



**SANKAR POLYTECHNIC COLLEGE
(AUTONOMOUS)**



SANKAR NAGAR, TIRUNELVELI- 627 357



**AICTE ATAL SPONSORED
FACULTY DEVELOPMENT PROGRAM**



REPORT

on

RECENT DEVELOPMENTS IN IoT

9.12.2024 to 14.12.2024

Organized by

**DEPARTMENT OF EEE,
SANKAR POLYTECHNIC COLLEGE,
SANKAR NAGAR,
TIRUNELVELI -627 357**

ABOUT SPC

Sankar Polytechnic College was established in July 1958. The polytechnic is managed by the India Cements Educational Trust, Chennai. It is a State-Government-Aided institution since inception. It is a co-educational institution. The medium of instruction is English. It offers three-year full-time Diploma courses in Civil, Mechanical, EEE, ECE and Computer Engineering. The Mechanical and EEE courses are offered in Self-supporting Stream also. The polytechnic also offers one-year Post-Diploma Course in Computer Application. All the courses are approved by the AICTE and the Directorate of Technical Education, Government of Tamil Nadu. Presently, the annual intake sanctioned by AICTE is 420 in 1 year.

ABOUT THE DEPARTMENT

Established in 1958, the Department of Electrical and Electronics Engineering. The self-supporting course was established in the year 2006. Drawing upon SPC's tradition of teaching excellence, the Department of EEE with 14 faculties along with 5 technical assistants and 288 students works closely together in an open, collegial atmosphere. With Autonomous curriculum, the Department places equal emphasis on theoretical and experimental electrical and electronics engineering.

Our Mission is to educate students from all over Tamil Nadu, including those from the local and rural areas, so that they become enlightened individuals, improving the living standards of their families, industry and society. We provide individual attention and world class quality of education. The EEE Department has been organizing many symposium, guest lectures and electrical safety awareness programmes. The Department has well equipped facilities like Standard labs and a Seminar hall.

VISION

"To Render Services to Meet the Growing Global Challenges of Engineering Industries by Educating Students to become Exemplary Electrical and Electronics Engineers of High Ethics"

MISSION

"To Provide the Students a Rigorous Learning Experience in Understanding Basics of Electrical & Electronics Engineering Built on the Foundation of Science, Mathematics, Computing and Technology by Emphasizing active Learning with Strongly Supported Laboratory Component and Prepare them for Careers"

ABOUT ATAL

All India Council for Technical Education(AICTE) through its newly established AICTE Training and Learning(ATAL) Academy have started unique faculty development programs in various thrust areas of modern technology. AICTE ATAL Academies conducted a series of training programs in various emerging areas like Engineering, Management, Arts & Craft and Design & Media across country.

ABOUT THE FDP

The Internet of Things (IoT) plays a significant role in real world applications, Automation, Environmental management systems, Agriculture, industrial automation, E-Vehicle and electrical engineering by enabling the connection and communication of devices and systems. In Electrical Engineering, IoT is used for smart grid management, monitoring and controlling power distribution, predictive maintenance of electrical equipment, energy efficiency optimization, and real-time data analytics for better decision-making. It enhances automation, improves reliability, and facilitates remote monitoring and control of electrical systems.

WHO CAN ATTEND

The faculty members of AICTE approved institutions, Research Scholars, PG Scholars, Participants from Government, MoE/AICTE/UGC, Bureaucrats/Technicians/Participants from Industry etc.,

REGISTRATION FEE: NIL

TA/DA will be provided as per the AICTE Norms

Last date for Registration: 04.12.2024
Intimation of Confirmation: 06.12.2024
Registration Link:
<https://atalacademy.aicte-india.org/>

Register as a participant fill your detail.

Select: FDP → Month → December
→ Thrust Area: Engineering

For More Information, Kindly visit
<https://atalacademy.aicte-india.org/FAQs>

Number of Participants Limited to 50.

Selection of participants based on First come First Serve Basis.

CERTIFICATE

Assessment test will be conducted at the end of the program. The certificates shall be issued to those participants who have attended the program with minimum 80% attendance and scored minimum 60% marks in the assessment test.



AICTE ATAL
Sponsored



Faculty Development Program

On
Recent Developments in IoT
09.12.2024
to
14.12.2024

Organized by

DEPARTMENT OF ELECTRICAL
AND ELECTRONICS ENGINEERING

SANKAR POLYTECHNIC COLLEGE
(AUTONOMOUS)
SANKAR NAGAR 627 357
Government Aided Institution
(The India Cements Educational Trust)
Approved by AICTE
Affiliated by DoTE, Chennai.



COORDINATOR

Dr. SANKARA SUBRAMANIAN A
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CO-COORDINATOR

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**AICTE Training & Learning (ATAL) Academy Sponsored
Faculty Development Program (FDP) On**

“Recent Developments in IoT”



**Date: 9th to 14th December 2024,
Time: 9.30 AM to 5.30 PM**

Organized By

**Department of Electrical and Electronics Engineering,
Sankar Polytechnic College (Autonomous),
Sankar Nagar, Tirunelveli - 627357.**

**(AICTE Approved Govt. Aided Institution, Affiliated to DoTE)
(Managed by The India Cements Educational Trust, est. in 1958)**



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Sankar Nagar, Tirunelveli – 627357.**

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Cordially invite you for the

Inaugural function of



**AICTE Training & Learning (ATAL) Academy Sponsored
Faculty Development Program (FDP) On**



“Recent Developments in IoT”

9th December 2024, 9.00 AM

**Venue: EEE Computer Laboratory
Sankar Polytechnic College, Sankar Nagar.**

Chief Guest

**Dr. P. Latha, Principal i/c
Government College of Engineering,
Tirunelveli.**



**has graciously consented to be the Chief Guest & deliver the Inaugural
address**

******* All are invited*******

AICTE ATAL SPONSORED REPORT ON FACULTY DEVELOPMENT PROGRAM
ON
RECENT DEVELOPMENTS IN IoT

Program Overview

The Faculty Development Program (FDP) on *Recent Developments in IoT* was organized to enhance the knowledge and skills of faculty members in the rapidly growing field of the Internet of Things (IoT). As IoT is reshaping industries and daily life with interconnected devices, the FDP aimed to provide a deeper understanding of various aspects of IoT and how they are applied in real-world scenarios. The program also focused on providing insights into the integration of IoT into various sectors, such as Home Automation, Industrial Automation, Waste Management system, Healthcare, Agriculture, Smart Cities, Environmental Monitoring, E-Vehicle, Smart Energy etc. The FDP was held over a period of 6 days from 9th December to 14th December 2024, with daily sessions running from 09:30 AM to 5:30 PM in EEE Computer Lab, Sankar Polytechnic College, Sankar Nagar organized by Department of EEE, Sankar Polytechnic College, Sankar Nagar. Each day featured a mix of theoretical sessions and practical demonstrations. Totally 39 participants actively participated in this FDP. This FDP was successfully inaugurated by Dr. P. Latha, Principal In charge, Government College of Engineering, Tirunelveli.

Objectives of the Program

1. To familiarize faculty members with IoT platforms and their components.
2. To explore the practical applications of IoT in various industries.
3. To provide hands-on experience in working with IoT devices and platforms.
4. To enhance faculty members' ability to integrate IoT technologies into their research and teaching.

Program Structure & Schedule

The program consisted of multiple sessions, including lectures, hands-on workshops, case studies, and discussions with industry experts. The schedule was designed to cover both theoretical and practical aspects of IoT platforms and applications. The FDP consist of 10 Lecture session, 1 Industrial visit and Article Discussion session.

|  Sankar Polytechnic College (Autonomous), Sankar Nagar – 627 357 Government Aided Institution (THE INDIA CEMENTS EDUCATIONAL TRUST) APPROVED BY AICTE Affiliated by DoTE, Chennai. | | | | | |
|---|--|--|--|--|---|
|  AICTE ATAL Sponsored Faculty Development Program On Recent Developments in IoT  | | | | | |
| FDP Start Date : 09.12.2024 | | | FDP End Date: 14.12.2024 | | |
| Day 1 09.12.2024 | Day 2 10.12.2024 | Day 3 11.12.2024 | Day 4 12.12.2024 | Day 5 13.12.2024 | Day 6 14.12.2024 |
| 9:00 am – 9:30 am Inaugural Session | | | | | |
| 9:30am – 12:00pm Session 1 | 9:30am – 12:00pm Session 3 | 9:30am – 12:00pm Session 5 | 9:30am – 12:00pm Session 7 | 9:00am – 1:00pm Industrial visit | 9:30am – 12:00pm Session 10 |
| Name of the Expert : Dr. G. Saravai Mahalingam Designation : Lecturer, Organization : Bharathiar, Centenary Memorial Government Women's Polytechnic College, Ettimadai. Experience in Years : 20 years. Topic to be taught : IoT Platforms and Its Real World Applications | Name of the Expert : Dr. C.Poornima Designation : Professor, Organization : Government College of Engineering, Ramanagalam, Experience in Years : 23 years. Topic to be taught : IoT based Industrial Automation. | Name of the Expert : Dr. A. Sankar Subramanian, Designation : Principal, Organization : Sankar Polytechnic College (Autonomous), Sankar Nagar, Experience in Years : 31. Topic to be taught : National Educational Policy 2020 Implementation | Name of the Expert : Mr. N. Venkateshram, Designation : Executive Engineer, Organization : IANTRANSCO, Tirunelveli, Experience in Years : 30 years. Topic to be taught : IoT based smart Energy and its Utilities | Name of the Organization : The India Cement 22 Complete address with pincode : The India Cement Ltd, Sankar Nagar-627 357 Industry Type : Cement Manufacturing Industry Area of specification : Overall Process Monitoring and Control | Name of the Expert : Dr. Indira Devi, Designation : BOD/ICE Organization : Sri Krishna Polytechnic College, Coimbatore. Experience in Years : 24 years. Topic to be taught : IoT in Health Care. |
| 12:00pm – 1:00pm Article Discussion | | | | 12:00pm – 1:00pm Article Summary | |
| 1:00pm – 2:00pm Lunch | | | | | |
| 2:00pm – 4:30pm Session 2 | 2:00pm – 4:30pm Session 4 | 2:00pm – 4:30pm Session 6 | 2:00pm – 4:30pm Session 8 | 2:00pm – 4:30pm Session 9 | 2:00pm – 4:00pm MCQ & Reflection Journal |
| Name of the Expert : Dr. G. Saravai Mahalingam Designation : Lecturer, Organization : Bharathiar, Centenary Memorial Government Women's Polytechnic College, Ettimadai. Experience in Years : 20 years. Topic to be taught : Home Automation Based IoT | Name of the Expert : Dr. C.Poornima, Designation : Professor, Organization : Government College of Engineering, Ramanagalam, Experience in Years : 23 years. Topic to be taught : IoT based Waste Management System | Name of the Expert : Mr. S. Balu Sankar Ganesh, Designation : Managing Director, Organization : E-dot Technology, Tirunelveli, Experience in Years : 20 years. Topic to be taught : IoT based Smart Agriculture | Name of the Expert : Mr. S. Balu Sankar Ganesh, Designation : Managing Director, Organization : E-dot Technology, Tirunelveli, Experience in Years : 20 years. Topic to be taught : IoT based E- Vehicle | Name of the Expert : Dr. Komara Designation : Professor & Head/EEE, Organization : Ramoos Institute of Technology, Rajapalayam, Experience in Years : 26 Years. Topic to be taught : Environmental Monitoring System using IoT. | |
| 4:30pm – 5:30pm Hands on training /Labs | | | | | 4:00pm – 5:00pm Valedictory Session |

Inauguration on 9.12.2024 at 9.00 AM

Lighting of lamp by Dr. P. Latha, Principal In charge, Government College of Engineering, Tirunelveli and officials of Sankar polytechnic college, Sankar Nagar Tirunelveli.



Chief Guest inaugural speech:



Session Highlights

Session 1: IoT Platforms and its Real-World Applications

Speaker:Dr. G. Samuel Muthuraj, Lecturer, Bharathiyar Centenary Memorial

Government Women's Polytechnic college, Ettayapuram.

Content: In this session Understand the fundamental concepts and components of IoT platforms is discussed. Different IoT communication protocols and standards are explored. Developing basic IoT applications using popular IoT platforms were

discussed. Real-world IoT use cases and applications in various sectors like healthcare, agriculture, smart cities, and industrial automation were discussed.

Session Clips



Session 2: Home Automation based IoT

Speaker:Dr. G. Samuel Muthuraj, Lecturer, Bharathiyar Centenary Memorial

Government Women's Polytechnic college, Ettayapuram.

Content: In this session faculty members gained a deeper understanding of the technologies behind home automation, including the role of sensors, cloud computing, and wireless communication protocols in creating intelligent systems. They gained insights into how to incorporate IoT applications into classrooms, labs, and projects to improve student engagement and learning outcomes.

Session Clips



Session 3: IoT based Industrial Automation

Speaker:Dr. C. Ponmani, Professor, Government College of Engineering,
Bodinayakkanur.

Content: In this session Faculty members gained a comprehensive understanding of IoT technologies and their application in industrial automation. This session stimulated faculty members to update their curriculum to include IoT-based industrial automation, promoting innovation and research in this field.

Session Clips



Session 4: IoT based Waste Management System

Speaker:Dr. C. Ponmani, Professor, Government College of Engineering,
Bodinayakkanur.

Content: The faculty development program on IoT-based waste management systems provided valuable insights into the potential of IoT in enhancing waste management processes. By leveraging sensors, data analytics, and cloud computing, cities can reduce waste management costs, improve environmental sustainability, and streamline operations.

Session Clips



Session 5: National Education Policy 2020

Speaker:Dr. A. Sankara Subramanian, Principal, Sankar Polytechnic College, Tirunelveli.

Content: In this session various features of NEP 2020 were discussed. The features like flexible entry exit, choice-based credit system and Industry Institute interaction were discussed among the faculty members. All the faculty members actively participated in the discussion and shared their views on NEP 2020. Many faculty members got their doubts clarified.

Session Clips



Session 6: IoT based Smart Agriculture

Speaker:Mr. S. Babu Sankar Ganesh, Managing Director, E-dot Technology, Tirunelveli.

Content: In this session IoT-based solutions for improving agricultural practices such as irrigation, crop monitoring, and soil health were discussed. Various IoT platforms for building and testing smart agriculture systems were discussed.

Session Clips



Session 7: IoT based Smart Energy and utilities

Speaker:Mr. N. Venkateshmani, Executive Engineer, TANTRANSOCO, Tirunelveli.

Content: This session commenced with a detailed overview of IoT and its pivotal role in the modern energy sector. Participants were introduced to key concepts such as smart grids, energy harvesting, and wireless sensor networks.

Session Clips



Session 8: IoT based E-Vehicle

Speaker:Mr. S. Babu Sankar Ganesh, Managing Director, E-dot Technology,
Tirunelveli.

Content: Real-time monitoring and predictive analysis were discussed which ensure optimal performance of EV batteries, extending their life and improving vehicle efficiency. The importance of IoT in ensuring that vehicles communicate with each other and infrastructure, leading to safer and more efficient transportation systems were discussed.

Session Clips



Session 9: Environmental Monitoring Using IoT

Speaker:Dr. S. Kannan, Professor & Head, Ramco Institute of Technology,
Rajapalayam.

Content: Participants gained a clear understanding of how IoT can be integrated into environmental monitoring systems. Faculty members were able to understand the implementing the IoT-based environmental monitoring system and collection of real-time environmental data.

Session Clips



Session 10: IoT in Health Care

Speaker:Dr. Indira Devi, HoD/ICE, Sri Krishna Polytechnic College,
Coimbatore.

Content: Faculty members gained insights into the cutting-edge IoT technologies being applied in healthcare, and how these innovations are improving patient outcomes and system efficiencies.

Session Clips

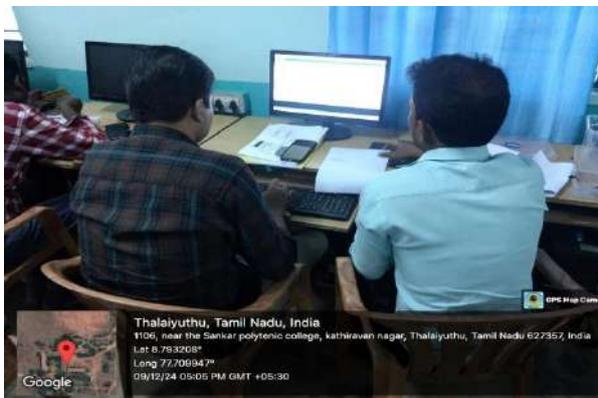


Hands on Training Session

Speaker:Mr. S. Babu Sankar Ganesh, Managing Director, E-dot Technology,
Tirunelveli.

Content: Hands-on experience allowed the participants to implement IoT systems and explore various tools and platforms used in the industry. Participants found the hands-on exercises useful and engaging. Some participants suggested extending the session duration or adding more advanced modules for further exploration of the topic.

Hands on Training Session clips







Article Discussion Session: The Article Discussion Session was an insightful and engaging part of the Faculty Development Program. It successfully met its objectives of familiarizing participants with the latest advancements in IoT, addressing the challenges, and fostering an environment for academic collaboration and research.

Article Discussion Clips



Industrial Visit

Place of Visit: The India Cements, Cement Manufacturing Industry, Tirunelveli

Content: Participants were taken to thermal power plant section in cement manufacturing industry. Participants understood whole process of power generation. They have installed 48 MW capacity thermal power plant which consist of two water feed boilers provide 24 MW each then the generated steam is rotated with the help of steam turbine which is operate at 5000 RPM just coupled with 3000 RPM generator to provide 48 MW electricity to cement power plant.

Industrial Visit Clips



Key Takeaways

- **Understanding of IoT platforms:** Participants gained a comprehensive understanding of various IoT platforms, including their architecture, components, and how to deploy them for real-world applications.
- **Hands-on experience:** Faculty members learned how to set up and program IoT devices, contributing to their ability to teach and guide students in similar projects.
- **Industry insights:** Exposure to real-world IoT applications helped faculty members grasp the potential of IoT in transforming industries and daily life.
- **Collaboration:** The program encouraged networking and collaboration among academic professionals, which could lead to joint research projects and initiatives in IoT-related fields.
- **Future prospects:** Attendees gained an awareness of the future directions of IoT, including the role of AI, machine learning, and 5G technologies in enhancing IoT systems.

Feedback from Participants

Participants expressed high satisfaction with the program, particularly with the balance of theory and practical applications. The hands-on sessions were appreciated, as they provided valuable insights into the setup and management of IoT systems. Several suggested the inclusion of more in-depth sessions on advanced topics such as IoT security and data analytics in future programs.





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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Cordially invites you for the

VALEDICTORY FUNCTION OF

AICTE TRAINING & LEARNING (ATAL) ACADEMY SPONSORED

Faculty Development Program (FDP) On

“RECENT DEVELOPMENTS IN IOT”

DATE: DECEMBER 14, 2024

TIME: 3:00 PM

Venue: EEE Computer Laboratory

CHIEF GUEST



Dr. Rajkumar M, Principal
JP College of Engineering,
Tenkasi
Alumni of SPC EEE

**We look forward to welcoming you and celebrating the successful conclusion of this
enriching journey**

*******ALL ARE INVITED*******

Acknowledgments

The program was made possible by the continuous support of Sankar Polytechnic college management. The constant efforts of EEE department Faculty members and experts in the field of IoT made this FDP a successful Event. Special thanks to the guest speakers and industry professionals who shared their knowledge and experiences with the participants.

Newspaper Clips

The information about the Faculty development program is published on the Tamil Newspapers on 10th December and 16th December 2024.



Conclusion

The Faculty Development Program on IoT Platforms and Its Real-World Applications was a resounding success. It provided faculty members with a solid foundation in IoT technologies, their practical applications, and current trends. The program achieved its goal of enhancing the knowledge and skills of educators, helping them integrate IoT concepts into their research and teaching. It also fostered valuable industry-academia interactions, paving the way for future collaboration and advancements in the field of IoT. The FDP was successfully completed with Dr. M. Rajkumar, Principal JP College of Engineering as Chief Guest in the valedictory function