

**GIDC DEGREE ENGINEERING COLLEGE**

**ABRAMA, NAVSARI**



A REPORT ON

SHORT TERM TRAINING PROGRAMME

ON

**“APPLICATIONS OF PLC AND SCADA IN INDUSTRIAL  
AUTOMATION”**

15<sup>TH</sup> -19<sup>TH</sup> JULY, 2019

SPONSORED BY:

**GUJARAT COUNCIL ON SCIENCE AND TECHNOLOGY**

**DEPARTMENT OF SCIENCE AND TECHNOLOGY,**

**GOVT.OF GUJARAT**

ORGANIZED BY:

**ELECTRICAL ENGINEERING DEPARTMENT**

**GIDC DEGREE ENGINEERING COLLEGE**

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## About the programme:

Automation in the industrial workplace provides the advantages of improving productivity and quality, reducing errors and waste, increasing safety, and adding flexibility to the manufacturing and process. Also, Industrial Automation yields increased reliability and profitability. Industrial automation systems are functioned by Programmable Logic Control (PLC) and supervised by Supervisory Control And Data Acquisition (SCADA).

One Week STTP gave exposure of PLC Architecture, Introduction of ladder diagram, structure of PLC program, elements of ladder diagram, execution of PLC programs using Siemens SIMATIC S7-200 PLC hardware.

Interfacing of PLC with different type of sensors, automatic car washing, automated parking and specific industrial automation applications like stamping process, shear press, conveyor based inspection & sorting and bottle filling were discussed during the STTP.

## Objective of the programme:

Earlier industrial automation systems were mechanical in design. Since few decades, to improve productivity and safety & to reduce errors and wastes all manufacturing/process industries are continuously switching their automation systems from mechanical to electrical operated by Programmable Logic Control (PLC) and supervised by Supervisory Control And Data Acquisition (SCADA).

The objective of this One Week STTP was to upgrade the technical skills of students & to nurture fundamental & advanced concepts in the era of PLC and SCADA. This training programme prepared students capable of developing solutions for the engineering problems in the society.

## Event committee:

|                     |                      |
|---------------------|----------------------|
| <b>Patron</b>       | Dr. N. D. Sharma     |
| <b>Convenor</b>     | Dr. R. J. Motiyani   |
| <b>Coordinators</b> | Prof. Ankur Desai    |
|                     | Prof. Rohit Damor    |
|                     | Prof. Bhavin Trivedi |
|                     | Kamlesh Sonwane      |

## Day:1 Inaugural Function:

### Day-1 (15.07.2019)

Inaugural program was started as per schedule time on 15.07.2019. Mr.Vinay Chavda (Ex. Maintenance Head, Tata Steel, Navsari), Dr. A. K. Dave (Trustee Member of GIDC Degree Engineering College and Ex. Director SVNIT, Surat), Prof. (Dr.) N. D. Sharma (Principal), Prof. (Dr.) R. J. Motiyani (Head of Electrical Engineering Department, GDEC), all department heads, faculties of college and participants from various Degree and Diploma Colleges were remain present during the inaugural session.

All the guests and dignitaries were welcomed by Prof. the Convener and coordinators. Prof. (Dr.) N. D. Sharma has delivered welcome speech to the participants and guests. Dr. A. K. Dave sir has encouraged to participants for updating their knowledge of PLC & SCADA from this STTP. He also motivated and congratulated event co-ordinators for organized such wonderful technical event. Prof. (Dr.) R. J. Motiyani has briefed about the STTP day wise. He also thanked GUJCOST (Gujarat Council on Science and Technology) and DST (Department of Science and Technology) for providing financial support.



## Day:1 Expert Lecture

Prof. Ankur P Desai (Assistant Professor, Electrical Engineering Department of GIDC Degree Engineering College) has conducted a lecture on PLC and its Programming with Ladder Logic. He explained basic of PLC, type of PLC, various programming instructions like Timer, Counter, Bit instructions, Memory etc. During lab session, participants have solved some problems like Traffic Light Problem, Car Parking Problem, Motor Start-Stop Operations, and Motor Reverse Forward Operations using Siemens S7 200 CN PLC Kit. At the end of first day, Prof. (Dr.) R. J. Motiyani has felicitated Prof. Ankur P Desai with a memento.



## Day-2 (16.07.2019)

Mr.Vinay Chavda (Ex. maintenance Head, Tata Steel, Navsari) has delivered a lecture on Industrial Applications of PLC and SCADA. He explained about the role of PLC and SCADA in various industrial automations of inventory management, maintenance management and plant automation. During practical session, participants have solved industrial problems using Siemens S7 200 CN and Siemens S7 300 CN PLCs.

Prof. Harshal Vashi (Assistant Professor, ASH Department of GIDC Degree Engineering College) has conducted a lecture on start-ups and tested the entrepreneurship potential of participants.

Prof. (Dr.) S.S.Patel has felicitated Mr.Vinay Chavda and Prof.Harshal Vashi with memento.



### Day-3 (17.07.2019)

Prof. Mohan Patel (Assistant Professor, Sarvajanik College of Engineering & Technology, Surat) has delivered a lecture of how to develop SCADA with **CODESYS** (leading manufacturer-independent IEC 61131-3 automation software for engineering control systems). During practical session, participants have developed SCADA of elevator system, motor start stop and also various industrial problems using SCADA Software. .





At the end of third day, Prof. (Dr.) R.J.Motiyani and Prof.Ankur P. Desai presented memento to Prof. Mohan Patel.

#### **Day-4 (18.07.2019)**

Mr. Hitesh Patel (In charge head of Siemens Centre of Excellences) has discussed various industrial automation based applications. He explained SCADA using Siemens and also gave information about latest trends of IOT (Internet of Things) in automation. During Lab sessions, participants have performed various SCADA based problems using simulators of Siemens soft awes. At the end of forth day, Prof. (Dr.) R.J.Motiyani and Prof.Ankur P.Desai have felicitated Mr. Hitesh Patel with memento.



Prof (Dr.) Shailesh Patel (Professor, ASH Department, and GIDC Degree Engineering college) has delivered a expert lecture on Mathematical Modelling and it's important in industry level automation

### Day-5 (19.07.2019)

Prof. (Dr.) Bhavin Patel has delivered expert lecture on Application of PLC in Disaster management. Prof. (Dr.) Shailesh Patel has felicitated Mr.Bhavin Patel with memento.

All the participants have visited fully automated PLC and SCADA based Sewage Treatment Plant of 40 MLD and Tertiary Treatment Plant (TTP) of 100 MLD capacities situated at Bamroli, near Surat.

At end of the day, valedictory ceremony was organized. Prof. (Dr.) N. D. Sharma (Principal), heads of all department, faculties and participants were remain present during valedictory present during valedictory session. Prof. (Dr.) N. D. Sharma has discussed about how the knowledge of PLC and SCADA can provide a bridge between academics and industry. He also congratulated and gave mementoes to co-ordinators for successfully organizing five days STTP.



Prof. (Dr.) R. J. Motiyani has concluded the five days training programme with Vote of Thank. Certificates were distributed to all the participants through principal sir and all head of departments. At end of the function, participants have shared their experiences of five day journey and gave their valuable feedbacks about the STTP.