IEEE STUDENT BRANCH ACTIVITIES - 2020
Inauguration of THE IEEE STUDENT BRANCH activities for the year 2020

- IEEE activities for the year 2020 was inaugurated on January 29, 2020.
- Dr. Arumugam Nallanathan, IEEE Fellow, Professor, Queen Mary University of London, UK was the chief guest and Dr. V. Sankaranarayan, HoD, EEE Department, NIT Tiruchirappalli presided over the function.
- Dr. Nallanathan, briefly spoke on the importance and value of IEEE membership and other responsibilities of being an IEEE member.
- Dr. M.P. Selvan, Counselor, IEEE SB NIT-T introduced the Student Branch office bearers to the gathering.
- Mr. M. Ananada Reddy, Chairperson, IEEE SB NIT-T, presented the plan for the year 2020.
Awareness Program on “Power and Energy” for School Students

- An awareness program on power & energy was conducted for students of REC Middle School, Thuvakudi on 04.02.2020 as a part of technical symposium “CURRENTS 20”.
- Dr. P. Raja, Associate Professor/EEE, NITT addressed the students at the EEE Auditorium, NIT Trichy.
- Topics such as the house wiring from service mains to the load, working principle of transformer and principle and technology of e-bike were explained to the students with the help of demonstrations.
- The importance of wind and solar energy was also described to the participants.
A training programme was conducted for NLC executives on “Role of IoT in Smart Grid”.

Dr. M.P. Selvan, Counselor, IEEE SB NIT Trichy handled a session on “Applications of IoT in Smart Grid”.

Dr. S. Moorthi, Assoc. Prof., EEE Dept., NIT Trichy gave a talk on “Embedded Controllers for Power Applications”.

Demonstrations of real-time applications such as ‘Environmental Quality Monitoring using IoT’, ‘Home Energy Management System’, ‘Smart Metering’, ‘Smart Street Lighting’, ‘Fault detection in transmission lines’ were also given by the research scholars of Hybrid Electrical Systems Lab to the participants.
Invited talk on “Signal Processing Techniques for IoT Enabled Wide-Area Smart Grid Monitoring System”

- Dr. M.P. Selvan, Counselor, IEEE SB NIT Trichy introduced the speaker.
- Dr. Sabarimalai Manikandan, Assistant Professor, School of Electrical Sciences, IIT Bhubaneswar briefly spoke about the different signal processing techniques that can be used to assess the power quality (PQ) of Smart Grids. He then talked about the sparse signal decomposition technique that he had proposed to detect & classify PQ disturbances. He also touched upon the role IoT could play in Smart Grids.
- Dr. P. Raja, Assoc. Prof., EEE Dept., NIT Trichy felicitated the speaker with a memento.
Invited talk on “Research Article Writing : Scientific Artist!”

- Dr. M.P. Selvan, Counselor, IEEE SB NIT Trichy introduced the speaker.
- Dr. Dushantha Nalin K. Jayakody, Associate Professor, IEEE Senior Member, School of Computer Science and Robotics, National Research Tomsk Polytechnic University, Russia, briefly spoke about the Research Article Writing which will help as guideline in Academic Research Journal writing. He also gave some tips that utmost care to be taken in writing the research journals.
- Dr. P. Muthuchidambaranathan, Professor, ECE Dept., NIT Trichy felicitated the speaker with a memento.

Invited talk on “Research Article Writing : Scientific Artist!”

on 27.02.2020
IEEE-WIE (Women in Engineering) Membership Drive

- Dr. M. Venkata Kirthiga, Senior Member, IEEE and Associate Professor, Dept. of EEE, NIT Trichy conducted a membership drive for IEEE-WIE at NIT Tiruchirappalli.
- Dr. Kirthiga encouraged the women in the audience to become IEEE-WIE members by highlighting various benefits like discounted registration to events, networking opportunities, awards, scholarships and travel grants. She also spoke about the opportunities to connect and collaborate with peers across the world by attending IEEE WIE global events like International Leadership Summits and the International Leadership Conference (IEEE-WIE ILC).
Industrial Visit to 100kWp Rooftop Solar Power Plant

- Dr. M.P. Selvan, Counselor, IEEE SB, NIT Trichy organised an Industrial visit for the M.Tech. students of EEE Department.
- The students visited the 100kWp solar rooftop power plant installed at the Lecture Hall Complex building in the college campus.
- Dr. Selvan explained the working of the plant and elaborated on the role played by the grid-tied inverter. He also demonstrated the functionality of the data logging system which collects and stores information such as solar irradiance, power produced by the panels, units delivered and so on. With the help of these data, the students were able to observe the variation of electric power produced by the plant with changes in solar irradiance.
- Mr. Karthick, operation of the Solar PV plant helped the students to understand electrical wiring of the panels and grid connection of the plant at the LT distribution box.
Invited talk on “Smart Metering - Technology & Benefits”

- The IEEE SB of NIT-Tiruchirappalli in association with Institute of Engineers (IEI India)- Tiruchirappalli Local Centre (TLC) & Tamil Nadu State Centre (TNSC) organized a technical webinar using Zoom software.
- The webinar was handled by Dr. M.P. Selvan, Associate Professor, Department of EEE, NIT Tiruchirappalli. The participants comprised UG students, PG students and Ph.D. research scholars from CSE, EEE and ECE departments. Engineers affiliated with IEI association were also in attendance.
- Dr. Selvan compared different conventional metering systems and explained the need, architecture and benefits of smart metering systems. The talk was followed by a brainstorming session.
An online technical talk was given by Dr. Damodar Reddy Edla, Senior member, IEEE, Assistant professor, Department of Computer Science and Engineering, NIT Goa through Cisco Webex Meetings.

Dr. Reddy gave a brief introduction to the domain of Brain Computer Interface (BCI) along with several real time applications. He gave an overview of research works going on in the field of BCI and the role they could play in modern society.

The participants from CSE, EEE and ECE departments were encouraged by Dr. Reddy to perform research in the emerging field of BCI.
Invited talk on “Smart Grid- The Future Electric Grid- An Overview”

- An online technical talk was given by Dr. Chandrasekhar Perumala, Assistant Professor, School of Electrical Sciences, IIT Bhubaneswar via Cisco Webex Meetings.
- Dr. Perumala started with the conventional grid, its shortcomings and the motivation behind development of smart grids. He compared different definitions given to smart grids by different countries.
- Dr. Perumala focused on the architecture of the smart grid and its many advantages. He concluded the talk by reminding the participants from CSE, EEE & ECE departments that the smart grid is not exclusive to EEE department, but needs coordination between these departments for its successful deployment.
The IEEE SB of NIT-Tiruchirappalli in association with Institute of Engineers (IEI India)- Tiruchirappalli Local Centre (TLC) & Tamil Nadu State Centre (TNSC) organized a technical webinar using Zoom software.

The webinar was handled by Dr. Raji Sundararajan, Professor, School of Engineering Technology, Purdue University, Indiana, USA.

Dr. Sundarajan started by describing Cancers and how they are different from other diseases. She then spoke about cancer treatments and its challenges. She then explained about Electrochemotherapy, an alternative therapy based on Electroporation.

Invited talk on “Electro-Therapies for Virus-based Cancers: Another Look” on 26.05.2020
An online technical talk was given by Dr. B. Dastagiri Reddy, Assistant Professor, Department of EEE, NIT Surathkal through Cisco Webex Meetings.

Dr. Reddy was one of the team members behind ABB’s flash charging technology for electric buses. He started the session by discussing some of the practical solutions to charge e-buses.

Dr. Reddy then compared on-board and off-board chargers. He also gave details of international projects where this technology is being tried out.
Invited talk on “Achieving Sustainable Development goals through ICTs”

- The IEEE SB of NIT-Tiruchirappalli in association with Institute of Engineers (IEI India)- Tiruchirappalli Local Centre (TLC) & Tamil Nadu State Centre (TNSC) organized a technical webinar on the topic “Achieving Sustainable Development goals through ICTs” using CISCO Webex Meetings app.
- The technical webinar was handled by Dr. N.V.S.N.Sarma, Director, IIIT Trichy. The session was attended by several UG & PG students along with engineers from IEI.
- Dr. Sarma talked in detail about sustainable development and the seventeen goals it is expected to meet. He also spoke about the role of ICT in bringing about the sustainable development age after having paved the way for the information age. He also presented an ICT framework for meeting the said goals.

Invited talk on “Achieving Sustainable Development goals through ICTs” on 02.06.2020
Invited talk on “Fundamentals of Block Chain and its Applications”

- An online technical talk was given by Dr. Modi Chirag Navinchandra, Assistant professor, Department of Computer Science and Engineering, NIT Goa.
Invited talk on “How Microstrip antenna works”

• An online technical talk was given by Dr. K.P. Ray, Dean (Research), Head of Electronics Engineering & Computer Science Department, Professor In Charge of International Cooperation & MOU in Defence Institute of Advanced Technology (DIAT), Ministry of Defence, Pune via Cisco Webex Meetings application.

• Dr. Ray explained in great detail the working of microstrip transmission line and microstrip antenna (MSA). He then discussed the different configurations of MSA, in particular the rectangular, circular and triangular MSA configurations.

• The talk was attended by UG & PG students from CSE, EEE & ECE departments of NIT Tiruchirappalli.
Invited talk on “Engineering Electromagnetics: Concept, Methodology and Techniques for High Impact Learning and Teaching”

- The IEEE Student Branch of NIT-Tiruchirappalli in association with IEEE-MTTS chapter organized a technical webinar using CISCO Webex Meetings app.
- The webinar was handled by Dr. Chinmoy Saha, Associate Professor, Department of Avionics, IIST Thiruvananthapuram.
- During the session, Dr. Saha compared two ways of teaching Electromagnetics - the traditional ‘chalk and talk’ technique that relies heavily on lengthy mathematical derivations and an innovative computer based technique that utilizes graphic aids. Topics like Rectangular and circular waveguides, Dielectric Resonator & Circular Polarization were explained to the attendees with the help of animations.

Invited talk on “Engineering Electromagnetics: Concept, Methodology and Techniques for High Impact Learning and Teaching” on 15.06.2020
The inaugural ceremony of the student chapter of IEEE Computer Society was held via CISCO Webex Meetings application.

The Chief guest of the inaugural ceremony was Dr. Chandra Shekar Lakshminarayanan, Asst. Prof., Dept. of CSE, IIT Palakkad. The proceedings were presided over by Dr. N Ramasubramanian, CSE Dept., NITT.

Mr. K. Kannadasan, Chairman & Secretary, IEEE SB NITT gave the welcome address. This was followed by the presidential address and the inaugural address by the respective dignitaries. Dr. M.P. Selvan, SB Counselor released the list of office bearers. The action plan for the chapter was presented by Dr. B. Shameeda Bhegum, Chapter Advisor. The vote of thanks was given by the chapter chairman Mr. C. Sekar.
Invited talk on “Reinforcement Learning: The frontier of Artificial Intelligence”

- The IEEE Student Branch of NIT-Tiruchirappalli in association with IEEE-Computer Society chapter organized a technical webinar using CISCO Webex Meetings application.
- The webinar was handled by Dr. Chandra Shekar Lakshminarayanan, Asst. Prof., Dept. of CSE, IIT Palakkad.
- Dr. Lakshminarayanan introduced several state of the art AI applications from across the world. He explained the need for smart programs to perform real world tasks that cannot be broken down into a sequence of commands. He also covered hot topics like Machine Learning and Reinforcement Learning. He highlighted probability & decision theory as the most important subjects for students wishing to pursue AI.

Invited talk on “Reinforcement Learning: The frontier of Artificial Intelligence” on 27.06.2020
Invited talk on “Analog Beamforming Networks”

• An online technical talk was given by Dr. Mrinal Kanti Mandal, Senior Member, IEEE working as Associate Professor, Department of ECE in IIT Kharagpur.

• After giving a general introduction to beamforming networks, Dr. Mandal compared the pros and cons of analog beamforming networks against their digital counterparts. He then moved on to the theory and working of analog beamforming networks, the central topic of the session. He explained both the time domain and frequency domain approaches of analysing these networks. He also talked about the relevant ongoing research in IIT Kharagpur and their developments.

• The talk was attended by UG & PG students from CSE, EEE & ECE departments of NIT Tiruchirappalli.
Technical Workshop on “Deep Learning”

A five-day technical workshop on Deep Learning was organized by the IEEE Student Branch and IEEE Computer Society Chapter of NIT Tiruchirappalli in association with Pantech Solutions from 6th to 10th July 2020.

On day 1, the participants were introduced to deep learning & neural networks. On day 2, the basics of Python programming were covered, along with different types of data structures & modules available in Python. Scientific Python was covered on day 3 with the help of libraries like NumPy, Pandas, TensorFlow & Keras. The design and working of popular classification algorithms like MLP & PNN were explained on day 4. Classification using CNN algorithm and a few real time projects were discussed on the last day of the workshop.

Technical Workshop on “Deep Learning” from 06.07.2020 to 10.07.2020
An online technical talk was given by Dr. Maurizio Bozzi, Fellow, IEEE currently working as Full Professor, University of Pavia, Italy.

Dr. Bozzi started the session by introducing the current trends in microwave technology applicable to 5G. He then spoke about Substrate Integrated Waveguide (SIW) technology. He then explained how SIW components could be miniaturized and innovated with new materials like 3D printed materials, textile and paper.

The talk was attended by UG & PG students from CSE, EEE & ECE departments of NIT Tiruchirappalli.
Invited talk on “Lung Ultrasound Imaging for COVID19: From Physics to Neural Networks”

- An online technical talk was given by Dr. Mahesh Raveendranatha Panicker, Assistant Professor, Department of EE in IIT Palakkad.

- Dr. Panicker started the session by explaining about the physics behind ultrasound imaging and the different components in a typical ultrasound system. He then described the anatomy & ultrasound image of healthy lungs and highlighted how lung infection due to COVID19 appears in ultrasound. After a brief introduction to deep learning, Dr. Panicker moved on to the applications of neural networks in classifying the severity of infection.

- The talk was attended by UG & PG students from CSE, EEE & ECE departments of NIT Tiruchirappalli.

Invited talk on “Lung Ultrasound Imaging for COVID19: From Physics to Neural Networks” on 15.08.2020
Invited talk on “Antenna Systems for Satellite, Aircraft & Ground Communication”

- An online technical talk was given by Dr. Sudhakar Rao, IEEE Life Fellow, Senior Technical Fellow, Northrop Grumman Aerospace Systems, California, USA.
- Dr. Rao started the session by introducing antenna systems with special emphasis on satellite antennas. He covered the basics of satellite based communication and different types of satellites. Dr. Rao also explained reflector antennas and phased arrays in great detail. He concluded the session by highlighting the recent developments in ground and vehicular antennas.
- The talk was attended by UG & PG students from CSE, EEE & ECE departments of NIT Tiruchirappalli.
Invited talk on “Power Controllers for Wind Energy Conversion Systems”

• An online technical talk was given by Dr. Vijayakumar Krishnasamy, Assistant Professor, Department of ECE, IIITDM Kancheepuram.

• Dr. Krishnasamy started the session with the expected energy transformation and renewable energy by 2050. He then compared the horizontal & vertical axis wind turbines. He also described the grid connected & stand alone operation of wind energy conversion systems. He further highlighted the key differences between fixed speed and variable speed wind turbines.

• The talk was attended by UG & PG students from CSE, EEE & ECE departments of NIT Tiruchirappalli.

Invited talk on “Power Controllers for Wind Energy Conversion Systems” on 26.08.2020
Invited talk on “Recent Trends in Autonomous Vehicles”

- An online technical talk was given by Dr. Anbalagan Thangavel, Technical Project Manager, BOSCH Coimbatore.

- Dr. Thangavel started the session by introducing some of the recent megatrends in demography, urbanization, energy & connectivity with emphasis on vehicle trends in ownership, business models and usage. He then explained the foundations of automated driving like legislation, safety & security, surround sensing & system intelligence. Dr. Thangavel then described the role of HMI in autonomous driving.

- The talk was attended by UG & PG students from CSE, EEE & ECE departments of NIT Tiruchirappalli.

Invited talk on “Recent Trends in Autonomous Vehicles”
on 29.08.2020
Invited talk on “Artificial Intelligence in Healthcare Applications”

• An online technical talk was given by Dr. P. Krishnamoorthy, Scientist II at Philips Research, Bangalore.

• Dr. Krishnamoorthy started the talk by explaining the basics of Machine Learning & Artificial Intelligence (AI). He introduced various applications of AI in healthcare and explained how AI helps prevent treatment delays, spots subtle signs of deterioration, and aids doctors in going through a lot of data. He highlighted liver segmentation & lesion detection, patient motion detection and cardiovascular disease (CVD) risk prediction as the areas in which AI is utilized the most.

• The session was attended by UG & PG students, PhD scholars and faculties from all over the country.
**Invited talk on “Alchemy of Data in AI”**

- An online technical talk was given by Mr. Mohit Agrawal, Senior software engineer, Teradata R&D Labs.
- Mr. Agrawal started the talk by explaining the basic difference between Artificial Intelligence (AI), Machine Learning (ML) and Deep Learning (DL). He then introduced DL models such as ImageNet, AlexNet and GoogleNet. He pointed out power consumption as the key challenge to be overcome in the field of AI. He concluded the talk by suggesting some open research problems to the audience worth pursuing.
- The session was attended by UG & PG students, PhD scholars and faculties from all over the country.
Invited talk on “Tunable SIW Antennas”

- An online technical talk was given by Dr. Arani Ali Khan, Assistant Professor, Dept. of Electrical Engineering, IIT Jodhpur.
- Dr. Khan started the talk by briefly introducing the Substrate Integrated Waveguide antennas, crucial design aspects and the challenges of attaining a better design. The tunability of such structures and their demands in RF industry were explained in detail. The mode of propagation of electric fields in the structure was analyzed and explained. He concluded the talk by encouraging the participants to identify novel solutions in this field.
- The session was attended by UG & PG students, PhD scholars and faculties from all over the country.
Invited talk on “Power Management Techniques in Current SOCs”

- An online technical talk was given by Mr. Shankar Ganesh, RTL Design Engineer at Intel Corporation, Bengaluru.
- Mr. Ganesh started the session by introducing the types of power losses found in a chip such as switching, leakage & internal power losses. He then highlighted the components in a chip that consume power viz. combinational and sequential circuits, clock network, memory and analog components. After that, he talked in length about the techniques of power reduction in HDL, which are clock gating, minimizing signal transition, resource sharing & state encoding. He also spoke about sensors in the chip that aid in power management.
- The session was attended by UG & PG students, PhD scholars and faculties from over the country.
Invited talk on “Digital Twins AI and IoT over Tea”

• An online technical talk was given by Mr. Rajbarath KR, IoT consulting practice & business development, TCS.

• Mr. Rajbarath started by explaining the different layers in IoT and data collection process of digital twins. He explained about the dimensions of digital twin and designing a digital twin technology for a given problem with examples. He depicted a case study for better understanding of the digital twins. He concluded the session by summarising about the applications of digital twin technologies in TCS for their service and products.

• The session was attended by UG & PG students, PhD scholars and faculties from all over the country.
Technical Poster Contest

• The IEEE Student Branch of NIT-Tiruchirappalli organized a technical poster contest for students and research scholars on the occasion of IEEE Day 2020.

• The theme of the poster contest was “Evolution of a technology” as applicable to the four engineering streams – Electrical, Electronics, Computer Science and Communication connected with IEEE.

• Cash prizes were announced for the best poster in each stream. The winners were selected by a set of panelists who reviewed the posters based on their creativity and information conveyed.
Invited talk on “Evolution of Electronics”

- An online technical talk was given by Dr. S. Moorthi, Associate Professor, Dept. of EEE, NIT Tiruchirappalli.
- Dr. Moorthi started the talk with vacuum tubes, which was the first electronic device invented by a group of scientists. Gradually he moved on to modern electronic devices used in today’s technology. A detailed evolution of electronics since its origin was presented. He also mentioned about the Moore’s law and the expectations and challenges for future technologies. Dr. Moorthi concluded his talk with the status of research in micro/nano electronics.
- The session was attended by UG & PG students, PhD scholars and faculties from all over the country.
Creation of official INSTAGRAM account

- On the occasion of IEEE Day 2020, IEEE SB NITT created its official account in Instagram to connect with young people and students.
- IEEE SB NITT already has official accounts in Facebook and LinkedIn to connect with people outside NITT.

INSTAGRAM account opened on 06.10.2020
The IEEE Student Branch of NIT Tiruchirappalli and the student chapters of IEEE Computer Society, Industry Applications Society, and Power & Energy Society organized a five-day Online Faculty Development Programme (FDP) via WebEx Meetings on "Smart Grid Features and Blockchain Technology for Smart Grid". The five-day workshop began on 16th November and ended on 20th November 2020.

The FDP was inaugurated by Dr. Mini Shaji Thomas, Director, NIT Tiruchirappalli on 16th November at 9:30 a.m. The inauguration ceremony was presided over by Dr. N. Kumaresan, IEEE SB Advisor, NIT Tiruchirappalli.
Day 1 of FDP on “Smart Grid Features and Blockchain Technology for Smart Grid”

- Two sessions were arranged on Day 1 of the FDP.
- The first session was on “Introduction to Smart Grid” by Dr. M. P. Selvan, Associate Professor, Dept. of EEE, NIT Tiruchirappalli. Topics like evolution of power grid, smart grid components, initiatives in India, smart meters, smart home and P2P energy trading were covered during this session.
- The second session was on “Communication Technologies, Standards & Protocols for Smart Grid” by Dr. A. Paventhan, Director (R&D), ERNET India, IIT Madras Research Park. Dr. Paventhan covered several topics like Internet of Things, wireless sensor networks, emerging standards towards IoT, connectivity options in SG, and software frameworks required for their effective implementation.
Day 2 of FDP on “Smart Grid Features and Blockchain Technology for Smart Grid”

- Two sessions were arranged on Day 2 of the FDP.
- The first session was on “Battery Energy Storage for Seamless Transitions in AC Microgrid” by Dr. B. Dastagiri Reddy, Assistant Professor, Dept. of EEE, NIT Surathkal. Dr. Reddy explained the key features of Microgrids. He covered the control aspects of grid interactive microgrids with several distributed energy resources.
- The second session was on “Demand Side Management” by Dr. Arun S.L., Assistant Professor, Dept. of EE, SELECT, VIT Vellore. Dr. Arun started the session with traditional power systems. He then elaborated on popular demand side management schemes like demand response, peak load management and energy conservation. He also explained how household loads maybe modelled.
Day 3 of FDP on “Smart Grid Features and Blockchain Technology for Smart Grid”

- Two sessions were arranged on Day 3 of the FDP.
- The first session was on “Electric Vehicles in Smart Grids” by Dr. C. Vyjayanthi, Associate Professor, Dept. of EEE, NIT Goa. Dr. Vyjayanthi spoke about the benefits of EVs over conventional vehicles. She then explained the different types of EVs, their components, different modes of charging & discharging like G2V, V2G, V2H & V2L, the Indian scenario & cyber security challenges.
- The second session was on “Embedded Systems and its influence on Smart grids” by Dr. S. Moorthi, Associate Professor, Dept. of EEE, NIT Tiruchirappalli. Dr. Moorthi covered several interesting topics like Industry 4.0, cyber physical systems, characteristics of embedded systems, IoT, real time systems, co-design ladder, configuration of embedded controllers for microgrids.
Day 4 of FDP on “Smart Grid Features and Blockchain Technology for Smart Grid”

- Two sessions were arranged on Day 4 of the FDP.
- The first session was on “Blockchain Technology and its Applications” by Dr. K. Chandrasekaran, Professor, Dept. of CSE, NIT Surathkal. Dr. Chandrasekaran covered several interesting topics like business model & ledgers, distributed ledger technology, benefits of blockchain, differences between blockchain, bitcoin, smart contract and DLT, and several analogies on blockchain technology.
- The second session was on “Concepts of Blockchain Technology” by Dr. Kunwar Singh, Assistant Professor, Dept. of CSE, NIT Tiruchirappalli. Dr. Singh covered several important topics like when to use Blockchains, hash puzzles, decentralized goofy coin (Bitcoin), consensus algorithm and forking.

Day 4 of FDP on “Smart Grid Features and Blockchain Technology for Smart Grid” on 19.11.2020
Day 5 of FDP on “Smart Grid Features and Blockchain Technology for Smart Grid”

- Two sessions were arranged on Day 5 of the FDP.
- The first session was on “Blockchain Technology for Smart Grid” by Dr. Modi Chirag Navinchandra, Assistant Professor, Dept. of CSE, NIT Goa. Dr. Navinchandra covered topics like introduction to blockchain, blockchain vs normal database, applications of blockchain in smart grids, and integrating smart grids with electric vehicles using blockchain.
- The second session was on “Smart Contracts” by Dr. Kiran M, Associate Professor, IT Department, NIT Surathkal. Dr. Kiran explained the theoretical background of smart contracts. He then explained how to write smart contracts using Ganache, Ethereum and Solidity programming language.
Invited talk on “Gateway to PMRF”

• An online talk was given by the PMRF scholars Ms. Merlin Mary and Mr. Sundaramahalingam, and their research guides Dr. Shelas Sathyan and Dr. Sivashanmugam of NIT Tiruchirappalli.

• Dr. Sivashanmugam and Dr. Sathyan stressed on the need for a good research proposal. Dr. Sathyan described the different parameters that were considered like academic performance, GATE/NET score, performance during PhD course work and publications. Dr. Sathyan’s talk was followed by a presentation from the PMRF scholars, in which they shared their experience and gave tips for junior research scholars.
Invited talk on “Energy Conservation & Energy Efficiency”

- The IEEE SB of NIT-Tiruchirappalli in association with Institute of Engineers (IEI India)- Tiruchirappalli Local Centre (TLC) & Tamil Nadu State Centre (TNSC) organized a technical webinar on the topic “Energy Conservation & Energy Efficiency” using Zoom Meetings app.
- The technical webinar was handled by Dr. R Harikumar, Director (in-charge), Energy Management Centre, Government of Kerala.
- The session was attended by UG & PG students, PhD scholars and faculties from all over the country. Engineers from IEI were also in attendance.
IEEE Membership Drive

- As part of the IEEE membership drive, an online session was handled by Dr. P Raja, Asso. Prof., Department of EEE, NIT Tiruchirappalli and Mr. Kannadasan K, Chairman, IEEE SB NITT.

- Dr. Raja started the session with the history of IEEE. He then introduced the ten regions of IEEE. Dr. Raja spoke in detail about the Madras Section. He explained about the different types of IEEE memberships and their benefits. He also highlighted the importance of IEEE Xplore digital library.

- Mr. Kannadasan’s talk was about IEEE SB NITT and its student chapters. He listed some of the IEEE activities organized over the years. He then highlighted the benefits of student membership and revealed a special promo code for students.
Technical Society Chapters

1. Antennas & Propagation Society (APS) chapter
2. Computer Society (CS) chapter
3. Industry Applications Society (IAS) chapter
4. Microwave Theory & Techniques Society (MTTS) chapter
5. Power & Energy Society (PES) chapter
IEEE Student Branch Activities - 2020

- Invited Talks – 26
- Inauguration Ceremonies – 2
- Awareness Programs – 1
- FDPs - 1
- Training Program – 1
- Membership Drive – 2
- Technical Workshop – 2
- Industrial Visit – 1
- IEEE Day Celebration – 1
- Competitions - 1
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<tr>
<th>Name</th>
<th>Designation/Department</th>
<th>Role</th>
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<tr>
<td>Dr. M.P. Selvan</td>
<td>Associate Professor/EEE</td>
<td>Branch Counsellor</td>
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<tr>
<td>Dr. N. Kumaresan</td>
<td>Professor/EEE</td>
<td>IEEE SB Advisor</td>
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<tr>
<td>Dr. A.K. Bakthavatsalam</td>
<td>Professor/T&amp;P</td>
<td>Coordinator, IEEE - EPICS</td>
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<tr>
<td>Dr. K. Dhanalakshmi</td>
<td>Professor/ICE</td>
<td>Women in Engineering &amp; Initiation of IEEE society activities</td>
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<tr>
<td>Dr. Rajeswari Sridhar</td>
<td>Associate Professor &amp; Head / CSE</td>
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<tr>
<td>Dr. M. Venkatakirthiga</td>
<td>Associate Professor/EEE</td>
<td>Faculty Secretary, IEEE SB, NITT</td>
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<tr>
<td>Dr. P. Raja</td>
<td>Associate Professor/EEE</td>
<td>Membership drive &amp; Faculty Advisor, PES Chapter</td>
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<tr>
<td>Dr. S. Moorthi</td>
<td>Associate Professor/EEE</td>
<td>Student project funding &amp; Faculty Advisor, IAS Chapter</td>
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<tr>
<td>Dr. R. Pandeeswari</td>
<td>Associate Professor/ECE</td>
<td>Faculty Advisor, APS Chapter</td>
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<td>Dr. S.S. Karthikeyan</td>
<td>Assistant Professor/ECE</td>
<td>Faculty Advisor, MTTS Chapter</td>
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<td>Dr. B. Shameedha Begum</td>
<td>Assistant Professor /CSE</td>
<td>Faculty Advisor, Computer Society</td>
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<tr>
<td>Dr. R. K. Kavitha</td>
<td>Assistant Professor / ECE</td>
<td>Membership drive, Student project funding &amp; Mentoring various student activities.</td>
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<tr>
<td>Dr. S. Jaya Nirmala</td>
<td>Assistant Professor / CSE</td>
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# IEEE Student Branch Committee

## Student Members

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<th>Name</th>
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<tr>
<td>Mr. Kannadasan K</td>
<td>Ph.D./CSE</td>
<td>Chairperson</td>
</tr>
<tr>
<td>Mr. Nagendra Kumar Tiwari</td>
<td>M.Tech./EEE</td>
<td>Vice-Chairperson</td>
</tr>
<tr>
<td>Mr. Kannadasan K</td>
<td>Ph.D./CSE</td>
<td>Secretary</td>
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<td>Additional Secretary</td>
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<td>Treasurer</td>
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<td>Ms. Nandhini C</td>
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<td>Webmaster</td>
</tr>
</tbody>
</table>
# IEEE Student Branch Committee

## Student Members – Executive Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Program/Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Mekala Ananda Reddy</td>
<td>Ph.D./ECE</td>
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<td>Mr. Nrusingha Charan Pradhan</td>
<td>Ph.D./ECE</td>
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<td>Mr. Arjun Visakh M</td>
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<td>Mr. Nindra Sekhar</td>
<td>Ph.D./EEE</td>
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<td>Mr. N Nageswara Reddy</td>
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<td>Ms. Suhanya M.S.</td>
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<td>M.S./EEE</td>
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<td>Mr. Prafulkumar Mulik</td>
<td>M.Tech./EEE</td>
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<td>Mr. Sandeep Kumar Singh</td>
<td>M.Tech./EEE</td>
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<td>Mr. Alok Kumar</td>
<td>M.Tech./CTM</td>
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<tr>
<td>Mr. Srivatsan K</td>
<td>B.Tech./ICE</td>
</tr>
<tr>
<td>Mr. S. Chrisben Gladson</td>
<td>Ph.D./ECE</td>
</tr>
<tr>
<td>Mr. Pratik Pawade</td>
<td>MCA</td>
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CERTIFICATE OF RECOGNITION

Awarded to

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in appreciation to IEEE Student Branch

activities during the year 2020.

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Secretary, IEEE Madras Section

Dr. N. Kumarappan
Chairman, IEEE Madras Section & Chairman, Student Activity Committee
Thank You