

NSIC TRIP REPORT

SEPT 19, 22



PREPARED BY
TEAM A



CONTRAPTION MADE SIMPLE

On 19th September, a trip to NSIC Okhla, was organized by the Department of Electronics for the batch of 2021-24. NSIC is one of the technical service center of National Small Industries Corporation, an ISO certified government of India Enterprise. Trip was aiming to provide us a guide to future scope in this subject, a glimpse of problems of today and an approach to derive solutions using the subject we are currently into.



We begin with Sir Atul, who explained us with the basic understanding of Integrated Industrial Automation System which incorporates the total manufacturing system into a computer controlled, digitally processed and combined system.

Sir Atul was well versed with his explanation and provided us with the basics of PLC (Programmable Logic Controller) which is an industrial computer that has been adapted for the control of manufacturing process. It works with the help of field programming language which is called Ladder Logic. He further explained us about the software applications for controlling industrial process like SCADA(Supervisory control and data aquisition). Moreover, he gave us the full overview of the integrated automation process and how this field opens a number of opportunities for the young minds like us.



Some glimpses into the trip



Moving forward, we attended three highly informative workshops on Career building in electronics, Electric Vehicles and Solar Energy. We were introduced to the number of career opportunities in the field of electronics like Embedded systems, VLSI, Arduino and many more.

Further on, we were shown some of the Sensors projects like LDR sensor, Smoke Sensor, Magnetic Sensor, Ultrasonic sensor, IR sensor and many more which intrigued us and instilled an interest in us to work on those projects as well.

Solar Energy Workshop was taken by Sir Gaurav Mishra, who has his immaculate way of teaching and we all were spell bounded with his demonstrations. To say we had a great time learning from him would be a gross understatement.

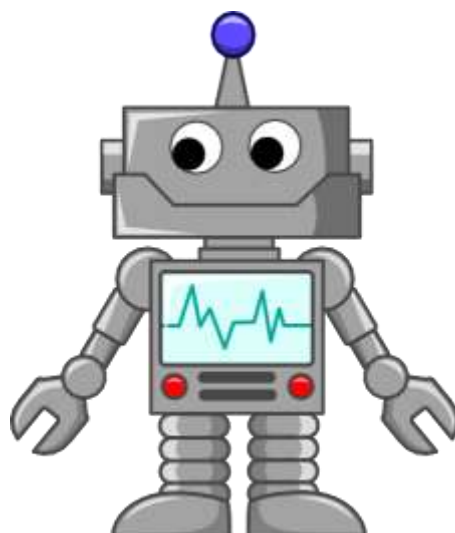


All the students were attentive & disciplined throughout the period of the trip. Several students also interacted with the members of the NSIC and forwarded their queries which were generously answered by the mentors present there. We ended with the hearty meal, which was provided by our college.

We appreciate the efforts of our teachers for providing us with the platform to discover such innovative ideas and experiments in the field of electronics.

Such trips should be held time to time.

- Ruba Bano
- Ayushi Dixit



Electronics(H) Batch 2021-24

Industrial Visit To NSIC Okhla

September 19, 2022

Fix now, enjoy your gadgets more..

An insight by TEAM B

We the students of B.Sc (H) Electronics, were given an opportunity to visit NSIC, Okhla on 19th September as an industrial visit planned by our institution Deen Dayal Upadhyaya College, University of Delhi and it was an immensely amazing experience for all the students as they got to learn about abundantly new skills, career opportunities, devices and mechanisms in the field of electronics.



Talking about the flow of the trip, every student reached the gate of NSIC at 10 am, which was the start of us entering into a whole new world of electronic gadgets and apparatus. The mentors took us to the lab of Integrated automation first where we acquired knowledge about programmable logic controllers(PLCs) which are often used in the process industry, automobile industry and FMCG industry and studied about the two most widely used PLCs i.e. Delta(based out of Taiwan) and Siemens(based out of Germany).

We also got to learn about different levels of hierarchy, which are field level, AS(Automation Station) level and the OS(Operation Station) level respectively and at the OS level, SCADA(Supervisory Control and Data Acquisition System) is the most widely used software which collects data in real time and controls the industrial level applications, programmed by ladder logic. Next, under this, we learnt about the working of induction motors and servo motors worked upon using VFDs(Variable frequency drives).

Second on the list, we got to see the apparatus of different PLCs such as DELTA, Siemens and Allen Bradley(RSlogix software) and the ABB robotic arm in the DCS and Robotics Lab, where we grasped about how the motion of the arm is controlled by STLprogramming language stored in a teach pendant, using servo motors.



Then we moved on to the EV charging/Mechatronics Lab where we had a look into the Delta Machine Vision(DMV) and different robotic devices used in the Beverage industry to manufacture bottled drinks. Here, all of us were pretty interested to know about the different type of robots i.e. Cartesian robot and Articulated robot, and when the cartesian robot works in all the axes of the coordinate plane, the process is called interpolation.

In the EV and charging workshop, we learnt about the different types such as BEV, HEV, MHEV, PHEV and FCEV and their pros and cons simultaneously. Three levels of EV chargers i.e. private charger, low voltage public charger and high voltage public charger models were also shown to us along with their important components, for example, how MOSFETs are embedded into them responsible for smoke sensing and heating effects. Next, we were also taught that the lithium-phosphate battery which has a high charging cycle is widely used in the EV industry.

Next, we moved on to the Solar Energy and Electrical AutoCAD where we got to know about the working of the solar PV system, fire and safety, solar tools and materials such as hammer machine, drill machine, mounting structures, charge control and load calculation devices.

Lastly, the mentors showed us the models of different types of sensors such as ultrasonic sensor, which is used in SONAR, IR sensor, gyroscopic sensor, humidity sensor etc. and using these type of sensors and Arduino, some working drones which were designed by their team were also demonstrated to us which fascinated every one of us of how Arduino, which were studying on theoretically till now, can do wonders if innovative ideas come up to every mind.



At the end, we were also served with adequate food by our college teachers which we all enjoyed to the fullest and clicked a lot of pictures throughout the visit and at the end. Pretty sure, after this visit, many students are going to try Arduino and other devices that were shown to us in practical life and are going to try new inventive ideas.

We would like to thank our principal Prof. Hem Chand Jain and our faculty advisors Prof. Anurag Mishra, Prof. Manoj Saxena, Dr. Poonam Kasturi, Mr. Naveen Kumar, Mr. Ajit Singh and Ms. Neha who gave us this opportunity for this visit and every student now has a different perspective towards the electronics field and are more enthusiastic towards working in the respective direction.

NSIC TRIP REPORT

19 Sep
2022



Presented to:

DR. POONAM KASTURI

DR. MANOJ SAXENA

ABOUT VISIT

Trip was conducted by our teachers to NSIC (National Small Industries Corporation Limited), which is a government of India control of Mini Ratna Enterprises of MSMEs, working for the promotion of Micro, Small, Medium Enterprises (MSMEs).

Our Teachers and our College, Deen Dayal Upadhyaya College gave this major opportunity to visit one of the government training Centre, NSIC Okhla, We the student of B.Sc.(Hons) Electronics department got amazing knowledge about the gadget and the carrier that we can and should pursue in near future after our graduation.

For this trip all the students reached NSIC gate at 10:00 am. When we entered for the workshop, we separated in groups and our group was assigned to our guide, Sir Gaurav Mishra, who gave us the knowledge about solar panels.



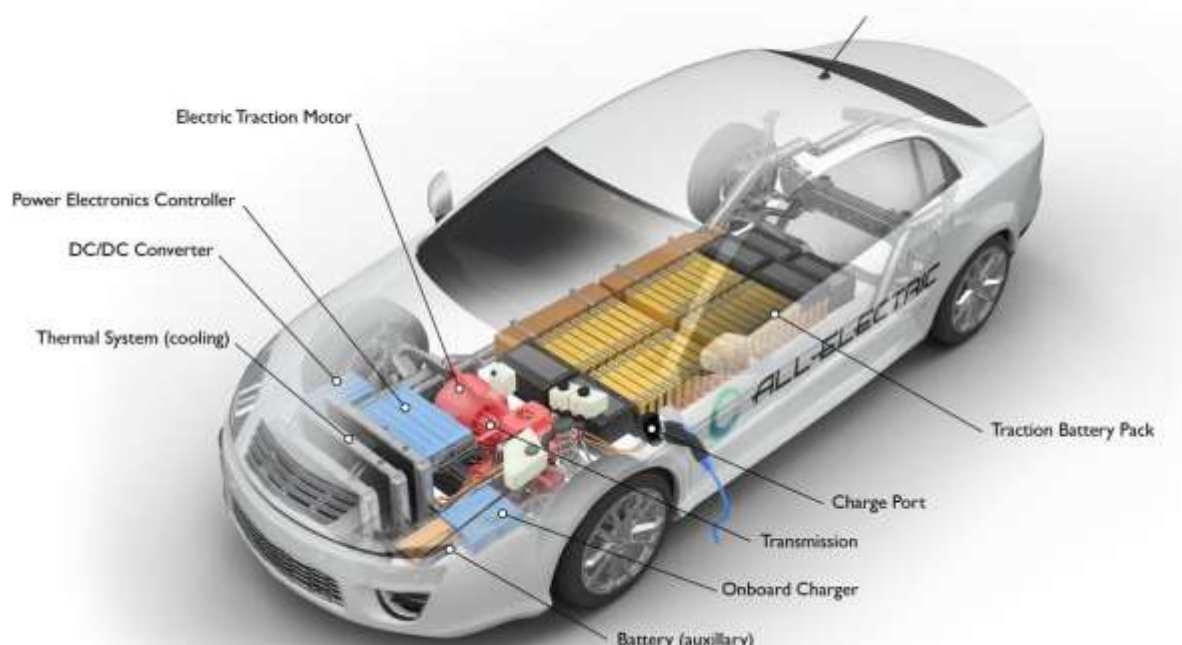
Then we moved to the Electric Power Charger. Here we came to know that the charger gives output of about 200 Amp and converts AC to DC current using 4 rectifiers.

There are 3 levels of charger. And the NSIC have the latest Level 3 charger inside it, it has one MCB when there is short circuit protection, on the outside panel of the charger it has the credit Card System and one large red Button for emergency to stop the supply of power in case of uncalled situation.

After this we were explained about the EV(Electric Vehicle). First we were explained about what type of battery is used inside an Electric Vehicles and that is Lithium Phosphate Battery which are the best for the DC current as compare to lead acid battery which are not efficient for the EV.

Further we were explained that EV uses PMDC motor (Permanent Magnetic DC motor) in their various types of EV: BEV, HEV, MHEV, PHEV, FCEV.

All-Electric Vehicle



He also gave example of metro which uses AC for the Metro movement and uses 3 phase Induction Motor and in near future the EV price will become very low as compared to the petrol car and become common on Indian Road.

After this we were assigned to a new guide, Sir Piyush who explained us about the Embedded Systems. There were so many projects based on Arduino Uno and we went through these all the projects.



He also discussed about the career opportunities in this field. All the guides and staff were so helpful and courteous

Glimpses



SERVING WITH PURE PASSION FOR THREE GENERATIONS.

Thank You !

Refreshment was delicious.

We are so thankful to our teachers. We also want this type of valuable trips in future.

REPORT BY TEAM C

- Milan Singh
- Anant



NSIC, OKHLA

REPORT BY GROUP D

NITISH KUMAR
ARIN SHARMA

On 19 September 2022, we went for a trip to NSIC, Okhla with an aim to visit the faculty of NSIC.

National Small Industries Corporation (NSIC), is an ISO 9001:2015 certified Government of India Enterprise under Ministry of Micro, Small and Medium Enterprises (MSME). NSIC has been working to promote and foster the growth of micro, small and medium enterprises in the country. NSIC operates through countrywide network of offices and Technical Centers in the Country. In addition, NSIC has set up Training cum Incubation Centre managed by professionals.

Schemes of NSIC

NSIC facilitates Micro, Small and Medium Enterprises with a set of specially tailored scheme to enhance their competitiveness. NSIC provides integrated support services under Marketing, Technology, Finance and other Support service.



THE ADVANCED TRAINING CENTRE

Objective-

The objectives of the trip was to learn something new in the fields of electronics and what is the scope of this subject.

Mission:

- ❖ **To impart quality engineering education as per the industry need.**
- ❖ **To motivate students to undertake research on next generation technologies**
- ❖ **To create an environment that shall foster growth of professionals capable of effectively using the scientific and technical knowledge for the betterment of mankind**



Field observation-

The first workshop was taken by Sir Gaurav Mishra on solar energy. He explained the benefit of solar energy and how it will be beneficial in future. The set-up of solar power panel and business module was also explained.



All the students were attentive and disciplined throughout the workshop. We learned about the upcoming technologies of solar energy. We also learned about green environment revolution.

Setup of solar power panel discussed in workshop included

- Knowledge of shadow area, solar panel angle and latitude angle.
- As the temperature of the solar panel increases, its output current increases exponentially, while the voltage output is reduced linearly. On increasing the temperature by 1°C then the efficiency of solar panel decreases by 1%
- At the time of installation of solar panel knowledge about the fire and safety of solar panel with the load capacity and charging control is essential and was discussed.
- On following all conditions the max. efficiency of solar panel is increased by up-to 30%.

Benefits of Using Solar Energy discussed in workshop.

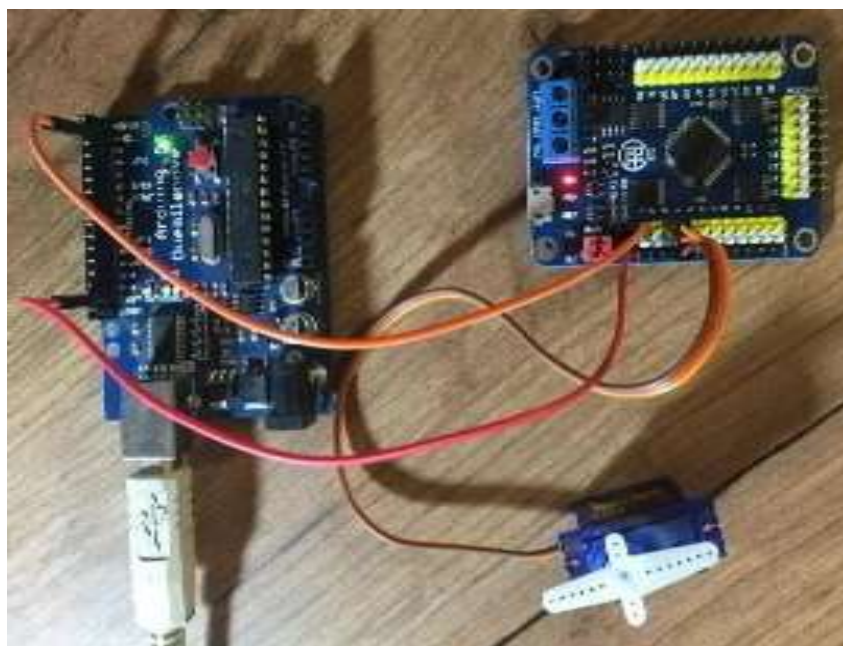
- : Impact on the Environment. .
- : Reduce Your Energy Bill.
- : Energy Production during Peak Hours. .
- : Solar Energy Is Applicable Everywhere. .
- : Less Electricity Lost During Long-Distance Transport.
- : Improves Grid Security.
- : Job Creation.

Second workshop was about electric vehicle technologies. We discussed about EV motor. EV motor uses PMDC in their various types of EV: BEH, HEV, MHEV, FCEV

We also learnt about tests that have been done on FCEV technology in Japan. We also discussed about the high tax on electric vehicles.

There are three levels of chargers. NSIC lab has level 3 charger. It gives output of 200 amp convert AC to DC current using rectifiers. It has credit card system on its front and red emergency button to stop the power supply if need be.

Lastly we discussed about the different types of sensors. Types of sensors discussed were ultrasonic sensor, gyroscopic sensor, humidity sensor and smoke sensor.



We discussed about the different types of sensors used with arduino. Sir helped us to get knowledge about drone technologies and its usage. We improved our ideas in our electronics field. We discussed about the technologies that control the market.

At the end we had delicious food provided by our beloved teachers. The food was healthy and fresh.



We would like to present our vote of thanks to our principal sir Prof. Hem chand Jain and our faculty advisors Prof. Anurag Mishra, Prof. Manoj Saxena, Dr. Poonam Kasturi, Ms. Neha, Mr. Naveen Kumar and Mr. Ajit Singh who gave us the opportunity for this beautiful visit. Now every student has different perspective toward electronics field. We will work with more enthusiasm toward our field and bring change in upcoming technologies.

NSIC ATC Visit September 19, 2022**B.Sc. (H) Electronics Semester III****LIST OF STUDENTS**

S.No.	Class Roll No.	NAME – TEAM A	
1.	21HEL2145	SHUBHAM DUBEY	shubham.21hel2145@ddu.du.ac.in
2.	21HEL2139	Sakshi	sakshi.21hel2139@ddu.du.ac.in
3.	21HEL2166	Harsh Vardhan	harsh.21hel2166@ddu.du.ac.in
4.	21HEL2153	VISHAL SINGH	singhvishal4790@gmail.com
5.	21HEL2114	Sunidhi Srivastava	sunidhi.21hel2148@ddu.du.ac.in
6.	21HEL2134	Priyanshi Yadav	priyanshi.21hel2134@ddu.du.ac.in
7.	21HEL2115	Ayushi dixit	ayushi.21hel2115@ddu.du.ac.in
8.	21HEL2102	Abhay kumar	abhaykumarm762@gmail.com
9.	21HEL2127	Nayan	nayan.21hel2127@ddu.du.ac.in
10.	21HEL2110	Arvind Kumar	arvind.21hel2110@ddu.du.ac.in
11.	21HEL2137	Ruba bano	rubabano98@gmail.com
12.	21HEL2160	Sachin	Kakathakur4330@gmail.com
	Class Roll No.	NAME – TEAM B	
13.	21HEL2157	Monika	monathakur7069@gmail.com
14.	21HEL2105	Akshit shukla	akshitshukla143@gmail.com
15.	21HEL2152	Yash Chauhan	yash.21hel2152@ddu.du.ac.in
16.	21HEL2159	Palak khanna	palakkhanna019@gmail.com
17.	21HEL2131	Prince khatti	princekhatti1501@gmail.com
18.	21HEL2111	Aryan Vashisth	ar.yanvashisth124@gmail.com
19.	21HEL2133	Priya	kanth.priya2122@gmail.com
20.	20HEL2125	Muskan Seth	muskan.20hel2125@ddu.du.ac.in
21.	21HEL2121	Krishan Kant	meenakk2320@gmail.com
22.	21HEL2122	Krishang Seth	krishangseth@gmail.com
23.	21HEL2150	Tanmay Arora	tanmay376264@gmail.com
24.	21HEL2119	Harshvardhan Khanka	khanka1211@gmail.com
25.	21HEL2126	Navdeep kumar	Navdeep.21hel2126@ddu.du.ac.in
	Class Roll No.	NAME – TEAM C	
26.	21HEL2158	Mouktik Yadav	mouktikyadav@gmail.com
27.	21HEL2164	Tinku dalal	tinkudalal48@gmail.com
28.	21HEL2107	Anant	anant.21hel2107@ddu.du.ac.in

29.	21HEL2167	Rohit Kumar	rohit.lohtiya0903@gmail.com
30.	21HEL2108	Anshul	Anshul.21hel2108@ddu.du.ac.in
31.	21HEL2163	Santosh kumar	santosh.21hel2163@ddu.du.ac.in
32.	21HEL2117	GUNTUKA SAI KRISHNA	saikrishnaguntuka2928@gmail.com
33.	21HEL2124	Malaika Kapoor	malaikakapoor.work@gmail.com
34.	21HEL2156	Mahesh	mahesh.21hel2156@ddu.du.ac.in
	Class Roll No.	NAME – TEAM D	
35.	21HEL2109	Arin Sharma	arin702official@gmail.com
36.	21HEL2132	Prince kumar	Prince.21hel2132@ddu.du.ac.in
37.	21HEL2113	Avlok rai	raiavlok113021@gmail.com
38.	21HEL2130	Prachi Joshi	prachi.21hel2130@ddu.du.ac.in
39.	21HEL2138	Ruchi pal	ruchipal16103@gmail.com
40.	21HEL2147	Sudarshan Bhardwaj	sudarshan.21hel2147@ddu.du.ac.in
41.	21HEL2146	Sourav patel	sourav.21hel2146@ddu.du.ac.in
42.	21HEL2125	Milan Singh	milan.21hel2125@ddu.du.ac.in
43.	21HEL2106	Alankrit vikram singh	Singhalankrit0037@gmail.com
44.	21HEL2104	Ajay Shekhawat	ajayshekhawat883@gmail.com
45.	21HEL2129	Nitish kumar	Nitish.21hel2129@ddu.du.ac.in
46.	21HEL2141	Sandeep puri	sandeepuri471@gmail.com
47.	20HEL2166	Sagar Mishra	sagarmishra1531@gmail.com