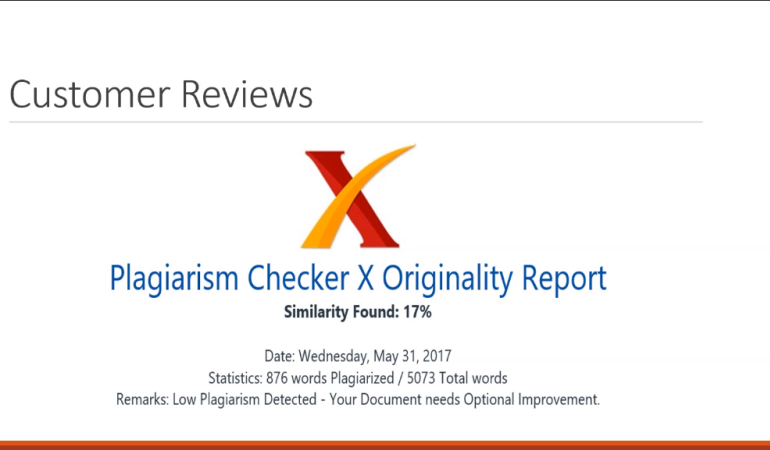
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