



JAIPUR ENGINEERING COLLEGE  
AND RESEARCH CENTRE

Department of Spiritual Research Cell

**Research Facility**

**MAKER'S SPACE**

(Mukesh Agarwal)

PRINCIPAL  
Jaipur Engineering College &  
Research Centre  
Tarak Road, Jaipur-302012



JAIPUR ENGINEERING COLLEGE  
AND RESEARCH CENTRE



**3 D Printing Zone**

(Mukesh Agarwal)

PRINCIPAL  
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Research Centre  
Tarak Poadi, Jaipur-302022



JAIPUR ENGINEERING COLLEGE  
AND RESEARCH CENTRE



Latitude: 26.781337  
Longitude: 75.821452  
Altitude: 317.2±2 m  
Accuracy: 49.4 m  
Time: 21-12-2022 12:52  
Note: makers space

Powered by NoteCam

**3 D Printing Machine**

(Mukesh Agarwal)

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Research Centre  
Tarak Poddar, Jaipur-302022



JAIPUR ENGINEERING COLLEGE  
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**Solar Energy Trainer**

(Mukesh Agarwal)

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JAI PUR ENGINEERING COLLEGE  
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Research Centre  
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Latitude: 26.781506  
Longitude: 75.821374  
Elevation: 367.66±2 m  
Accuracy: 5.7 m  
Time: 21-12-2022 13:00  
Note: makers space

### SOLAR DATALOGGER TRAINER

(Mukesh Agarwal)

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Research Centre  
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**Development Kit**

(Mukesh Agarwal)

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## Solar Zone



**Embedded Zone**

(Mukesh Agarwal)

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Latitude: 26.781513  
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Elevation: 367.36±3 m  
Accuracy: 5.3 m  
Time: 21-12-2022 12:56  
Note: makers space

Powered by NoteCam

(Mukesh Agarwal)

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Research Centre  
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Latitude: 26.781478  
Longitude: 75.821382  
Elevation: 367.46±3 m  
Accuracy: 6.3 m  
Time: 21-12-2022 13:00  
Note: makers space

Powered by NoteCam

**Solar Energy Trainer and Solar Data logger Trainer**

(Mukesh Agarwal)

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Research Centre  
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Latitude: 26.781504  
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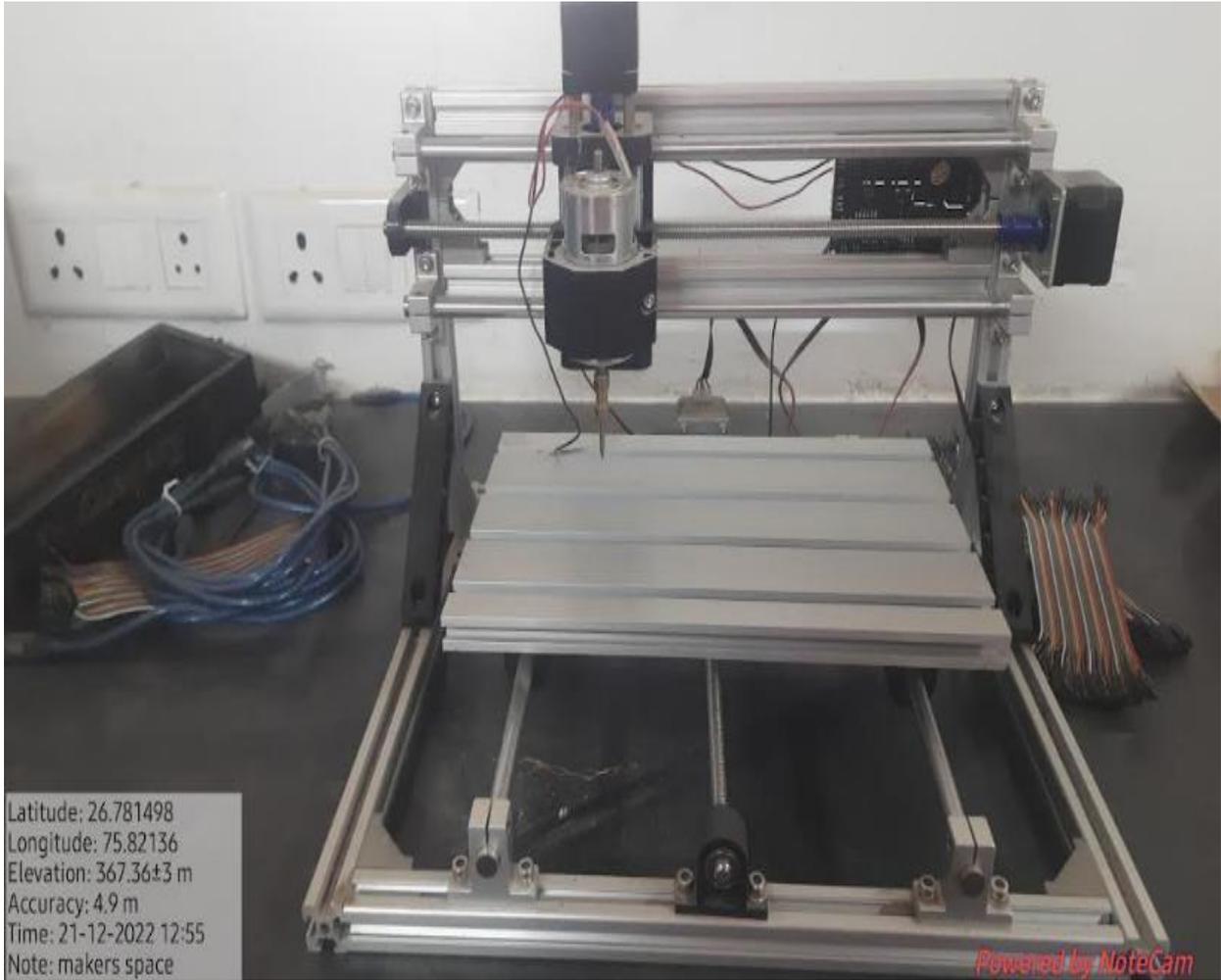
**Toolkit**

(Mukesh Agarwal)

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Research Centre  
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Latitude: 26.781498  
Longitude: 75.82136  
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Accuracy: 4.9 m  
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Note: makers space

(Mukesh Agarwal)

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Latitude: 26.781574  
Longitude: 75.821406  
Elevation: 366.6644 m  
Accuracy: 7.9 m  
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Note: makers space

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Latitude: 26.781599  
Longitude: 75.8214  
Elevation: 366.76±4 m  
Accuracy: 8.3 m  
Time: 21-12-2022 12:53  
Note: makers space

### Development Kit

(Mukesh Agarwal)

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## Machinery and Equipment at Makers' Space

S.No	Firm Name	Voucher No.	Date	Full Specification	Quantity Received	Purchase Price (In Rs.)				
1	Skrips Info Solution	IN-44	05/10/2019	Holographic Projector	1	32,203.39				
				Shipping Charge	1	95.31				
				IGST 18%		5,813.77				
				Round Off		0.53				
<b>Bill Total</b>						<b>38,113.00</b>				
2	DAZZLE ROBOTICS PVT.LTD	DZR/19/09719	07/10/2019	Mini CNC	1	17,510.00				
				Bluedart shipping charge		955.68				
				IGST 18%		3,323.82				
				Round Off		0.50				
<b>Bill Total</b>						<b>21,790.00</b>				
3	Skyking Instruments	YWJC-338	5/10/2019	DC Powr Suply SMPS	1	7,500.00				
				GST 18%		1,350.00				
				<b>Bill Total</b>						<b>8,850.00</b>
4	Cloudbtail India Private Limited	DELS-10918279	5/10/2019	A. Aeroforce-AE-S84-84pcs 1/4"&1/2" Dr.Tool Set	1	5,777.97				
				B. Bosch GSB 180-LI 18V Cordless Impact Drill	1	8,266.95				
				C. Bosch 2607019331 titanium Drill and Screwdriver	1	2,811.02				
				D. Echo Dot(3rd Gen) Smart Speaker with ALEXA	1	2,117.80				
				IGST 18%		3,415.26				
<b>Bill Total</b>						<b>22,389.00</b>				
5	RealTech Scientronix Sysytem	1373	21/11/2019	A. Solar Tool Kit	1	18,760.00				
				B. Solar Safety Kit	1	9,340.00				
				C. Solar PV Trainer Kit	1	33,810.00				
				D. Solar PV Trainer Kit	1	35,780.00				
				E. Solar DataLogger	1	38,350.00				
				Total						136,040.00
				Discount 28%						-38,091.20
				CGST 2.5%						2,448.72
				SGST 2.5%						2,448.72
Round off						-0.24				
<b>Bill Total</b>						<b>102,846.00</b>				
6	S. Kalra Refrigeration & air Conditioers	2941	21/12/2019	HV AC Tool Kit	1	20,500.00				
				CGST 9%		1,845.00				
				SGST 9%		1,845.00				
				<b>Bill Total</b>						<b>24,190.00</b>
7	Exackt Techfleeters Pvt. Ltd	1008	05/12/2019	A. Exackt's HEXA TOWER	5	12,500.00				
				B. Exackt's EXADUINO	5	17,500.00				
				C. Exackt's EXABERRY	5	21,000.00				
				D. RF TransmitterExackt's HEXA TOWER	5	800.00				
				E. GSM Module SIM & GPS Module	1+1	1,560.00				
				F. HC05	5	1,300.00				
				G. Sensors(HCSR04,	5+2+2+2	1,365.00				
				H. Motors(SimpleDC, Stepper, Servo	6+1+1+1	1,210.00				
				I. EXACKT Robotic Platform Set	1	245.00				
				J. 8X8 LED Matrix Board	1	168.00				
				K. EXACKT Arduino Nano Dev Kit	1	450.00				

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 Tatyasaheb Kore  
 Wankhede, Mumbai-400075

				L. Bread Board Kit	1	330.00
				M. USB Camera for RPi	1	550.00
				N. EM18 with Tag	1+2	390.00
				O. 12V 1A DC Adaptor	10	700.00
				<b>Bill Total</b>		<b>60,068.00</b>
8	Latashri 3D Creations	L3D/PI/2019-20/025	05/12/2019	3D printer(300*300*301 mm)	1	359,629.00
				Training	6 Days	10,000.00
				Discount(RTU affiliation 25%)		-91,594.00
				Discount(Research Institution 25%)		-91,594.00
				CGST 9%		16,780.00
				SGST 9%		16,780.00
				<b>Bill Total</b>		<b>220,001.00</b>
<b>Grand Total</b>						<b>498,247.00</b>




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**JAIPUR ENGINEERING COLLEGE AND RESEARCH CENTRE,  
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**Workshop on  
“Designing and Assembling of Quadcopter  
Using Embedded System”**

**Department of Electronics and Communication**

**Session 2021-22**



Head of the Department  
Electronics & Communication Engineering  
JECRC, Jaipur



**JECRC**

**Electronics and Communication Department**

### **VISION**

To contribute to the society through excellence in scientific and technical education, teaching and research aptitude in Electronics & Communication Engineering to meet the needs of Global Industry.

### **MISSION**

- To equip the students with a strong foundation of basic sciences and domain knowledge of Electronics and Communication Engineering, so that they are able to creatively apply their knowledge to the solution arising in their career path.
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- Students are able to communicate their ideas clearly and concisely so that they can work in a team as well as an individual.
- To make students responsive towards the ethical, social, environmental and economic growth of the society.



Head of the Department  
Electronics & Communication Engineering  
JECRC, Jaipur



## **Contents**

1. Notices, Circulars and Brochure
2. Time Table
3. Minutes of Meeting
4. Participants list
5. Attendance sheet
6. Photographs



Head of the Department  
Electronics & Communication Engineering  
JECRC, Jaipur



**Jaipur Engineering College & Research Centre, Jaipur**  
**Department of Electronics & Communication Engineering**

<b>From: ECE Department</b>	<b>To: HoD ECE</b>
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**Note Sheet**

**Subject:** Approval of 3 days workshop on “Designing and Assembling of Quadcopter Using Embedded System”

The department of Electronics & Communication Engineering is going to organize 3 days workshop on “**Designing and Assembling of Quadcopter Using Embedded System**” in association with Optica student chapter and IEEE Rajasthan Subsection.

Most of the courses are not included in RTU curriculum which is the measure gap between academia and industries.

Date	4-6 April 2022
Timings	10.00am to 04.00pm
Venue	C Block Seminar Hall (C-401)
Faculty Coordinator	Mr. Vikas Sharma, Mr. Ashish Kulshrestha
Registration Fees	Nil

I request you to kindly permit us to conduct this workshop.

Submitted for kind approval

**Mr. Vikas Sharma**  
**Mr. Ashish Kulshrestha**  
**Event Coordinators**

**Dr. Sandeep Vyas**  
**HoD, ECE**



**Topic of the Event:** “Designing and Assembling of Quadcopter Using Embedded System”

**Introduction about the event:** Applications for smaller Unmanned Aerial Vehicle (UAV) have significantly increased in recent decades. Quadcopter is one of the most successful vertical take-off and landing vehicle with autonomous flight control and stable hovering capabilities. These prominent features have led to a rise in Quadcopter research in universities as well as industries. Quadcopter project engages people from Electrical, Mechanical and Computer science background with knowledge on various concepts like Control systems, Real-Time Embedded Systems, Robotics and Navigation. This web-page provides you detailed information on the mechanics of Quadcopter, Concepts of Flight control along with programming and testing for stable flight.

A Quadcopter (Quad-rotor helicopter) is a multi-rotor aerial vehicle that is lifted and propelled by four rotors. The thrust generated by the propellers lifts the Quadcopter while the flight controller system governs the rotor speed for attitude control. A wireless remote control is used to interact with the flight controller system for changing the flight path. We begin by explain the basics of Quadcopter mechanics, then sections explaining the mechanical design approach, algorithms and parameters used for stable flight control, and lastly the testing and tuning mechanism.

In this workshop students learnt about all the aerodynamics basics regarding designing and assembling the quadcopters and applications of the quadcopters.

**Brief Profile of Speaker:**

**Mr.Sidharth Singh: Founder & Director Upflairs Pvt. Ltd.**

Mr. Singh did his B.Tech in 2011 from Uttar Pradesh Technical University, Lucknow. He has keen interest in Embedded system and robotics. He played a vital role in training and nurturing the skills among students of Engineering.



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### Mr. Sidharth Singh

Recently he is also working on projects based on Data science and artificial intelligence. He has conducted & planned various workshops across the country in different colleges including the eminent IITs, MNITs & NIITs. He has regular interaction with the upcoming youth on the webinars and seminars & providing all the technical inputs for the subjective as well as objective knowledge.

Schedule of the event: The event was scheduled during 4-6<sup>th</sup> April 2022

### Poster of the event:

Head of the Department  
Electronics & Communication Engineering  
JECRC, Jaipur



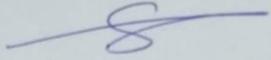
**List of Participants:**

S. No.	RTU Roll No.	NAME OF PARTICIPANTS
1	19EJCEC001	ABHISHEK AGRAWAL
2	19EJCEC002	ADITI JAIN
3	19EJCEC003	ADITI MALHOTRA
4	19EJCEC004	ADITI SHARMA
5	19EJCEC005	ADITYA MEHTA
6	19EJCEC006	ADITYA RAJ
7	19EJCEC007	ADITYA SHRIVASTAVA
8	19EJCEC008	ADITYA SWARNKAR
9	19EJCEC009	AISHWARYA LODHA
10	19EJCEC010	AJEET SINGH JAT
11	19EJCEC011	AKASH SONI
12	19EJCEC012	AKSHAT JAIN
13	19EJCEC013	AKSHAT SINGHAL
14	19EJCEC014	AKSHAY ARORA
15	19EJCEC015	AKSHIT JAGETIYA
16	19EJCEC064	HARDIK SINGH BISHT
17	19EJCEC065	HARKISHAN S WALIA
18	19EJCEC066	HARSH GURJAR
19	19EJCEC067	HARSH JAIN
20	19EJCEC068	HARSH SHARMA
21	19EJCEC069	HARSH VARDHAN SINGH
22	19EJCEC070	HARSHDEEP SINGH SONGARA
23	19EJCEC071	HARSHIT BHAT
24	19EJCEC072	HARSHITA SHARMA
25	19EJCEC073	HASAN
26	19EJCEC074	HIRANSHI MALVI
27	19EJCEC075	HITESHA KUMARI
28	19EJCEC076	INDRAYSH VIJAY
29	19EJCEC077	ISHIKA GUPTA
30	19EJCEC078	ISHIKA VAISHNAV
31	19EJCEC124	NIKHIL MITTAL
32	19EJCEC125	NIRALI GARG
33	19EJCEC126	NISHANT KUMAR
34	19EJCEC127	NISHANT KUMAR PATHAK
35	19EJCEC128	PALAK MARWAL
36	19EJCEC129	PARAG GUPTA

  
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Electronics & Communication Engineering  
JECRC, Jaipur

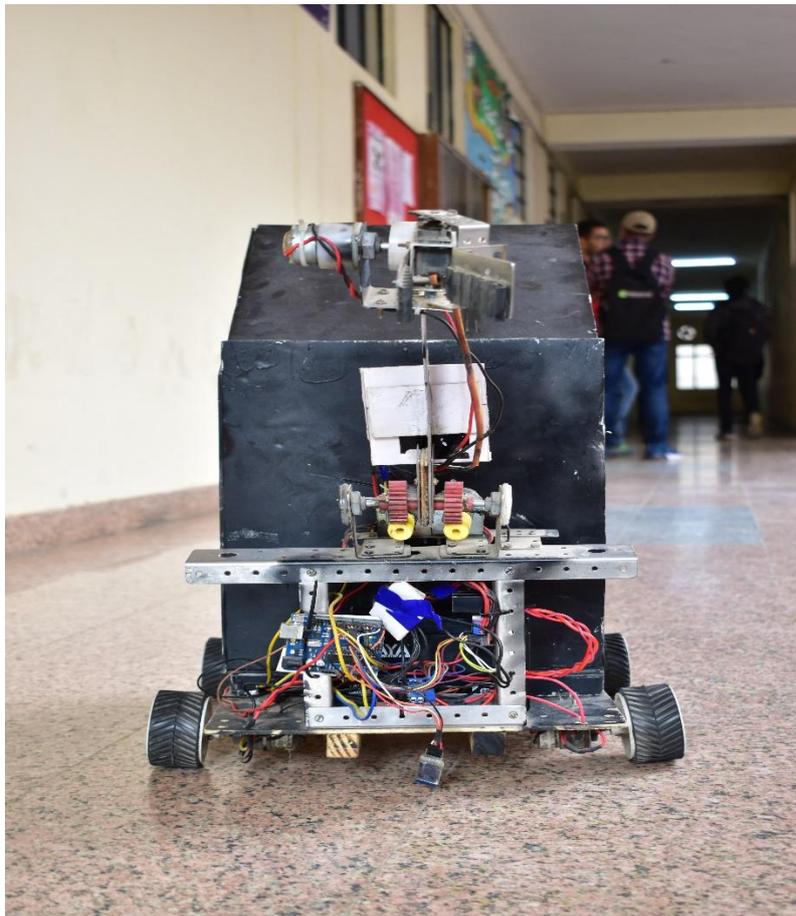


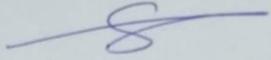
37	19EJCEC130	PARIDHI PUNGLIA
38	19EJCEC131	PARISHI SHARMA
39	19EJCEC132	PARTH PAREEK
40	19EJCEC133	PARTH SHARMA
41	19EJCEC134	PIYUSH KUMAR
42	19EJCEC135	PRACHI MAHESHWARI
43	19EJCEC136	PRACHI SONI
44	19EJCEC137	PRADEEP KUMAR
45	19EJCEC138	PRASHUN RAJ
46	19EJCEC186	SHAILENDRA SINGH RANAWAT
47	19EJCEC187	SHALIN MALOO
48	19EJCEC188	SHASHANK SINGH
49	19EJCEC189	SHAVI BAFNA
50	19EJCEC190	SHIKHA JAT
51	19EJCEC191	SHIVAM KALANI
52	19EJCEC192	SHIVESH SINGH
53	19EJCEC193	SHREYANS GELDRA JAIN
54	19EJCEC194	SHRUTI MITTAL
55	19EJCEC195	SHRUTI SHARMA
56	19EJCEC196	SHUBHAM MAHESHWARI
57	19EJCEC197	SHUBHAM SINHA
58	19EJCEC198	SIDDHAM JAIN
59	19EJCEC800	SIMRAN KAUR
60	19EJCEC801	SOMYA SINGH

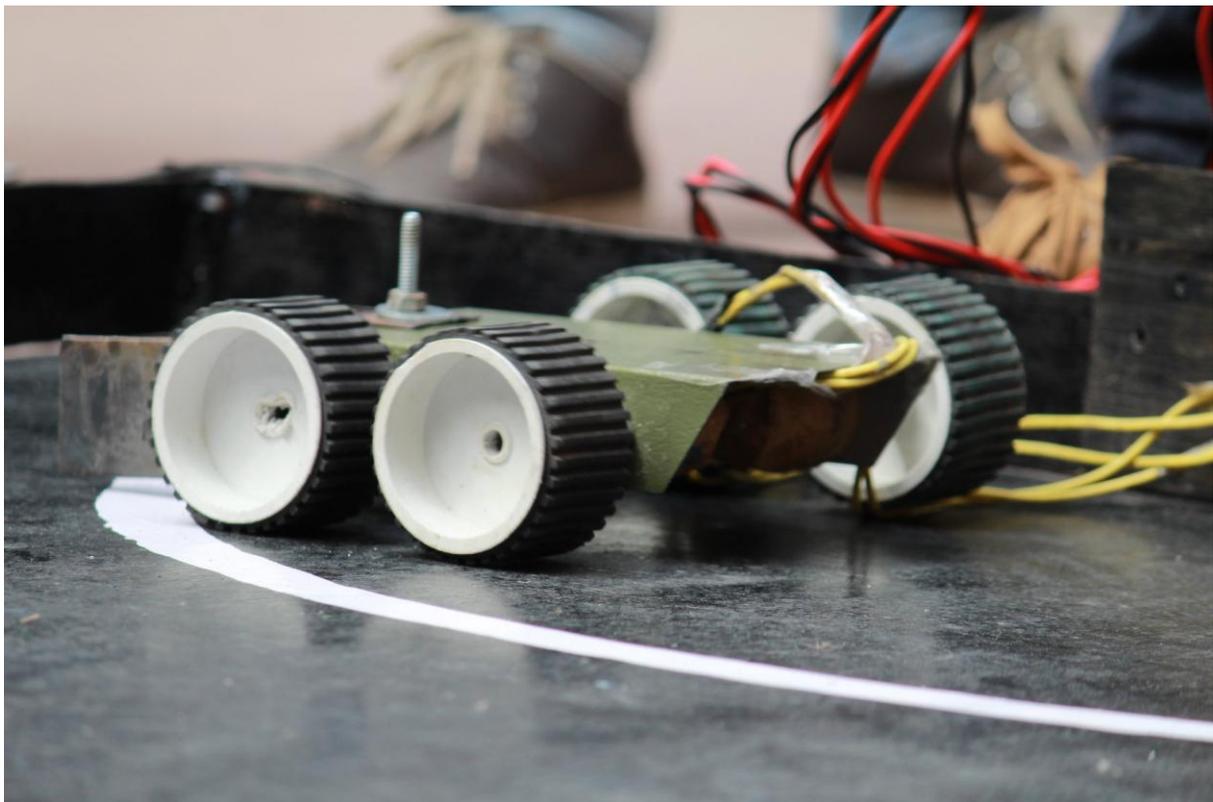
  
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**Photographs of the event:**



  
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Electronics & Communication Engineering  
JECRC, Jaipur



  
Head of the Department  
Electronics & Communication Engineering  
JECRC, Jaipur



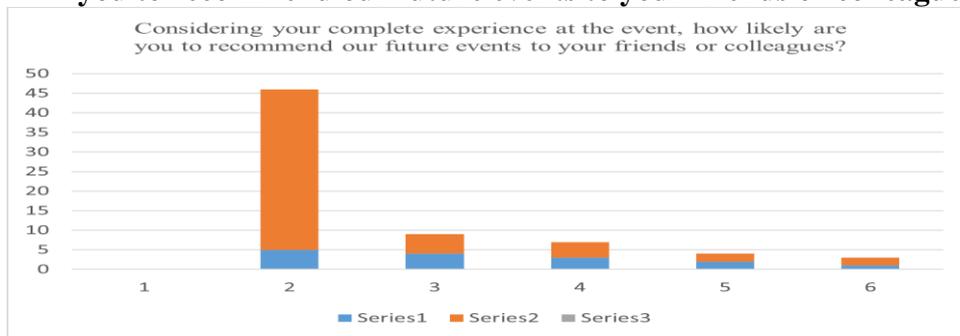
**Feedback and suggestions:**

After successful conduction of the workshop a feedback link had been shared with all the participants and asked for the feedbacks and suggestions to improve the quality and level of the event. Following are the graphs of the responses received. We also received some verbal feedbacks as event was very successful and they enjoyed and learnt a lot here in JECRC.

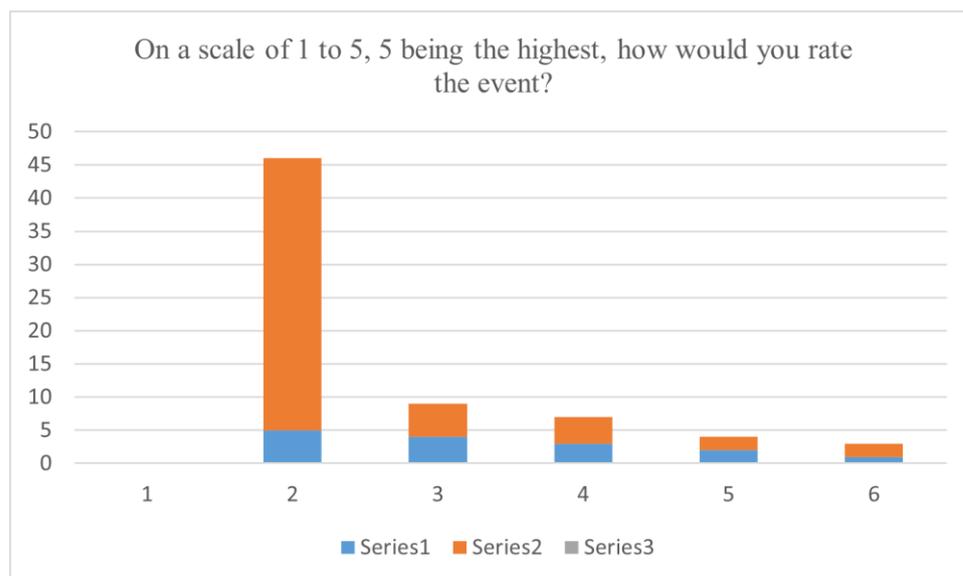
**Feedback Link:**

[https://docs.google.com/forms/d/e/1FAIpQLScvcP\\_I9qD-EYScdLzbcplL541pzeDkKkiWZDFJXcXSLWqG9g/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLScvcP_I9qD-EYScdLzbcplL541pzeDkKkiWZDFJXcXSLWqG9g/viewform?usp=sf_link)

**Q.1 Considering your complete experience at the event, how likely are you to recommend our future events to your friends or colleagues?**



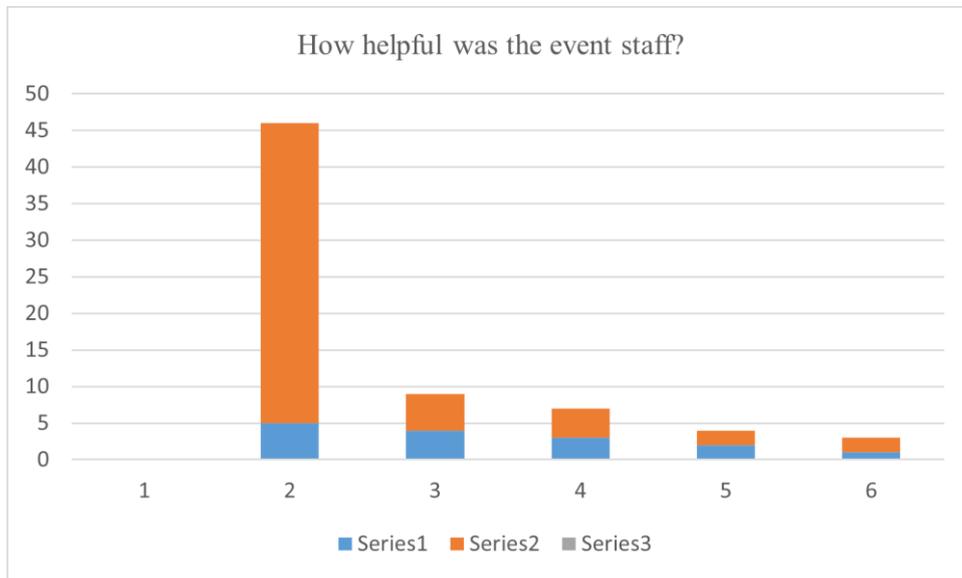
**Q.2 On a scale of 1 to 5, 5 being the highest, how would you rate the event?**



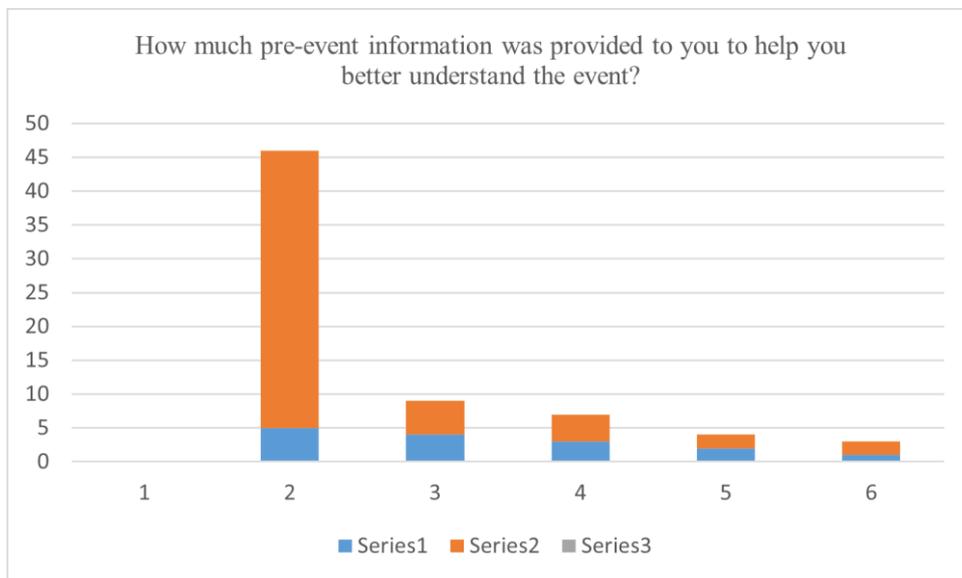
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JECRC, Jaipur



**Q.3 How helpful was the event staff?**



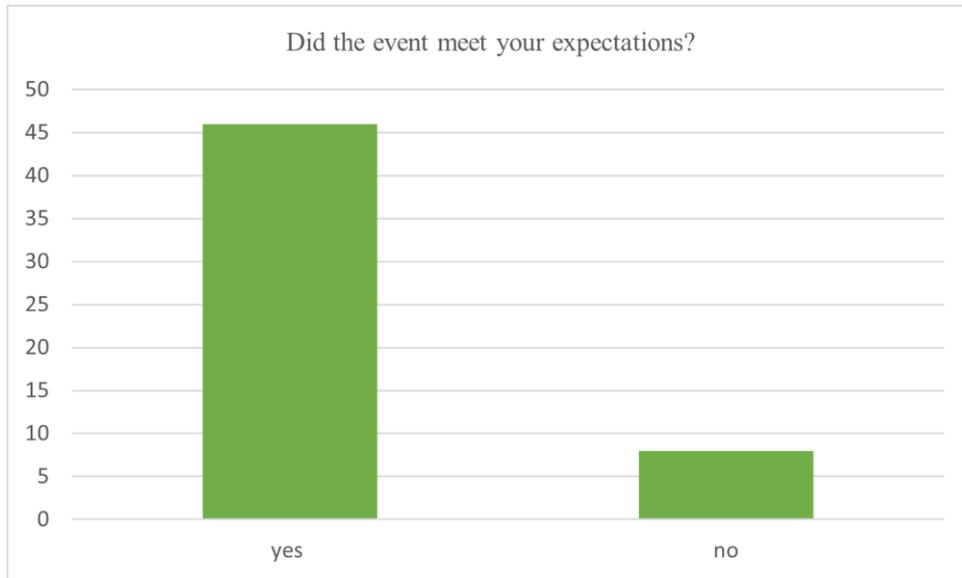
**Q.4 How much pre-event information was provided to you to help you better understand the event?**



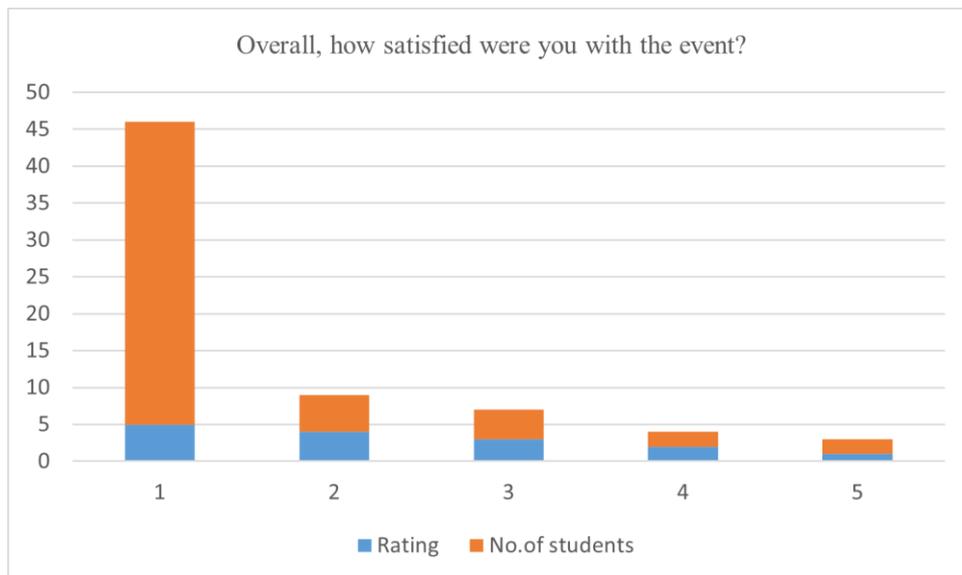
  
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**Q.5 Did the event meet your expectations?**



**Q.6 Overall, how satisfied were you with the event?**



  
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## Certificates:



**JAIPUR ENGINEERING COLLEGE  
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**IEEE**  
RAJASTHAN SUBSECTION

**STUDENT CHAPTER**  
**OPTICA**  
JECRC FOUNDATION JAIPUR



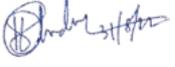
**ANITE**  
Scheme for Promoting Interests,  
Creativity & Ethics among Students  
(SPICES) Teams  
Institutional Development Cell  
All India Council for Technical Education, New  
Delhi

# CERTIFICATE

This is to certify that **Mr./Ms. Shavi Bafna** From **Jaipur Engineering College and Research Centre** has participated in **Three Days Workshop in "Designing and Assembling of Quadcopter Using Embedded System"** on **4-6 April 2022**.

in association with

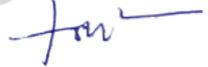
IEEE Rajasthan Subsection  
&  
OPTICA Student Chapter, JECRC



**Prof. V.K Chandna**  
PRINCIPAL



**Prof. Sandeep Vyas**  
HOD, ECE



**Mr. Ashish Sharma**  
TPO, ECE



**Mr. Vikas Sharma**  
COORDINATOR

  
Head of the Department  
Electronics & Communication Engineering  
JECRC, Jaipur



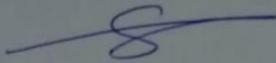
**JAIPUR ENGINEERING COLLEGE AND RESEARCH CENTRE,  
JAIPUR**



**Workshop on  
“Design and Optimization of Solar PV  
System”**

**Department of Electronics and Communication**

**Session 2021-22**



Head of the Department  
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JECRC, Jaipur



**JECRC**

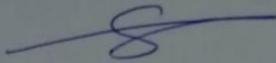
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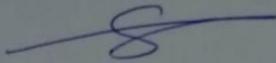


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1. Notices, Circulars and Brochure
2. Time Table
3. Minutes of Meeting
4. Participants list
5. Attendance sheet
6. Geotagged Photographs with date and caption for each scheme or event.



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JECRC, Jaipur



# Jaipur Engineering College and Research Center

## Department of Electronics and Communication Notice

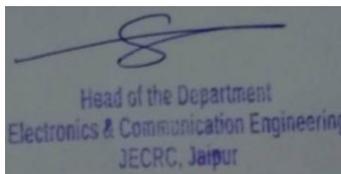
From HOD, ECE	Students
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Date -30/09/2021

### WOKSHOP

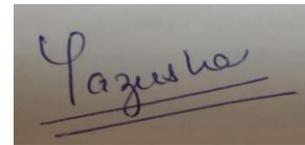
This is to inform all students that Department of Electronics and Communication is conducting a workshop on “Design and Optimization of Solar PV System”. Those students who are interested can contact to Ms. Yazusha Sharma, Assistant professor, ECE for more information.

The workshop will be conducted from 3<sup>rd</sup> October -7<sup>th</sup> October, 2021.

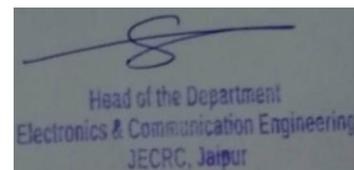


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Prof.(Dr.) Sandeep Vyas  
Head of Department



Ms. Yazusha Sharma  
Assistant Professor



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## Workshop Report

### *“Design and Optimization of Solar PV System”*

Department of Electronics and Communication Engineering, Jaipur Engineering College & Research Center (JECRC), Jaipur has organized a Workshop on “**Design and Optimization of Solar PV System**“, from 03/10/2021 to 07/10/2021. All registered participants received E-certificates after the end of session.

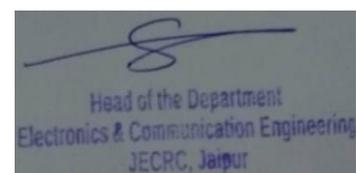
Registration for this event was done by using google form and it is free. The tutor for this certification courses was Dr. Ranjan Bahera.

The brief bio of speaker is attached as follow.

#### **About the Speaker:**



Dr. Ranjan Kumar Bahera : He is Professor in **Department of Electrical Engineering, Indian Institute of Technology Patna Indian Institute of Technology Patna**. He has 12 Journal publication, 2 Book chapter and more than 44 conference publications. He has specialization in Electronics Circuits, Control of Electrical Drives, Application of Nonlinear Control Theory to Power Electronics and Electric Drives, Pulse Width Modulation Techniques for Power Electronics, Renewal Energy Integration.





Trained 6000+ Students in the field of Solar cell and Renewable energy source domains during Workshop and Bootcamp Trainings.

- Trained Corporate Professionals from prestigious companies like cardekho.com, Reliance Jio, Genus, Ebay, Ericsson, IBM, Dotsquare, IIHT, Genpact, TCS, Wipro, Secretariat Jaipur and more.

### **Summary:**

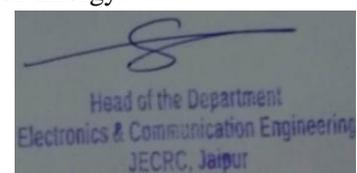
Workshop	: 1
Date	: 03/10/2021 to 07/10/2021
Topic	: <b>Design and Optimization of Solar PV System</b>
Invited Speaker	: Dr. Ranjan Bahera
Participants attended the event	: 55

### **Outcome of the Event:**

Nowadays many people are looking for different types of energy sources not only because nonrenewable fuels pose threat to the environment, but also everyone knows that the world will face one of the worst crisis, the energy shortage in the near future. However, for India to reach its potential and to boost the necessary Investment in renewable energy it will be essential to introduce comprehensive and long term support. The micro grids using hybrid renewable energy sources and solar energy are most prominent solutions for today's electricity demand in India. By this proposed technology individual can generate their own power and cut their energy bills while helping to protect the environment. Department of ECE had organized this workshop in order to create awareness and interest in area of solar photovoltaic and related technologies. This workshop was designed to project and explore research areas and scope of interdisciplinary research in solar photovoltaic and green energy.

### **The Objectives of this workshop are:**

- To showcase recent research area in renewable energy and solar photovoltaic and 100 kWp grid connected solar power plant at university.
- To develop innovative skills including professional ethics and social value.
- To provide knowledge of recent advancements in Solar PV and Green Energy.

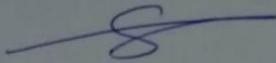




- To demonstrate design and simulation concepts of Solar PV and green energy systems.
- To provide hands on practice of Solar PV design and Simulation on MATLAB/PV Syst/ TCAD tools.
- To acquaint Participants with hands on approach to conduct research application.
- To promote and assist research works in field of Solar PV and green energy.
- To promote use of IT tools and software related to renewable energy.
- To exercise and develop project development platform for benefit of students and faculty.
- To ensure environment suitable for research, development and paper publication in institution related to department thrust area.

### **Approach**

- A focused faculty training/updating programmer for IT, Electronics and related sectors.
- Spreading up of quality faculty development and continuous updating of faculty.
- Finally, leading to an overall improved employability of the graduates/diploma holders.
- Ensuring quality publications and best utilization of available hardware and software resources by all stakeholders.

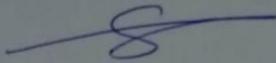


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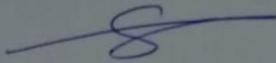
## Participants List

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54	Siddharth Sharma	20EJCEC152	siddharthsharma.ece24@jecrc.ac.in
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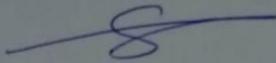


## Sample Certificate



## Photographs



  
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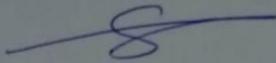
```
surprised 150
disgust 150
angry 150
happy 150
calm 150
sad 150
fearful 150
neutral 50
dtype: int64

[39]: y.shape
[39]: [1440,]

[40]: y.head()
[40]: 0 neutral
1 neutral
2 neutral
3 neutral
4 calm
dtype: object

1: x_train, y_train, x_test, y_test = train_test_split(x, y, test_size=0.2, random_state=0)
1: model = MLPClassifier()
1: model.fit(x_train, y_train)
1: y_pred = model.predict(x_test)
1: round(model.score(x_test, y_test), 2)
1: print(classification_report(y_test, y_pred))
```

**Fig: Programming on Scalp Software about solar cell**

  
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