

Region 10 Madras Section Report 2021

PART A - SECTION SUMMARY

A.1 Executive Summary –

IEEE Madras section is one of the vibrant sections in India, which is seen from the membership growth and the various activities conducted. In the year 2021, the section conducted flagship international conference series IEEE Madras Section International Conference (MASCON) With the support of R10, Mini POCO (panel of conference organizers) workshop was organized. SAC Student Branch Membership Development and Leadership Training (SBMDLT) was organized by IEEE MAS SAC funded by IEEE R10 SAC. With the support of the IEEE Region10 Young Professionals and IEEE MAS YP major events, Upskill & HighPreneur were conducted. R10 Sponsored project four membership development program was executed

Apart from that Project Vidhya program was organized in collaboration with IEEE Madras Section, IEEE INSPIRE INDIA, IEEE Try Engineering & IEEE MADRAS YP and was funded by the IEEE Pre-University STEM Portal Grant program & a number of events were also executed for the betterment of the members. Various society chapters, Affinity groups & Student branches have also performed diverse events. Funding was given to six selected student project teams to develop the product. Also, the rebate was distributed to 49 student branches. As a new endeavor, various were awards distributed to the student branches and section members.

❖ Section Executive Committee Member List

Sl.No.	Name	Position
1	Dr. N. Kumarappan	Chairman
2	Dr. P. A. Manoharan	Immediate Past Chair
3	Dr. R. Hariprakash	Vice Chairman (academic)
4	Dr. R. Ramarathanam	Vice Chairman (Industry)
5	Dr. D. Devaraj	Secretary
6	Dr. S. Joseph Gladwin	Treasurer
7	Dr. R. Venkatesan	Member
8	Dr. N. Nithyavathy	Member
9	Dr. D. Nirmal	Member
10	Dr.R.G. Sangeetha	Member
11.	Dr. S. Thangaprakash	Member
12.	Dr. M. Venkateshkumar	Member
13.	Dr. K. Vijayakumar	Member

➤ A new initiative by the section:

As a new initiative, the section pitched IEEE Madras Section International Conference (MASCON), a flagship international conference series of the IEEE Madras Section conference.

Section rebate was distributed to 49 student branches based on their membership and activities.

IEEE R10 SAC Student Branch Membership Development, and Leadership Training (SBMDLT) is conducted to persuade sections/student branches to organize events on leadership.

Organized Student Technical Symposium (MAS-E TECH) to improvise students' technical proficiency.

Awarded 9 projects to strengthen their student's activities in order to increase the student members and professional members and to enhance their Student Branch.

❖ **Section Highlights:**

IEEE Day 2021:

The IEEE Day Celebration of IEEE Madras Section happened on October 31, 2021, between 9.30 AM – 1.30 PM. The event commenced with a delightful welcome where the productive members of the Madras Section had a good networking in-person after a long time. Dr. N. Kumarappan, Chairman, IEEE Madras Section, Dr. Joseph Gladwin, Treasurer, IEEE Madras Section, Dr. S. Salivahanan, Past Chairman, IEEE Madras Section, TM Sathya Jayaraman, Application Delivery Manager, DXC Technology and our Chief Guest Mr. Deepak Mathur, Director, IEEE Region 10 were presented on the podium. After the devoted invocation, IEEE Madras Section Executive Committee members, the Chief Guest, and the Keynote Speakers lightened the Kuthuvilaku. Dr. N. Kumarappan, Chairman, IEEE Madras Section, welcomed everyone and flip through the activities and valuable events that happened in 2021, honoring the funds raised by the Madras section, Student Branches, and appreciated section students, ExCom Members, Professional Members, and Student Branches, who worked hard and deserved the awards. Followed by our Chairman, Our Chief Guest Mr. Deepak Mathur, Director, IEEE Region 10, continued his speech.

He started by thanking the Madras section team for inviting him to the IEEE Day celebration. Also, congratulated the Madras section for the successful completion of the first flagship event MASCON 2021 and he was appreciated for deserving the Membership Recruiting & Retention Performance Award 2021. Then, he started narrating his journey from being a member of IEEE to becoming the Director of IEEE Region 10. Finally, he encouraged the volunteers to be involved in various activities and urged them to develop their network & build professionalism. Then Dr. S. Salivahanan Vice Chancellor, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology gave a detailed presentation on "Know Your IEEE". He explained various opportunities and benefits that IEEE provides from being a student member to senior members. The session was continued by keynote speaker TM. Sathya Jayaraman, Application Delivery Manager, DXC Technology, Chennai. His speech started with deep silence which made the audience observe him. He continued his speech by abbreviating the term "AD-HOC" which explained the goals, opportunities in life. Furthermore, he suggested improvising and developing observance and communication skills.

Finally, he added the importance of IEEE on how it's connecting everyone irrespective of their age. The Chief Guest Mr. Deepak Mathur, and the keynote speaker Dr. S. Salivahanan, TM. Sathya Jayaraman was felicitated by Chairperson Dr. N. Kumarappan and provided with the Memento for their contribution. Then the actual celebration began with a cake cutting and group photo. Dr. Hariprakash, Vice Chairman, IEEE Madras Section, has joined with this awesome moment and he appreciated IEEE Madras MDC for achieving the Membership Recruitment & Retention Performance Award 2021. After a few minutes of break, the event started by recognizing members of the Madras section who has published their Journals in IEEE were presented and appreciated with "Publication Award" and IEEE Madras Section ExCom Members were felicitated for receiving the Membership Recruitment & Retention Performance Award 2021. The office staff and the volunteers were recognized and admired for their valuable time and contribution. Shortlisted student branches were asked to present a brief video about their Student Branches and proposed to explain what are all the activities and events that have been undertaken to extend IEEE on their campus. Followed by this, an interactive and fun-filled networking session based on "IEEE Events" has been conducted among the audience by IEEE Madras Young Professionals & Madras SCT volunteers. At last, Dr. Joseph Gladwin, Treasurer, IEEE Madras Section patted everyone, gave the Vote of thanks, and Gifts were delivered for the attendees. The Entire meeting ended with the networking lunch.

➤ **IEEE Student Branch Officers' Meet:**

IEEE MADRAS SECTION STUDENT OFFICE BEARERS MEET The IEEE Madras Section Office Bearers Meet took place at Hotel Le Royal Meridien on 12th Dec 2021. The Meet Commenced at 10 AM with the Inaugural ceremony. Dr. N. Kumarappan welcomed the gathering with his kind and motivating words. Following his welcome note, Mr. Ashvanth welcomed the Chief Guest, Mr. Sarath Chandar, General Manager of Vaken Technologies to present a few words. After his keynote, Dr. N. Kumarappan Felicitated the chief guest and the meeting continued following a Tea break. After the break, The Participant's self-introduction took place, Following that Dr. N. Kumarappan briefed about the Awards & Opportunities available in IEEE for the Student Branches. Following his session, Dr. S. Joseph Gladwin presented a talk on SB Funding Opportunities from IEEE MAS and other IEEE Sources and he also clarified the doubts raised by the Student Branch Counselors.

The succeeding session on Newsletter Reporting & Guidelines was presented by Mr. Arun in which he pointed out some major guidelines for error-free reporting and documentation practices. Mr. Aravindhan Anbazhagan presented a session on Creating an Action Plan for Student Branches. He briefed on some important aspects to consider while Planning. The last session of the Meet was presented by Mr. Ashvanth on Effective tools for Student Branch Volunteers in which he shared his valuable experience and effectiveness of the tools he used. The Office bearers meet concluded with a Networking session in which office bearers of different Student Branch Chapters are grouped together as teams and competed in an IEEE Themed Connection Quiz Event. All the participants were given IEEE goodies as a token of gratitude and the Meet officially ended with a Delightful Lunch & Networking session.

Student Project Funding:

In order to encourage technology advancements, Creativity, and innovation project proposals were invited from all the Student branches of the Madras Section. 48 different project proposals were received and the proposals were scrutinized by the member review committee of the relevant specialization based on the recommendation by the committee, 21 project proposals were shortlisted. The presentation and demonstration of these projects were held in the month of April and the following best projects have been funded.

IEEE Madras Section Student Project Funding(SPF- 2020–21)

Sl. No.	College Name	Project Title	Sl.No	Student Details	Prize Amount
1	SRM Institute Of Science And Technology	Sovereign fishing and monitoring 'BOT'	1	Mr. Akash Singh	15000
			2	Shristi baghel	
2	St. Joseph's College of Engineering	Savvy Forecast LPG Observing and Explosion Management	1	Hounandan R	15000
			2	Kumaran MS	
			3	Prahatheesh B	
3	SSN College Of Engineering	Ultrasonic sterilization for hospitals and crowded areas due to COVID	1	Vishnuvazzala Laasya Subramanyam	10000
			2	Vishnuvazzala Sasya Subramanyam	
			3	Chetana Krishnan	
4	Kumaraguru College of Technology	A Deep Learning-Based Multiclass Segregation of E-Waste	1	S.Elangovan	10000
5	SNS College of Technology	Home Automation Using Li-Fi Technology	1	A.V. Sripathi	5000
			2	G. Arvindh Kumar	
6	SRM Institute of Science and Technology (SRM IST)	Robotic Prosthetic Arm for Amputee	1	NimeshBhevan A R	5000
			2	Vinod M	
			3	Yogesh H	

Technical Sponsorships and Financial Assistance to the student branches:

IEEE Madras Section provides Financial Assistance to the activities such as, Conferences, Workshops, Seminars, Symposia, etc., organized by the student branches. The norms that have been defined for such Financial Assistance are based on the budget and number of members available in each branch. During the year 2021, 13 such programs have been extended financial support to the tune of Rs. 1,82,000/-.

Faculty Development Program(FDP)

In order to enhance the quality of teaching-learning Section is actively conducting the Faculty Development Programs in the relevant technical areas in various Engineering Institutions located in different parts of Tamil Nadu. During the year 2021, 4 such programs were organized and the summary is given below:

Sl.No.	Date	Topic	Venue (online)	No. of participants
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1.	March 24-27, 2021	Leveraging AI in Cyber-Physical Systems	Thiagarajar College of Engineering	62
2.	05th - 8th July 2021	Advanced Reactive Power Management of Power Networks	Dhanalakshmi Srinivasan Engineering College	82
3.	May 10-13, 2021	Practical Exposure on Fundamental Mathematics behind Machine Learning	SRM IST, Kattankulathur	120
4.	5-7 Aug 2021	IoT for Healthcare Applications	National Engineering College	42

Section Technical Chapter:

IEEE Madras Section has 28 Technical Society Chapters and 3 Affinity Groups. The tables below indicate the Technical Society Chapters, Affinity groups Chairpersons:

Technical Society Chapters:

Sl no.	Society Name	Chairperson
1	Aerospace and Electronic Systems (AES)	Dr.T.Muthumanickam
2	Antennas and Propagation (APS)	Dr.T.Shanmuganatham
3	Broadcast Society (BS)	Dr. B. Nagaraj
4	Computer Society (CS)	Dr. Sheila Anand, Vice-Chair
5	Communications (COMSOC)	Mr. P. Subramanian
6	Computational Intelligence (CIS)	Dr. N. Kumarappan
7	Control Systems (CSS)	Dr.N.S.Bhuvanewari
8	Engineering in Medicine & Biology (EMBS)	Dr. K. B. Jayanthi
9	Electron Devices (EDS)	Dr.Ajayan
10	Education (ES)	Mr. A. Darwin Jose Raju
11	Electromagnetic Compatibility(EMCS)	Dr. P. Salil
12	Geoscience and Remote Sensing (GRSS)	DR. S. S. Ramakrishnan
13	Industrial Applications (IAS)	Mr. R.Srinivasan
14	Information Theory (ITS)	Dr.V.Gomathi
15	Instrumentation and Measurement (IMS)	Dr. Uppu Ramachandraiah
16	Industrial Electronics (IES)	Dr. M. Arun
17	Microwave Theory and Techniques (MTTS)	Dr. V. Abhaikumar
18	Nano Technology Council (NTC)	Dr Madheswaran
19	Power and Energy (PES)	Dr. Mahesh Kumar
20	Power Electronics (PELS)	Dr.R.Seyezhai
21	Product Safety Engineering (PSES)	Dr. R.Dhanasekaran
22	Professional Communication (PCS)	Dr. E. Kannan
23	Photonics (PS)	Dr. C. Arunachalaperumal
24	Robotics and Automation (RAS)	Dr.Vinod B
25	Social Implications of Technology (SITS)	Mr. R. Navaneethakrishnan
26	Signal Processing (SP)	Dr. N. Venkateswaran
27.	Technology and Management (TEMS)	Dr. Kulanthaivel
28.	Oceanic Engineering (OES)	Dr. Sannasiraj

Affinity Groups

Sl.No.	Affinity Group Name	Chairperson
1.	WIE Affinity Group	Dr. N. Nithyavathy
2.	Young Professionals	Mr. A. Aravindhan
3.	Life Members	Mr. S., Sundaresh

MAS LINK, the newsletter of Madras Section is being published once in two months as an eNewsletter, It is circulated to all the members of the section including student members. Each issue is uploaded to the IEEE Madras Section website in order to reach more members around and to add more information. The newsletter includes the following:

1. Chairman's Message
2. Editor's Column
3. Activities are reported by the various student branches & student branch chapters of the section to encourage better performance.
4. Activities reported by the various society units.
5. Announcements and reporting regarding the Conferences, Workshops, Seminars, Symposia, etc., coordinated by the section, technical society chapters, affinity groups, and student branches functioning in various institutions.
6. Achievements of professional members.

❖ **Major Events (International, National)**

IEEE MASCON 2021:

An initiative of the IEEE Madras section to organize the first-ever hybrid Conference of 2021 with many precautions and overcoming the hurdles was an immense success MASCON 2021 - IEEE Madras Section International Conference 2021 took place for two days from 27, 28 of August 2021 at Le Royal Méridien, Chennai, Tamil Nadu. The conference provided a technical forum for innovators and researchers to present their findings among the leading experts in the industries. The initiative to this first-ever hybrid signature conference of the Madras Section was taken and executed by Dr. N Kumarappan, General Chair, MASCON 2021. The technical tracks such as Devices, Materials and Processing, Electrical Engineering, Information and Communication Systems, Computing Technologies, Sustainable Technologies had about 547 registered papers from 12 countries out of which about 200 papers were selected and 121 papers were accepted and 87 were registered by a specialized technical committee to be presented at the first hybrid conference.

Under the guidance and immense support of Dr. N. Kumarappan, General Chair, MASCON 2021, the massive hybrid initiative started with the 5 technical tracks being parallel taking place the committee featured plenary talks from leading and top-notch experts in various industries across the globe such as Mr. John D. McDonald P.E., Smart Grid Business Development Leader, GE's Grid Solutions, Georgia, USA, Dr. Ganesh Sankaranarayanan, Director AIMS lab, Co-Director of the Centre for Assessment of Surgically Proficiency, The University of Texas Southwestern Medical Center at Dallas, USA, Dr. S. K. Ramesh, Director, AIMS 2 Program, Professor of Electrical and Computer Engineering, California State University, Northridge, USA, Dr. Suresh Sundaram, Department of Aerospace Engineering IISc, Bangalore, Dr. N. Kumarappan, Chair IEEE Madras Section, Professor - EEE Annamalai University, Mr. K. Mukund, Vice president Tech Mahindra Bangalore and Mr. Ravikiran Annaswamy CEO, Co-founder, Numocity Technologies, Bangalore over the two days to share their insights and experience to the young generation. Without confining with the technical session, the entire committee also took initiatives for a cultural event bringing the feel of color and art into the conference virtually.

The inauguration ceremony in the presence of dignitaries, professional experts, IEEE Leaders, Renowned Speakers, Young Professionals, Women in Engineering, and delegates joining over video conference from different locations embarked the beginning of the influencing technical event along with the honoring of various Chairperson of Madras section from the past. The chief guest for the session was Dr. Panchantham Natarajan, Vice-Chancellor at Tamil Nadu Teachers Education University who passed on his best wishes to the team. The inspiring presidential address was delivered by Mr. Deepak Mathur, Director of IEEE R10 and the guest of honor was Dr. Suresh Nair, Chairman IEEE India Council who passed on his support to the team connecting virtually. Not confined to this, MASCON 21 also feathered Young Professionals meet up, displaying Indian attire, upskilling YP knowledge to all and a stall for IEEE Inspire priming the objective of the initiative. The event received positive feedback from people across the globe as well as the dignitaries and delegates who took part. The first edition of the hybrid conference came to an end with ecstatic, cherishable moments at the closing ceremony with the dignitaries over the virtual call. The Best papers awards were awarded to the most competent technical paper among the 5 tracks. Dynamic Volunteers and crew were recognized with the token of appreciation and MASCON 2021 was signed off with more expectation and eagerness towards the next edition.

2021 IEEE MINI POCO (Panel of Conference Organizers)

The highly expected and promised event IEEE R10 POCO commenced rhapsodically on September 25, 2021, virtually. IEEE R10 POCO 2021 (Panel of Conference Organizers) was a 2 – day event from September 25, 2021, to September 26, 2021, sponsored by IEEE Madras Section and IEEE Region 10. IEEE Madras Section hosted IEEE R10 POCO and welcomed 215 attendees from different spheres including IEEE members, Non – IEEE members, Members of professional organizations, researchers, faculties from numerous Engineering and Technology institutions across the state. IEEE R10 POCO invited unique proficient IEEE leaders making the event even more unique and unparalleled. The attendees were cordially welcomed by Dr. N. Kumarappan, Chairperson of IEEE Madras Section. Following up, Dr. R. Valli, Student Branch Counsellor of Manakula Vinayagar Institute of Technology, Pondicherry gave meticulous inputs about the event. The inaugural address was delivered by the chief guest of the day, Dr. Debabrata Das, Chair (Elect), India Council, Director, IIIT Bangalore. Posterior we had a special address set forth by the event’s Guest of Honour, Dr. Michael Ong, Chair, R10 Conference Quality Management Committee. Taking the inspired attendees forward was Dr. T. Thiyagarajan, Dean - MIT Campus, Anna University.

Dr. T Thiyagarajan gave an exclusive talk on Key Challenges in Organizing IEEE Conferences emphasizing the key points inclusive of the needs for conference event planning, timeline management, implementation and execution, and the importance of teamwork for a successful conference with high quality. Up next was a paramount session presented by Dr. Joseph Gladwin, Treasurer of IEEE Madras Section on TCS Fee Payment & Conference Approval. In this talk, Dr. Joseph Gladwin highlighted the pre-eminent points such as how IEEE Madras Section requires the desirous organizations to follow its guidelines to obtain technical sponsorship. Also detailing the steps involved in the TCS Fee Payment & Conference Approval process makes the session spellbinding. Keeping the attendees engaging again was Dr. N. Kumarappan chairman of the IEEE Madras Section where he got all the attendees transfixed in his talk. Dr. N. Kumarappan gave an insightful talk on Publication in IEEE Conferences & Journals where he mentioned the quality aspects such as checking plagiarism through legal software, number of reviewers, and the quality of publication with some best points for selecting the technical article, preparing material, presenting the papers with the participants. With this Day 1 of IEEE R10 POCO came to end making the attendees anticipated for September 26, 2021, 2 PM IST.

Day 2 of IEEE R10 POCO brought back the zest with the informative session of Dr. Michael Ong, Chair, R10 Conference and Technical Seminar Committee where he delivered a session on IEEE Conference Quality, spotlighting the goals and objectives of a conference and IEEE Conference quality guidelines. Posterior we had Dr. S. N. Singh, Professor (HAG) at the Department of Electrical Engineering at Indian Institute of Technology, Kanpur delivering a detailed talk on IEEE Conference Proposal Submission & Approval Process where a live demonstration for filling the conference application was shown. Adding more particulars and enlightening the attendees was a fresh Panel Discussion on How to Organize the Conference Effectively. The panelist was, • Dr. N. Kumarappan, Chair, IEEE Madras Section • Dr. Thangaprakash Sengodan, ExCom Member, IEEE Madras Section • Dr. D. Nirmal, ExCom Member, IEEE Madras Section • Dr. R. Valli, SB Counsellor, Manakula Vinayagar Institute of Technology Student Branch, And moderating this powerful discussion was Mr. Ashvanth B, Treasurer of IEEE Madras Young Professionals. Following this Day 2 of 2021 IEEE R10 POCO came to an end with the valuable feedback session and a gratified thank you note. On the whole, IEEE R10 POCO set an exemplar platform to acquire knowledge, network, and exchange ideas among them.

➤ Project Vidhya - Inspire India

This program was organized in collaboration with IEEE Madras Section IEEE INSPIRE INDIA, IEEE Try Engineering & IEEE MADRAS YP and was funded by the IEEE Pre-University STEM Portal Grant program. The initial process of the event began around the month of August with the main objective to serve as the strong base for the students to understand the importance of STEM, the need for it in this contemporary world with the rise of new technologies emerging every day and to interact with professionals from the STEM. We witnessed 100+ students from CMS Villivakkam, CMS M H Road, CMS Krishnampet, CMS Madhumanagar Sri SB Vijaya Reddiar Matriculation Higher Secondary School, Avadi and CMS, Aminjikarai this initiative.

Around 25 Student Volunteers along with the TFI fellow members volunteered to stir the curiosity and to strengthen the creativity, collaboration, and critical thinking skills of the kids. As a result, we witnessed the young buddies building application-oriented projects such as traffic light circuits, cycle horns, combined fan and light models, and water level indicators with simple circuits. Few of the inquisitive minds took their innovative thinking to the next stage by presenting projects on Earthquake detectors, drones, helicopters, and projects with recycling products and basic circuits. The PROJECT VIDHYA was indeed a very successful event. As we witnessed the success of the event, we received positive feedback from Parents, Volunteers, and many professionals about the success of the event.

R10 IEEE Madras Section Membership Development Committee

Two-day Virtual Event “IEEE – A Platform for Professional Enhancement, Industry Trend Professional and Successful Technologist” Jointly funded by R10 MDC Project 4 – 2021 and IEEE Madras Section Membership Development Committee Organized a Two Virtual Event on 22nd August and 23rd August 2021. Day 1 Started with TamilThai Vazhthu followed by Our Dignitaries Lightening the Kuthuvilakku Via Virtually. Welcome Address and Opening Remarks were given by Dr. R. Hariprakash, Project Leader, R10 MDC Project 4 – 2021.

Then Inaugural Address was given by Mr. Deepak Mathur, IEEE R10 Director, He shared his Valuable Thoughts about IEEE to All Participants and Keynote Address was given by Dr. Kumarappan, Chair IEEE Madras Section. He spoke on IEEE and Its Benefits, & also more information about IEEE Madras Section. Dr. R. Hariprakash Launched the IEEE MAS Mentor (Academic/Industry) Database for the student branches involving Young Professionals Virtually in Presence of Mr. Deepak Mathur, and Dr. Kumarappan to all Participants.

Major Chapter Activities

• Chapter Activities

Sl.No.	Society Name	No. of Meetings Conducted
1	Aerospace and Electronic Systems (AES)	4
2	Antennas and Propagation (APS)	4
3	Broadcast Society (BS)	
4	Computer Society (CS)	
5	Communications (COMSOC)	3
6	Computational Intelligence (CIS)	8
7	Control Systems (CSS)	17
8	Engineering in Medicine & Biology (EMBS)	
9	Electron Devices (EDS)	
10	Education (ES)	5
11	Electromagnetic Compatibility (EMCS)	
12	Geoscience and Remote Sensing (GRSS)	
13	Industrial Applications (IAS)	4
14	Information Theory (ITS)	
15	Instrumentation and Measurement (IMS)	
16	Industrial Electronics (IES)	
17	Microwave Theory and Techniques (MTTS)	
18	Nano Technology Council (NTC)	
19	Power and Energy (PES)	9
20	Power Electronics (PELS)	
21	Product Safety Engineering (PSES)	3
22	Professional Communication (PCS)	
23	Photonics (PS)	13
24	Robotics and Automation (RAS)	15
25	Social Implications of Technology (SITS)	
26	Signal Processing (SP)	
27.	Technology and Management (TEMS)	2
28.	Oceanic Engineering (OES)	

❖ Major Student and Affinity Group Activities



Major Student Activity:

- MAS-E-TECH Symposium 2021
- Post Graduate Student and Doctoral Scholar Project Funding 2021 - PGDSPF
- Student Branch officer meet
- IEEE R10 SAC Student Branch Membership Development, and Leadership Training (SBMDLT)

- Technical Lectures different regions of section: In order to have more student-centric participation, technical lectures were conducted in different cities by the section, technical and student activities committee.
- Three Student Training Program
- Graduate Student Project Funding

✓ **Major Affinity Group Activities:**

- **Report On Returning Mothers Conference 2021:**

Retaining women in the workforce remains a big challenge in India, and indeed, around the world. Returning Mothers is a concept to support women who are on a career break to return to the workforce. With a motto to help women scientists and engineers who want to come back to professional life, the conference deliberates on providing an interface with the industry that is willing to hire women and join or rejoin the national/international workforce. The conference aims at providing a highly interactive platform to foster interaction, innovation, and collaboration for empowering, engaging, and developing the innovative mindset of the select gathering. In 2021, the conference was organized by Ramalatha Marimuthu, Secretary, IEEE Computer Society, Dr. N.Nithyavathy, Chair, WIE IEEE Madras in collaboration with IEEE India Council WIE and other Section WIE Affinity Groups in India on **29th and 30th of August 2021** with the support of IEEE Computer Society and the World Bank Group on Energy and Extractives. The theme was “**Be the Change you want to see in the World**” Diversity and Inclusion. The two days of the conference consisted of 3 Tracks:

1. Innovation and Entrepreneurship provide an opportunity to returning mothers to work on any possible business idea from Ideation to Market

2. Inspire and Engage highlights the importance of upskilling oneself on the journey of returning to careers based on the market requirement so that mapping jobs with the skills can be done.

3. Novelty and Invention is the key element needed to maintain a competitive edge in the market. It is an intangible asset that businesses can convert into usable resources to generate a competitive advantage.

To get the conference off to a good start, a distinguished panel discussion on the theme of diversity and inclusion as a way of life in the workplace was held. **Dr. Mini Ulanat** moderated the session, with **Prof. Leila De Floriani** from IEEE Computer Society, **Jenifer Castillo** from IEEE Women in Engineering, **Dr. Anne Kuriakose** from the World Bank, **Joanne Wong** from IEEE Entrepreneurship Committee, and **Dr. Maria-Alexandra Paun**, from Region 8 Women in Engineering as panelists in every term, a truly diverse panel. The event had around **50 speakers, 456 participants from 47 countries, and 35 juries**, evaluators, and mentors with more than 150 volunteers from all over the world.

A post-conference course is being offered by one of the partners “**THE LIGHTHOUSE**” for 40 scholarship winners – a two-month intensive course on personal branding through storytelling. The course was started during the first week of October and will end in November 2021. The virtual event was hosted on the Run The World platform, a platform with enhanced virtual networking features which was appreciated by all concerned. The participants gave glowing feedback during the closing ceremony adorned by the presence of **Susan Kathy Land**, the President, and CEO, **Deepak Mathur**, the Region 10 Director, and other dignitaries from partners organizations.

- **YESIST12: AGE OF INNOVATION 2021:**

IEEE YESIST'12 2021 (YOUTH ENDEAVOURS FOR SOCIAL INNOVATION USING SUSTAINABLE TECHNOLOGY)(SS12) is an international flagship event jointly organized by the WIE IEEE Madras section, Madras IEEE Education Society Chapter, Madras IEEE SSIT, and Madras IEEE YP, Universities and leading technology industry companies. The challenge is conducted to recognize the best social innovation application on the theme given as per the guidelines of United Nations Sustainable Development Goals. The ultimate aim is to bring about the development and advancement of the community. The event holds its fame in recognizing talented students and exhibiting their works in front of global leaders of multiple disciplines. General Chair Dr. Ramalatha Marimuthu Secretary, IEEE Computer

Society; Secretary Ketha Nikitha Deloitte India and Dr.Aishwarya Bandla Chair WIE Singapore section; Dr.N.Nithyavathy Chair WIE MAS on Publicity committee.

An exclusive Steering committee consisting of nearly 25 members was set up. The team formulated new strategies and activities for the successful completion of the event along with guidance and support from a panel of advisors from various regions. Two Co-chairs and an advisor per track were assigned to assist the members in performing their respective activities. The event involved nearly over 120 dedicated Student volunteers and IEEE members from various sections. Owing to the global pandemic, this year the competition was entirely held virtually using the WebEx platform, and finals were held on the 18th and 20th of September 2021. The final pitching round led to the selection of **6 winners, 8 runners-up, and 6 honorable mentions** from 5 tracks. The competition consisted of the below-mentioned Tracks this year: Innovation Challenge Track; Maker Fair Track; WePOWER Track; Junior Einstein Track; Special Track.

➤ **HighPreneur – IEEE Entrepreneurship Kickstart Program**

The highly anticipated event, HighPreneur, embarked proficiently in virtual mode from May 13th to 16th 2021, sharply from 6 PM to 8 PM every day. HighPreneur - IEEE Entrepreneurship Kickstart Program was a 4 – Day event 6 – Module workshop that paved the path for young, energetic minds to spark with revolutionary thoughts and let our youth explore the vibrant path of entrepreneurship. The program commenced with the Inaugural ceremony alongside many eminent persons including, Dr. N. Kumarappan, Chair, IEEE Madras Section, Dr. N. Nithyavathy, Chair, IEEE Madras WIE, Dr. G. Kulanthaivel, Chair, IEEE Madras TEMS Chapter, Dr. Darwin Jose Raju, Chair, IEEE Madras Education Activity Society, Mr. Navaneethakrishnan, Chair, IEEE MAS SSIT Chapter, Mr. M. Arun, Vice-Chair, IEEE Madras Young Professionals, Mr. Elanchezhiyan Ragavan, Founder, SocialZog, Mr. Jack Anto, Founder, Founder, Madrasters and Head of Design & Frontend, M2P. The delegates were all convivially welcomed by Mr. B. Ashvanth, Treasurer, IEEE Madras Young Professionals.

Dr. N. Kumarappan, Chair, IEEE Madras section, conveyed the inaugural address and officially let the HighPreneur program open. Posterior, Mr. M. Arun, Vice-Chair of IEEE Madras Young Professionals, gave a straight talk on the benefits for Graduate Student members making all familiar with the gateways, opportunism available for them. In the Inaugural, HighPreneur had an inspiring guest speaker, Mr. Jack Anto, Founder, Madrasters and Head of Design & Frontend, M2P with an insightful talk on Understanding Digital Design and Opportunities. Mr. Jack Anto gave an all-inclusive detailed explanation about Digital Design from scratch making sure all the attendees got a clear picture of the topic. Day 1 of 4, 6 – Module workshop, HighPreneur began magnificently with a welcome note from the student moderator. Guiding the participants was an august person, Mr Elanchezhiyan Ragavan, Founder of Social Zog. The session was narrow-scoped to “How to Build a Startup, how to look at the problems and opportunities, choosing a right idea” focusing on the start-up idea with a real-time problem. Mr. Elanchezhiyan spell bounded the participants with the Business model and a few points on marketing on Day – 2. The training partner gave inputs of top business ideas, business model canvas, types of digital marketing, and a lot more in – detailed information about it. The Day 2 session gave a different and detailed perspective to the delegates about the field. Student Moderator and the team warmly welcomed the participants to the Day – 3 session of HighPreneur.

The day session gave deep knowledge on marketing and sales, some of whichsoever were, hacks for marketing, how do I sell. For the participants to develop their own venture a basic outline of the marketing techniques and doubt clarification regarding it were provided. Day – 4 session was exclusively on funding and people, where Mr. Elanchezhiyan elaborated on angel investors, equity, people, and much more inclusive of funding and people. With this, 4 – day workshop was full-fledged. The participants showed great enthusiasm throughout the workshop eagerly seeking answers to their questions and were very keen to learn and grow and make their dream business into reality. On the closing day, joining the delegates, participants and the HighPreneur team was Ms. Radha Rengachari, Founder and CEO of Spikra, Zoho Partner. Ms. Radha shared her amazing journey with the attendees leaving many inspired. Then, the HighPreneur team felicitated their sponsors with mementos and expressed their heartfelt gratitude to all making HighPreneur fruitful. Such a noteworthy program came to an end with the thanking note by Mr. M. Arun, Vice-Chair, IEEE Madras Young Professionals. The event is sponsored and supported by IEEE R10, IEEE R10 Young Professionals, IEEE Madras Young Professionals, IEEE Madras SAC, IEEE Madras Women In Engineering, IEEE Madras Education Society, IEEE Madras SSIT Chapter, IEEE Madras TEMS Chapter.

The chief guest of the event is Dr. N Kumarappan, Chair, IEEE Madras Section gave a note to the delegates on young professionals and their efforts in making the student community flourish in all feasible aspects, and the event is solely made to enhance the skills of the participants. Mr Abdul Halik M L, Execom Member, IEEE Madras Young Professionals briefed about the roles of young professionals. A vote of thanks was given by Ms. Pooja Sharma K, Secretary, IEEE MAS WIE AG.

In Panel Discussion, everyone interacted with the Young Professionals of the Madras Section and They cleared the Doubts of soon-to-be young professionals with clear explanations. They asked a lot of new questions regarding Volunteering, IEEE Passion into the profession, how to manage time with volunteering being a student member, for these questions, All Young Professionals answered in a precise and elaborate manner so participants got inspired and Motivated. This session was moderated by Ms. Bharathi Ramesh with Mr. Arun, Ms. Pooja Sharma, Mr. Ashvanth, and Mr. Vinoth in the panel.

A Noteworthy Program came to an end and participants shared their Heartily feedback of the program. At last, the event ended with a wonderful Thanking Note from the MCs. At outset, the event created an impact among the participants about personal branding and opened ways about the opportunities in Young Professionals.

✓ Awards:

- **Motivational Award**

During Annual Meet (AM), every year, Cash awards and appreciation certificates are awarded to the active and dynamic student branches based on the performance of the student chapters and society units. The Student Branches having a maximum number of members are also honored during the AM. During the last year, appreciation certificates were given to the top 3 best performing Student Branches and societies chapters of the section. These awards were distributed during the Annual Meetings, to motivate the student branches to perform better. It resulted in the enhancement of the higher-level performance of the student branches.

The following awards were given to Student Branches to Motivate the Members:

- Student Branches conducting more number activities
- The Student Branch having a maximum number of members, an award given to top three colleges

A.2 Financial Report –

Summary (submitted on Next gen.):

Any other financial activities

- Section rebate for the student branches
- Financial support for the student branches
- Project funding for students
- Financial support for student training program
- Incentive awards to student branches and society chapters
- Funding given to organizing Faculty Development Programs
- Funding given to conduct Technical Lectures
- Sponsorship of Rs. 15,000 given to AISYWC 2021, Cochin
- Sponsorship of Rs 5000 for collaborative events

PART B - ORGANIZATIONAL ACTIVITIES

B.1 Membership Development Activities

Total number of active members in the past 3 years

The details of Membership as of 31st Dec 2019, 2020, and 2021 are given below:

	<u>31st Dec 2019</u>	<u>31st Dec 2020</u>	<u>31st Dec 2021</u>
Life Fellow	1	1	1
Fellow	4	4	4
Life Senior	16	20	22
Senior Members	346	381	440
Life Members	8	9	10
Members	1914	1748	2266
Affiliate Members	16	19	16
Associate Members	43	25	54
Graduate Student Members	582	530	540
Student Members	3965	3659	4754
Total Membership	6895	6396	8104

B.2 Chapter Activities

Total number of Chapters in the Section: 28
 Number of Chapters formed in the current year: 1
 Number of active Chapters: - 12

Summary of Chapter activities (Chapter wise with attachment table/information)

Aerospace and Electronic Systems Society

Sl. No.	Event Date/s	Topic	Resource Persons
1	15.06.2021	Privacy and Security Challenges in IoT	Dr. Kumar Abhishek
2	14.06.2021	Methods to develop creativity and innovation skills	MR.S.Jaisankar

Antennas and Propagation Society

Sl. No.	Event Date/s	Topic	Resource Persons
1	26.03.2021	National Workshop on “Antennas and Wave Propagation”	1) Dr. S. Raghavan, Professor (HAG), .2) Dr. T. Shanmuganatham,
2	20 – 25.09.2021	One Week Faculty Development Programme on “Design Requirements and Challenges of Antennas”	1) Dr. S. Raghavan, Professor (HAG), 2) Dr.T. Shanmuganatham, 3) Er.S. Purushothaman 4) Dr. K.T. Selvan, Professor 5) Dr.S.S. Karthikeyan, 6) Er. Shastikumar
3	21.10.2021	Distinguished Lecture on “Engineering the Future in the Post COVID Era”	Prof. S.K. Ramesh, Professor & Director, California State University, Northridge, USA
4	30.10.2021	One Day Webinar on “Massive NMIMO Antenna for 5G Wireless Communication System”	Dr.R.Ramesh

Computational Intelligence (CIS)

Sl. No	Event Date/s	Topic	Resource Persons
1	24.05.2021	International Conference on Computer Communication & Signal Processing	Multiple
2	23.07.2021	International Workshop on Natural Inspired Computing Applied to Engineering	Multiple people from different countries
3	25.07.2021	Webinar on Intelligence unit commitment with a vehicle to grid using hybrid optimization technique	Dr. N. Kumarappan
4	28.07.2021 - 1.08.2021	IEEE MAS SB – LEADD (Student Branch Leadership Enhancement & Development Drive 2021)	Multiple
5	09.09.2021	Technical talk on Intelligence unit commitment with a vehicle to grid using hybrid optimization technique	Dr. N. Kumarappan
6	10.10.2021	IEEE Madras Upskill 2021	Multiple
7	13.10.2021	Pep talk on Awareness and Opportunities in CIS for Young Aspirants	Dr. N. Kumarappan
8	28.10.2021	Student training program on Computation Intelligence in Engineering	Multiple

Control Systems

Sl. No.	Event Date/s	Topic	Resource Persons
1	5.8.2021	Inauguration of Control Systems Society and Technical Talk on Neural Network Technology	Dr.N.S.Bhuvaneswari, M.S, Ph.D.
2	7.8.2021	Panel Discussion on NEXT-GEN TECHNOLOGY for school students	1. Dr. K. Porkumaran, 2. Dr. L. Arunachalam, 3. Ms. V, Annapurani, 4. Mr. Vishnuvardhan, 5. Mr. Ismath Sha, 6. Ms. Aarthi L 7. Ms. Sreeranjani,
3	24.8.2021	Virtual Hands-on Session on R programming	Dr. C. Komathi
4	4.9.2021	Overseas Education and Career Opportunities for Masters Degree	1. Mr. L. Pradhosh, 2. Ms. K. Saidurga,
5	8.9.2021	Entrepreneurship and its future for Electronics and Instrumentation Engineers	Mr. Santhosh Balaji
6	18.9.2021	Virtual Hands-on Session on " Industry 4.0- A transformation towards Industrial Automation"	Mr. S. Ranganathan
7	25.9.2021	Virtual Hands-on Demo- "Innovative Projects- A Glimpse"	Best Project Team from passed out batch (2021)-EIE department
8	22.11.2021	Leveling the career for Instrumentation Engineers	Mr. J. Vishnuvardhan
9	1.06. 2021	Guest Lecture on “Trends in Industrial Automation”	Ms.NeethaRajasekaran,
10	18.06.2021	Workshop on “Machine Learning-Regression Analysis”	Dr. B. Senthil Kumar

11	19.06.2021	Workshop on “Analysis and Simulation of Control System using Matlab”	Dr. V. Vijayan
12	05.08.2021	Webinar on “Fundamentals of Computer Vision-Based Personal Authentication using OpenCV”	Mr.Varaprasad
13	18 to 20.08.2021	Gate Preparation series “Gate Control System Problem Solving Techniques”	Dr. V. Vijayan
14	26.08.2021	Technical Talk on “IOT based cloud computing using AWS”	Mr. J. Daniel Francis
15	27.08.2021	Guest Lecture on “Raspberry PI and IOT”	Mr. Ravivarman Rajendran
16	06.10.2021	Online Quiz Program on “Know Your Scientists”	Dr. V. Vijayan Mrs.M. Nivethitha Devi Ms.KirthiniGodweena
17	13.10.2021	Technical Competition on “Simple Electronic Circuit Design”	Dr. V. Vijayan Mrs. M. AngelinPonrani

Communication

Sl. No.	Date	Topic	Resource Person
1	9-11.8. 2021	Three Days Online Hands-on Workshop On LABVIEW for the Beginners	Prof R Anitha
2	2.8. 2021	Spacecraft: Configuration, Design, Assembly, Integration and Testing	Shri Puneet Kumar Mishra,
3	16-17.6.2021	Workshop on Routers and Switches	Dr. V Jayaprakasan, Dr. Vyomal Pandya

Education

Sl. No.	Event Date/s	Topic	Resource Persons
1	17-04-2021	Project Expo 2k21	Dr. T. D.Subash, Dr. S. S. Vinsley Er. J. G. Benny Jackson Er. A. S. Karthika, Er. Kavyashree Prakashan Er. C. Lincy Theresa
2	09-01-2021	Focus of the year- Administrative Meeting	Dr. Darwin Jose Raju,
3	10-10-2021	Upskill Madras 2021 - Stack Your Work	Dr. N Kumarappan,
4	13-05-2021	HighPreneur – IEEE Entrepreneurship Kickstart Program	Mr. Jack Anto,
5	14-04-2021	Critical Thinking Skills: Teach your students to think critically	Ms Leslie Martinich

Industrial Applications Society

Sl.no.	Date	Topic	Resource Person
1	18.01-2021	FICCI – Smart Summit 2021	Multiple
2	06-05-2021	Impulse-21	Multiple
3	11-05-2021	National Technology Day	Multiple

4	08-06-2021	Smart Meter Summit	Multiple
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Photonics Society

S.No.	Date	Activity	Resource person
1	13.02.2021	Webinar on Optical Sensors and Applications	Dr.Preeta Sharan
2	13.03.2021	Can you Code It?	Dr.Sangeetha R.G.
3	17.04.2021	PROJECT EXPO 2k21	Dr. S. S. Vinsley,
4	21 – 22 .06.2021	FDP on Advances in Photonics and Fibre Optics Technologies	Dr.V.V.Ragavendra Sai Dr.Srijith K Dr.Shankar K Selvaraj Dr.Gopalakrishna Hedge Dr.T. Srinivasa
5	12.07.2021	Inauguration of Photonics Society with Building a Career In Photonics And Available Resources From Ieee And The Ieee Photonics Society	Dr. Naresh Chand

6	26 – 31 .07.2021-	FIVETHON Bootcamp	Dr. N.Kumarappan, Dr. C.R.Rene Robin,
7	23.08.2021	All About Robotics	Mr. Thiru Balaji,
8	25.08.2021	IEEE Membership Drive-2022	IEEE SB student members
9	03.09.2021	Awareness Program on IEEE, The World of Opportunities	Ms.Janani Ramachandran
10	27.09.2021	Artificial Intelligence in Electric Vehicles	Dr. M.Venkatesh Kumar
11	21.10.2021	Illuminating materials: The materials science of light-emitting diodes	Dr. Rachel A Oliver
12	15 -16.11.2021	Two Days National Workshop on Programming with Matlab	Dr. D.Sugmar, Associate
13	06 - 07. 12.2021	Two-Day Workshop on "Advancements in Optical Communication & Photonics Design Simulation" Using Optiwave Photonics Design & Simulation Tools	Mr.Amandeep

Product Safety Engineering Society

Sl. No.	Event Dates	Topic	Resource Persons
1.	05.11.2021	Guest lecture on “CISCO switch security best practices”	Dr. V.Jayaprakasan,
2	6.12.2021 - 11.12.2021	Faculty Development Program “Safety Emergency Measures and Practices”	1. Capt.Sarnbir Singh Sawhney, 2. Dr.M.R.Rashmi, Professor 3. R.Sundararajan 4. Dr.S.Muthubhaskaran, Assistant 5. Prof.R.Theertham 6. Prof. Bhoopathy Baskaran,
3.	22-12-2021	Guest lecture on “Electrical safety”	Prof. Mohanavel

Power and Energy Society

Sl. No.	Event Date	Activity & Topic	Resource Person
1	06.08.2021	Webinar on “V2G Technology and Market”	Mr. Ritesh Mohan Acharya,
2	22.10.2021-23.10.2021	Workshop on “Research and Development of Electrical Vehicle Technology”	1. Mrs. Latha Chembrakalam, 2. Dr. Sheldon Williamson, 3. Mr. Ananda Natarajan, 4. Dr. M. Venkateshkumar, 5. Dr. Cheng Chin, 6. Dr. Vishnu Suresh, 7. Dr. Naveenkumar, 8. Dr. S. A. Lakshmanan,
3	27.10.2021	Webinar on “Experience of Microgrid realization at Polytechnic of Bari”	Prof. Enrico De Tugile,
4	29.10.2021	Webinar on “Smart Transformer Applications in Power Distribution Systems”	Dr. Chandan Kumar,
5	16.11.2021	Webinar on “Microgrid Systems”	Prof. Arindam Ghosh,
6	08.12.2021	Workshop on “Solid-state Transformer”	Dr. V. Rajini,
7	18.12.2021	Webinar on “Condition Monitoring of Outdoor Polymeric Insulators Adopting LIBS Technique”	1. Sri. V.S. Nandakumar, 2. Dr. R. Sarathi, 3. Dr. N.J. Vasa,
8	20.12.2021-24.12.2021	FDP ON “Research Challenges in Electrical Engineering and the solution with Software”	1. Dr. M. Venkateshkumar, 2. Dr. Vinodkumar Yadav, 3. Mr. Davidson D, 4. Mr. Shajahan Yacob, 5. Mr. Janaki Ram Pandi, 6. Mr. T Jayanandhan,
9	23.12.2021	Webinar on “Role of Engineers in India’s commitments towards Conference of Parties 26”	1. Dr. K. Balaraman, 2. Er. S. Mahadevan, 3. Dr. Rahul Walawalkar,

Robotics, and Automation

Sl. No.	Event Date/s	Topic	Resource Persons
1.	23.1.2021	Graphical System Design Platform (LabView)	Dr. Varun
2.	19.3.2021	Industrial Robotics	Ms. Mangayarkarasi
3	13.5.2021	Internet of Things	Mr. P. Naveen
4	22.5.2021	Robot Operating System	Mr. Arun Balaji
5	28.7.2021	Opportunities for Higher Studies in Germany	Ashish of Kareerbanana
6	30.7.2021	Future of Marine Robotics: Technology and Opportunities, Developments in Marine Robotics	Mr. Satish Vijaya Rajan M
7	19.8.2021	MATLAB Programming for Robotics Applications	Dr. S. Kaushik
8	09.9.2021	Growing Opportunities for Instrumentation Engineers	G. Ramanathan
9	27.9.2021	Labview With My Rio Module	Multiple
10	6.10.2021	Introduction to IEEE	Dr. Azhagumurugan

11	19.10.2021	Oxygen concentrator, Ventilator, Defibrillator	Venkatraman of Biovision
12	28.10.2021	Pattern Recognition in Medical Electronics	Dr. R..Raja
13	30.10.2021	Introduction to Simulink	Ravindiran
14	2.12.2021	AI-Robotics for Industrial Revolutions	Balaji
15	24.12.2021	Arduino Programming For Robot Design	Arduino Programming

Technology and Engineering Management Society

Sl. No.	Event Date/s	Topic	Resource Persons
1.	23.9.2021	International Research Symposium on Innovative Research in Higher Education "IRSIRHE '21	Multiple
2.	06.2.2021	WORKSHOP ON SEQUEL APP	Dr. M.B. Patil

B.3 Professional and Continuing Education Activities

Summary of continuing Educational activities including conferences, technical activities, training courses, and distinguished lecture programs with attachment table/information

- IEEE Region 10 EAC sponsored “REACHING LOCAL INITIATIVE” PROGRAM:

IEEE Madras Section conducted the IEEE R10 sponsored “Reaching Local Initiative” program on the theme of “Leveraging AI and IoT Techniques for smart Farming” during July 9-11, 2021 through online. In the events of Day 1 & 2, 125 students from Agriculture colleges and officers from Agriculture Departments participated and in the Day 3 event 80 Farmers and the Common public participated. The program started with a welcome address by Dr.D.Devaraj Secretary, IEEE Madras Section. He highlighted the initiatives taken by IEEE Region 10 EAC to reach out to the local community. He also prompted the goal of the workshop to fulfill the IEEE 2020-2025 Strategic Plan – “Enhance public understanding of engineering and technology”, and “Be a trusted source of educational services and resources to support Life-Long Learning”. As part of this, the IEEE Madras Section has organized webinars and product demonstrations on “Leveraging AI and IoT Techniques for smart Farming” for the benefit of the farming community. The webinars have focused on Smart Farming, Application of Information Technology in Agriculture, Agricultural Apps, Role of Artificial Intelligence (AI) and Internet of Things (IoT) in Agriculture, etc.

The technical session started with Mr.Vasanthkumar, SRMIST, Chennai on the topic of “Sensor Technology and IoT in Modern Agriculture Practice”. He introduced various sensors most commonly used for smart agriculture, Robotics for large-scale farming and harvesting, drones for areal monitoring, remote sensing of field parameters, and low-cost IoT for smart farming. Technical session 2 was on “Imaging Techniques in Plant Disease Identification” by Dr. Abisha, RIT, Nagercoil. She briefed how to automatically detect and classify the diseases in the plants using image processing techniques. She also presented a case study on detecting diseases in Brinjal using Image processing techniques and a multi-class support vector machine.

The day 2 program started with a presentation on “Understanding AI and Machine Learning techniques” by Dr.D.Devaraj, Secretary, IEEE Madras Section He explained the basics of machine learning techniques and the application of machine learning in agriculture practices. Technical session 4 was on “Machine learning in farming applications – practical implementation” by Dr. J. Preetha Roselyn, Associate Professor, SRMIST, Kattankulathur. This was a practical implementation session in which the participants were explained how to use machine learning techniques for classification and regression problems using MATLAB software. The 5th session was handled by Mrs. Vaishnavi, Assistant Professor/CSE, SRMIST, Kattankulathur on the topic of “Futuristic agriculture: A smart look into Artificial Intelligence in Today’s Agriculture”. She has thrown some light on how artificial intelligence can be utilized for yield prediction, optimization of today’s agriculture. She has also briefed about how AI and automation are transforming agriculture and the advanced technologies adopted in Indian agriculture.

At the end of Day 2, a Quiz contest was conducted for the participants in which they participated very enthusiastically. The day 3 program was conducted in the Tamil language. In the first session, Mr. Sathishkumar, AP/Agri, KARE gave a presentation on “ICT in Agriculture”. He briefed about the various IT tools adopted in agriculture. He also demonstrated a number of useful Mobile Apps which can be used by the

farmers to increase their production. The last session was handled by Mrs. Vaishnavi, Assistant Professor/CSE, SRMIST, on “Smart farming: Empowering the future of agriculture”. She gave an introduction about smart farming and the role of IoT and AI tools in the modern Agriculture practice. She also presented a case study on Soil moisture estimation systems developed using Wireless sensor networks. The session was followed by the Q & A session in which the participants asked a range of questions to the Speakers and was answered by the speakers.

The valedictory ceremony started with the chief guest, Dr. D. Sivakumar, HOD, Agriculture department, KARE. The participants were provided sufficient time for providing feedback about all the technical sessions. The chief guest provided the valedictory address. Dr.D.Devaraj proposed the Vote of Thanks in which all the organizing team members, R10 educational activities team, resource persons, participants, and volunteers were thanked for their effort and time in making this event a grand success and the session ended with a photo session. The event enabled the students of Agriculture, officials from the Agriculture Department, and the farmers to understand the role of ICT tools, Mobile Apps, Sensors, IoT Technology, and Machine learning algorithms in modern Agriculture practice.

- Our section was involved in the organization of the following R-10 sponsored events:
 1. IEEE Region 10 EAC, online capacity building workshop on "Education 4.0 - Role of Educational Technologies" organized by Symbiosis Institute of Computer Studies and Research, IEEE Pune section, IEEE Delhi Section, IEEE Madras Section, and IEEE Nagpur Subsection during 15 July - 17 July 2021.
 2. IEEE R10 EA Funded Capacity Building Workshop on “Artificial Intelligent Techniques to Address Societal Challenges” organized by IEEE India Council in association with IEEE Madras Section, Pune section, Educational activities Society-Hyderabad section, and YP-Madras section during October 1-3, 2021.

Faculty Development Program (FDP)

Sl.No.	Date	Topic	Venue (online)	No. of participants
1.	March 24-27, 2021	Leveraging AI in Cyber-Physical Systems	Thiagarajar College of Engineering	62
2.	05th - 8th July 2021	Advanced Reactive Power Management of Power Networks	Dhanalakshmi Srinivasan Engineering College	82
3.	May 10-13, 2021	Practical Exposure on Fundamental Mathematics behind Machine Learning	SRM IST, Kattankulathur	120
4.	5-7 Aug 2021	IoT for Healthcare Applications	National Engineering College	42

Technical Activities

Sl.No.	Date	Topic	Speaker
1.	29 th Jan 2021	Technical Talk on Science Behind Engineering Materials	Dr. V. S. Srinivasan
2.	21st Apr 2021	Webinar on “Challenges in an Industry Innovations through Low Cost Automation	Mr. Rajesh Rajakumar
3.	24 th April 2021	Webinar on Current Trends of Artificial in Industrial Applications	Dr. C.L. Karppuswamy
4.	7 th May 2021	IEEE Student Membership Awareness and Benefits	Dr. N. Kumarappan
5.	13 th May 2021	Inaugural for Highpreneur	Multiple

6.	2 nd June 2021	Webinar on Building and Leading a Voluntary Organization	Mr. John
7.	12 th June 2021	Webinar on “Atomic Science”	Dr. Debasish Saha
8.	26 th June 2021	Webinar on MAS E TEC “How to prepare and present technical paper	Dr. N. Kumarappan
9.	28 th July 2021	SB LEADD – Student Branch Leadership Enhancement and Development Drive	Multiple
10.	27 th Sep – 7 th Oct 2021	webinar series “Know Your IEEE”	Multiple
11.	30 th Nov 2021	தமிழின் இனிமையும் வளமையும்	பி ஹெலன் வந்தனா
12.	5 th Dec 2021	கவிஞர் கண்ணதாசன் தமிழ் முடிக்கம்	கார்முகில் பழனிசாமி
13.	8 th Dec 2021	தரணி போற்றும் தமிழர் பண்பாடு	செல்வஸ்டன் பிரபு

Students Activities

Total number of Student Branches in the Section – 162

Number of Student Branches formed in the current year – 6

Section level student activities:

Student Training Program:

IEEE Madras Section conducted the Students Training Programme on “Machine Learning using Python” during December 3-5, 2021 through an online platform. In this event, 125 students from engineering colleges from various disciplines participated. The inaugural program started with a welcome address by Dr.D.Devaraj, Secretary, IEEE Madras Section. Mr. Praveen Kumar, Allianz Technology, Trivandrum was the Chief Guest of the program. In his address, Mr. Praveen Kumar highlighted the importance of machine learning in real-life environments and its relevance to social benefit. The technical session on Day 1, started with the presentation by Dr. P. Ganesh Kumar, Anna University, Coimbatore Campus on the topic of “Understanding Machine Learning Algorithms”. He clearly explained the basics of machine learning algorithms and the various machine learning algorithms. The technical session 2 was on “Python Basics” handled by Dr. K. Kartheeban, Kalasalingam Academy of Research and Education, Krishnankoil. He explained in detail python programming.

The day 2 program started with a presentation on “Problem Solving using Artificial Neural Networks” by Dr.D.Devaraj, Secretary, IEEE Madras Section. He explained the basics of machine learning techniques and the application of artificial neural networks with practical examples. The technical session on “Python Implementation of Machine Learning Models” was handled by Mrs. Jackulin Mahariba, SRMIST, Kattankulathur. In this session, participants were explained how to develop machine learning models in the Python platform. This session was followed by a case study competition by the IEEE volunteers. At the end of Day 2, a Quiz was conducted for the participants in which they participated very enthusiastically.

The day 3 program started with a presentation on “Deep Learning Networks & CNN Implementation using Python” by Dr. Premjith, Amrita University, Coimbatore. He briefed about the architecture of deep learning networks. The last session was handled by Mr. Roosefert Mohan, Nelcast, Chennai, on “AI & ML in Industry 4.0”. The session was followed by a Q&A session in which the participants asked questions to the speakers and the queries were well answered. Afterward, a valedictory function was conducted. The chief guest of the valedictory program was Dr. Joseph Gladwin, Treasurer, IEEE MAS. The winners of the case study competition and quiz programs were honored by the Chief Guest. During the feedback session, the participants expressed satisfaction that they have learned Python implementation through this event. Dr.D.Devaraj proposed the Vote of Thanks in which all the organizing team members, resource persons, participants, and volunteers were thanked for their effort and time in making this event a grand success and the session ended with a photo session

Number of active Student Branches – 82

Summary of Student Branch activities (Student Branch wise with attachment table/information)

Sl. No.	Student Branch Name	Number of events conducted
1.	Bannari Amman Institute of Technology	6
2.	B.S. Abdur Rahman Crescent Institute of Science and Technology	1
3.	CARE College of Engineering	4
4.	Dr. N. G. P. Institute of Technology	24
5.	Dr. Sivanthi Aditanar College of Engineering	20
6.	Francis Xavier Engineering College	9
7.	Gnanamani College of Technology	6
8.	Government College of Technology	6
9.	Hindusthan Institute of Technology	3
10.	IFET College of Engineering	5
11.	Jansons Institute of Technology	7
12.	JCT College of Engineering and Technology	11
13.	Jeppiaar Engineering college	46
14.	Jeppiaar Institute of Technology	86
15.	Kalasalingam Academy of Research and Education	5
16.	Karunya Institute of Technology and Sciences	1
17.	K.Ramakrishnan College of Technology	20
18.	K. Ramakrishnan College of Engineering	140
19.	K. S. Rangasamy College of Technology	10
20.	Kings College of Engineering	66
21.	Kongu Engineering College	26
22.	Kongunadu College of Engineering and Technology	9
23.	Knowledge Institute of Technology	24
24.	Mar Ephraem College of Engineering and Technology	5
25.	M.Kumarasamy College of Engineering	4
26.	Mount Zion College of Engineering and Technology	3

27	Narasu's Sarathy Institute of Technology	22
28	National Engineering College	4
29	NIT Puducherry	2
30	NIT-Tiruchirappalli	7
31	Panimalar Engineering College	12
32	Panimalar Institute of Technology	288
33	PPG Institute of Technology	4
34	PSG College of Technology	9
35	RVS Technical Campus	5
36	RVS College of Engineering & Technology	3
37	SA Engineering College	8
38	SCAD College of Engineering and Technology	4
39	SCAD Institute of Technology	4
40	Shree Venkateshwara Hi-Tech Engineering College	3
41	Sri Eshwar College of Engineering	19
42	Sri Krishna College of Engineering and Technology	19
43	Sri Ramakrishna Engineering College	1
44	Sri Sivasubramaniya Nadar College of Engineering,	50
45	Sri Sai Ram Engineering College	35
46	St. Josephs College of Engineering	92
47	St. Joseph Institute of Technology	1
48	St. Mother Theresa Engineering College	6
49	St.Xavier Catholic College of Engineering	7
50	Surya Engineering College	3
51	SRM TRP Engineering College	60
52	SRM Valliammai Engineering College	8
53	Thiagarajar College of Engineering	5
54	Vaigai College of Engineering	4
55	Vellore Institute of Technology	8
56	Vel Tech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology	4

57	Velalar College of Engineering and Technology	3
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B.5 Affinity Group Activities

Young Professional (YP)

Sl.no	Date	Topic	Resource Person
1.	13-16.5.2021	HighPreneur - IEEE Entrepreneurship Kickstart Program	Multiple
2.	June – Sep 2021	2021 IEEE Pre-University STEM Portal Grant Program	Multiple
3.	10.10.2021	IEEE R10 YP - UpSkill Madras 2021 - Stack Your Work	Multiple

➤ Women In Engineering (WIE)

Sl.no	Date	Topic	Resource Person
1.	08.3.2021	Awareness about Health Risk Assessment	Dr. Hemamalini
2.	3-11.4.2021	IEEE WIE Project-Based Learning School Camp	Multiple
3.	13-16.5.2021	HighPreneur - IEEE Entrepreneurship Kickstart Program	Multiple
4.	20.6.2021	Tamil Debate - பெண்களின் எதிர்காலத்தை தீர்மானிப்பவர்கள் பெற்றோர்களே!! சமூகமே !!	Multiple
5.	23 -28.8.2021	Technical Partnership from IEEE Madras Section for IEEE Epoxy Solar Camp 1.0	Multiple
6.	28.8.2021	IEEE WIE - Returning Mothers Conference 2021	Multiple
7.	27-28.8.2021	MASCON 2021	Multiple
8.	4-5.9.2021	Technical Support partner for Quarter Tech Talk Table - QTTT3	Multiple
9.	26.9.2021	"Get started to get the most of your IEEE Membership"	Ms. Pooja Sharma K
10.	08.10.2021	"Revolutionary Opportunities in Industries - Education 4.0"	Ms. Pooja Sharma K
11.	21-23 May 2021	Connecting the Dots"	Multiple

Life Member

- Few events have been conducted by life member affinity group
- Number of members: 11

B.6 Awards & Recognition Activities:

Award constituted by the section:

As a new initiative, various awards have been distributed to encourage the student branches & societies to conduct more activities, cash awards & certificates of appreciation are being distributed every year at the Annual Meet.

The selection of SBs for the awards is based on the parameters such as activities conducted, membership strength, reporting in the newsletter, website maintenance, society chapters in the SBs, awards, funding received, etc., Similarly, the Society Chapters and Affinity Groups are awarded based on their activity level, accounts submission, website maintenance, etc.

Awards will be given to different categories like Best Student Branch Counselor, Best Researcher, Best YP, Best WIE, Best Student Volunteer, Best Student Branch, Best Society Award, Life Time Achievement Award. 160 applications received

S.NO	Madras section Award 2021	Name
1	IEEE MAS BEST BRANCH COUNSELLOR-2021	Dr.M.P.CHITRA
2	IEEE MAS BEST YP AWARD-2021	VIGNESH M A
3	IEEE MAS BEST WIE VOLUNTEER AWARD-2021	BENISHA M
4	IEEE MAS BEST STUDENT VOLUNTEER AWARD-2021	MITHRESH G P
5	IEEE MAS BEST STUDENT BRANCH AWARD-2021	ARUN M
6	IEEE MAS BEST RESEARCHER AWARD -2021 (Age 40 and Below)	Dr. KUMAR PRASANNAJIT PRADHAN
7	IEEE MAS BEST RESEARCHER AWARD-2021 (above 40 and Below 50)	Dr.T.SHANMUGANANTHAM
8	IEEE MAS BEST RESEARCHER AWARD-2021 (above 50)	Dr.S.RADHA
9	IEEE MAS BEST SOCIETY CHAPTER OF THE YEAR-2021 AWARD	Dr. N. KUMARAPPAN

List of all Awards and Recognitions by the Section to SBs:

S.No	College Name
1	Panimalar Institute of Technology
2	St.Joseph's College of Engineering
3	K.Ramakrishnan College of Engineering Trichy
4	Jeppiaar Institute of Technology
5	SSN College of Engineering
6	KIOT
7	Kongu Engineering College
8	Bannariamman Institute of Technology
9	SRM Institute of Science and Technology
10	VelTech Rangarajan Dr.Sagunthala R&D Institute of Science and Technology
11	Sri Sairam Engineering College
12	SRM TRP Engineering College
13	Narasus Sarathy Institute of Technology Salem
14	Thygarajar College of Engineering
15	Sri Ramakrishna Engineering College Coimbatore
16	Sivanthiathithanar College of Engineering Trichendur
17	Jansons Institute of Technology
18	NIT Trichy
19	Kongunadu College of Engineering and Technology

20	RVS College of Engineering and Technology
21	JCT College of Engineering and Technology
22	M.Kumarasamy College of Engineering
23	RVS Technical Campus
24	Francis Xavier Engineering College
25	Vaigai College of Engineering
26	PPG Institute of Technology
27	Hindusthan Institue of Technology
28	Surya Engineering College
29	Jeppiaar Engineering College
30	Sri Krishna College of Engineering and Technology
31	SRM Valliammai Engineering College
32	K.S.Rangasamy College of Technology
33	SCAD College of Engineering & Technology
34	CARE College of Engineering
35	Shree Venkateshwara Hi-Tech Engineering college
36	Kings College of Engineering
37	National Engineering College
38	Meenakshi Sundarrajan Engineering College
39	Vellore Institute of Technology Chennai
40	Dr.M.G.R Educational and Research Institute
41	Sri Easwar College of Engineering
42	Sri Sairam Institute of Technology
43	Saveetha Engineering College
45	B.S.Abdur Rehman Cresent Institute of Science and Technology
46	Kumaraguru College og Technology
47	St.Xavier Catholic College of Engineering
48	Mt.Zion College of Engineering and Technology
49	Mylam Engineering college

List of all awards received by the societies:

Sl. No.	Society Name / AG
1	Antenna and Propagation Society
2	IEEE Robotics and automation
3	Photonics Society Madras Chapter
4	IEEE Technology and Engineering Management Society
5	Engineering in Medicine and Biology Society (EMBS)
6	Electron Devices Society
7	Power Electronics Society
8	IEEE Computational Intelligence Society
9	Education Society Chapter
10	Control Systems
11	IEEE Geoscience and Remote Sensing Society
12	Aerospace Electronics System
13	Women in Engineering
14	Young Professionals Affinity Group

Awards given to Student Branches having Large Membership by the section

Sl.No.	Student Branch Name	Total No. of members	Position
1.	Sri Sai Ram Engineering College	393	I
2.	St. Joseph's College of Engineering	233	II
3.	Vellore Institute of Technology - Chennai	223	III

Awards given to Student Branches for winning the Student Project funding: Ref. pg. 2

Publication Award:

43 Professional Members of Madras section who have published their IEEE Transactions for Journals were presented and appreciated with "Publication Award".

Awards received from R10:

Madras Section received \$2500 as R10 Incentive Grant for the year 2020-21 for the large section category

Award(s) received from IEEE HQ:

The Madras section has been awarded for Membership Retention Performance from the HQ.

Award(s) received from India Council:

Outstanding student volunteer award won by Indumathi G

Award(s) for Member and Geographic Activities (MGA)

IEEE Madras Section won the membership recruitment and retention Gold award

MGA YP achievement award won by Ms. Pooja Sharma and Mr. Ashvanth Babu

MGA Larry K Wilson Award won by Ms. M Ramanathan

The Darrel Chong student activity award:

Silver Category - Jeppiaar Engineering College

Bronze Category: Panimalar Institute of Technology

B. 7 Communication Activities (Newsletter, Home Page, E-mail, etc.)

Newsletter (name and number of issues in the year)

- Name: IEEE Mas-Link
- Number of issues in the year: 6 issues (Two months once)
- Web Link for Newsletter: <https://www.ieeemadras.org/news-letter-2/>
- Email ID: ieemaslink@gmail.com

Home Page of the Section (give the URL and how often it is updated)

- URL: <https://ieeemadras.org>

Other means of contacts with Section members including social media: - IEEE Madras Section office is in regular touch with all the members through the mail and by creating IDs for Members, Students, and other

Student Branches. - The IEEE Madras Section website has been upgraded. There are login credentials for different modules set up in this system.

B. 8 Industry Relations

Activities for/with industrial members

Sl. No	Date	Topic	Speaker
1.	21.04.2021	Challenges in an Industry – Innovations through Low-Cost Automation	Mr. Rajesh Rajakumar
2	13-16.5.2021	HighPreneur - IEEE Entrepreneurship Kickstart Program	Multiple
3	10.10.2021	IEEE R10 YP - UpSkill Madras 2021 - Stack Your Work	Multiple

B. 9 Humanitarian Technology Activities

Humanitarian Technology related activities supported by the Section including collaboration with other OUs. – Nil

SIGHT Activities:

- Five members from the section won HAC & SIGHT Call for COVID-19 Proposals
- IEEE Madras section and SIGHT sponsored technical solution for a Government school to fight against COVID 19.
- Fishery projects were managed and completed in Kanyakumari district, Tamilnadu

B. 10 Community Activities

IEEE Social activities (Family day, IEEE day, Engineers Week)

- IEEE day (Pls see pg no.2)

Community Service Activities:

IEEE WIE Project-Based Learning School Camp:

In order to provide knowledge of the importance of pre-university education in the school students from Grade 8th to 12th, IEEE Women in Engineering Project. Based Learning School Camp was organized from 3rd April 2021 to 11th April 2021 based on the theme of “Website development and deployment without coding” in the form of a project on different problem statements as an end product learning showcase using the Project-Based Learning Approach. The camp was organized from 3rd April to 11th April 2021. It included the inauguration ceremony, Session talks, hands-on sessions, followed by the presentation round and the closing ceremony. The event witnessed the participation of 130+ students from 8 countries including India, Pakistan, Sri Lanka, Afghanistan, Bangladesh, Peru, Tunisia, and Uruguay.

Madras Section Financed technical solution for a Government school to fight against COVID-19:

IEEE HAC funded project titled “Technology Solution for Government Schools to Fight against Covid 19” was implemented by the Kumaraguru College of Technology, Coimbatore and ERNET India, under MeitY, Government of India for three following schools. Under this project, the integrated solution to screen the temperature of the student through the automated thermal camera, the automated hand sanitizing to provide hygiene and to create the awareness to the students on Covid 19, as well as social distancing by the PA system, was implemented.

The project was inaugurated by Dr.C. Usharani, Joint Director, Department of Education, Government of Tamilnadu and it is handed over to the government schools by the Our honourable chairman Dr. N. Kumarappan, IEEE Madras section on 11.03.2021.

C.1 Special Event

Please briefly describe the importance of special events and the outcomes achieved:

Sl.No.	Date	Topic
1	04.07.2021	IEEE MAS E – tech symposium
2	25-26 Sep 2021	IEEE R10 POCO 2021
3	12 th Dec 2021	IEEE Student Branch Officers' Meet
4	24-25 Aug 2021	IEEE MASCON 2021

Outcomes:

- a) A networking opportunity to identify and contact others was given.
- b) A basement for future directions for the forum was constructed.
- c) Known about the funding for organizing activities.
- d) Updated about the funds available for student chapters.

Funding secured from the IEEE and external sources including sponsorships:

- Funding secured from IEEE - \$3932
- External sources including sponsorships – Nil

C.2 Relationship with National and International Societies and Non-Government Organizations (NGO)

Nature of relationship and details of any formal agreement signed:

- IEEE Madras Section works in close collaboration with other Professional Society Chapters in Chennai. World Telecommunication Day was organized by the IETE center, Chennai, and was co-sponsored by IEEE Madras Section.
- IEEE Madras Section also co-sponsored the programs organized by the Institution of Engineers (India), Chennai Centre.
- Rupees 5000 have been distributed to perform various collaborative events within and outside the section

Details of joint activities:

IEEE Madras Section, IEEE Computer Society, and Computer Society of India, which is a National Professional Society jointly, organize programs of common interest like Object Computing.

IEEE Region 10 EAC, online capacity building workshop on "Education 4.0 - Role of Educational Technologies" organized by Symbiosis Institute of Computer Studies and Research, IEEE Pune section, IEEE Delhi Section, IEEE Madras Section, and IEEE Nagpur Subsection during 15 July - 17 July 2021.

IEEE R10 EA Funded Capacity Building Workshop on “Artificial Intelligent Techniques to Address Societal Challenges” organized by IEEE India Council in association with IEEE Madras Section, Pune section, Educational activities Society-Hyderabad section, and YP-Madras section during October 1-3, 2021.

The benefit to IEEE members (for example discounts, access to technical information, etc.) - Nil

Benefit to Section (for example help in membership development, venue facilities, cost-saving, etc.) - Nil

C3. Collaboration with other IEEE Sections:

➤ Support extended to neighboring Sections:

Sponsored Rs.15000/- to organize AISYWL Congress 2021 organized by Kerala section.

➤ Joint activities with any other Section:

IEEE Region 10 EAC, online capacity building workshop on "Education 4.0 - Role of Educational Technologies" organized by Symbiosis Institute of Computer Studies and Research, IEEE Pune section, IEEE Delhi Section, IEEE Madras Section, and IEEE Nagpur Subsection during 15 July - 17 July 2021.

IEEE R10 EA Funded Capacity Building Workshop on “Artificial Intelligent Techniques to Address Societal Challenges” organized by IEEE India Council in association with IEEE Madras Section, Pune section, Educational activities Society-Hyderabad section, and YP-Madras section during October 1-3, 2021.

C.4 Support extended to Sub-sections & Society Chapters within the Section

Support extended for organizing technical, educational, and professional activities:

- Funds provided to society chapters & affinity groups
- Several collaborative events conducted within society chapters & affinity groups.
- During Annual Meet (AM), every year, cash awards and appreciation certificates are awarded to the active Society Chapter based on the activities conducted.
- In the last year, appreciation certificates were given to Societies Chapters of the section. These awards were distributed during the Annual Meeting, to motivate the Section societies to perform better. It resulted in the enhancement of Society Chapter performance.

Joint activities for membership development:

- Technical meetings were conducted by the membership development sub-committees to develop the membership. Membership Development committee IEEE Madras section and Jeppiaar Institute of Technology IEEE Student Branch organized “**Co-Ordination Contest**” on 05/06/2021 at 4-6 PM. The contest gave the opportunity to the student branches and societies to represent the Achievements, Membership development activities, Best Practices of their SB/IEEE Society with a single poster. There were 10 SBs that were shortlisted for the final presentation on 05/06/2021 at 4-6 PM. The representatives explained their posters in the presence of the Jury panel of Dr.R. Hariprakash, Vice-Chair- Academics, MD Committee Chair- IEEE MAS, and Dr.M.Venkatesan, Dr.R Venkatesan, Committee Member - IEEE MAS, Scientist G & Group Head Ocean Observation Systems, NIOT – Chennai. Based on the membership development activities and Presentation winners were selected and awarded with cash prizes and merit certificates.

Support extended for the formation of a Sub-section or transition of a Sub-section into a full Section: Nil

C.5 Best Practices of your Section (which you would like to share with other Sections for the benefit of members).

- The IEEE Madras section has taken a unique effort and conducted flagship international conference series IEEE Madras Section International Conference (MASCON) and also technically co-sponsored & organized 24 conferences.
- For students, engagement, and to progress their knowledge, UpSkill and MAS-E tech symposium was accomplished.
- Conducted student Training programs for students' community and enhanced the student membership of the section.
- Regular Faculty Development programs in different locations in the state to benefit a good number of faculty members.
- Funding for the student project proposals PGDSPF(Post Graduate & Doctoral Scholars)
- Initiated the Student project funding for undergraduate students.
- Technical Support and sponsorship by the section to the student branches for various technical programs like Conferences, Workshops, Seminars, Symposia, etc., for the improvement of Quality of the technical activity in the student branches.
- Community outreach program to mold better youth of the country.
- Technical Lecture series organized by the technical society chapters.
- Communication and personality development programs are organized by the section.
- Recognition & Awards during Annual Meet to active student chapter and technical societies.
- Award to the authors who have published papers in IEEE Journals.

C.6 Problems anticipated and suggestions for solutions, if any:

- Retention of Student members is one of the major issues faced by the section, in this year, this problem has raised a lot.
- Steps have been taken in the form of organizing webinars on IEEE Membership benefits and by enhancing the Student branches to conduct more technical events.
- During this pandemic period, number of events has been increased but major events are not able to perform in physical mode.

PART D - GOALS AND PLANS

D.1 Continuation of project/activity in progress and their implementation plans

1. The funding for the student project proposal is continuous every year in order to enhance the technical competencies of the students.
2. To conduct more membership development programs to improve student and professional memberships.
3. A Project exhibition contest is planned to identify creative and innovative proposals and implement of strategy for further improvement.
4. Planning to organize more Faculty Development Programs in order to increase the number of beneficiaries. This will improve the quality of teachers and improve the teaching-learning process as a whole.
5. More Student Training Programs based on the demand from members.

6. Organization of conference organizers workshop **to equip** the institution leadership to organize good clarity conference.
7. To conduct Industry related and Entrepreneurship programs.

D.2 Goals and Future Plans

1. To geographically spread the technical activity organized by the section, the society chapters, and affinity groups.
2. Plan to organize the Membership awareness programs in the connected places.
3. To make the activity more student-centric such that the future Engineers are more competent in all Endeavors.
4. To take the technical knowledge and state-of-the-art technology to the rural parts as well. To create awareness about Science and Technology at the school level.
5. To organize workshops on advanced health care for a better quality of life.
6. To increase the chapter membership and senior membership Programs
7. To coordinate with industries for a better student branches industry connect.
8. Organize industrial visits for IEEE student members.
9. Organizing webinars on emerging technologies.

D.3 Any innovative ideas to make IEEE more creative and value-added for sustaining the membership retention and recruitment goals.

- To conduct more membership awareness programs.
- Planning to circulate IEEE months newsletter to all the educational institutions who are not part of IEEE even if no IEEE Student Branch is functioning.
- Recognition of outstanding professionals and volunteers
- To conduct the Membership drive in industries.
- Student Branch Leadership Enhancement & Development Drive has been conducted to make inactive SBs into dynamic SB.

D.4 Business Plan for Sustainable Growth and Financial Stability. Nil.