

IEEE Kerala Section

ANNUAL REPORT

SECRETARY, IEEE KERALA SECTION, 2014

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Kerala Section Annual Report - 2014

PART A - SECTION SUMMARY

A.1 Executive Summary

Section Executive Committee Member List

Chair	Mr. Srinivasan R
Vice Chair	Mr. Unni Sankar
Secretary	Mr. Sabarinath Pillai
Treasurer	Dr. S.M. Sameer
Immediate Past Chair	Mr. Satish Babu
Immediate Past Secretary	Mr. K.B. Senthilkumar
Chair, Malabar Subsection	Dr. Abraham T Mathew
Secretary, Malabar subsection	Mr. Nandakumar R Nandanam
Chair, Kochi Subsection	Dr. Suresh Nair
Secretary, Kochi Subsection	Mr. Shahim Baker
Chair, CS chapter	Ms. Mini Ulanat
Vice Chair, CS chapter	Mr. Padmakumar G
Secretary, CS Chapter	Mr. Farish CV
Chair, IE, IA & PEL Chapter	Mr. A K Unnikrishnan
Secretary, IE, IA & PEL Chapter	Mr. Srikanth Vasudevan
Chair, Comsoc Chapter	Dr. B. S. Manoj
Vice Chair, Comsoc Chapter	Dr. Maneesha V. Ramesh
Secretary, Comsoc Chapter	Mr. Prem Krishnan
Chair, PES Chapter	Dr. Bijuna Kunju
Vice Chair, PES Chapter	Mr. Hareendralal AG
Secretary, PES Chapter	Mr. Syamkumar G
Chair, SSIT Chapter	Mr. Satish Babu
Chair, GOLD Affinity Group	Mr. Ajin Baby
Vice Chair, GOLD Affinity Group	Mr. Nitin Padmanabhan
Secretary GOLD Affinity Group	Mr. Bibin Parukoor Thomas
Chair, WIE Affinity Group	Ms. Sarada Jayakrishnan
Vice Chair, WIE Affinity Group	Ms. Mija S J
Secretary, WIE Affinity Group	Ms. Preethy V Warriar
Member, Awards Committee	Mr. Amarnath Raja
Member, Awards Committee	Mr. Sasi PM
Member, Awards Committee	Mr. Satish Babu
Chair, Student Activities	Prof. Muhammed Kasim S
V-SAC (Travancore)	Mr. Anilkumar C V
V-SAC (Kochi)	Mr. Paul Ansel V
V-SAC (Malabar)	Dr. Vinod P
MDC	Mr. Ranjit R Nair
Chair, Professional Activities	Mr. Pradeep Balachandran
Secretary, Professional Activities	Mr. Jithin Krishnan
IEEE and Society	Prof K.P. Mohandas
Inter Society Activities	Mr. J Muraleemohan Lal

Chair, Conference Activities Board	Mr. E E Rajakumar
Convener, CAB	Mr. K.B. Senthilkumar
Conference Publications Chair	Dr. K Suresh
Chair, Educational Activities	Dr. P S Chandramohan
Vice Chair, Educational Activities	Dr. Rajasree M S
Secretary, Educational Activities	Mr. Ravishankar A N
Publications	Mr. K Gopalan Nair
Industry Relations Coordination	Mr.Varghese Cherian
ECC	Mr. Vijay S Paul
Section Webmaster	Mr. Ajmal Salim
Student Representative	Mr. Kiran Rajmohan
SDLP Co-ordinator	Dr. Lillykutty Jacob
Chair, PIE	Mr. Philip John
Secretary, PIE	Mr. Aby Kurian
Chair, SIGHT	Mr. Jayakrishnan M C
Member At Large	Dr. D S Rane
Member At Large	Prof. Gomathy K Muraleedharan
Member At Large	Mr. N T Nair
Member At Large	Prof. V K Damodaran
Member At Large	Mr. S Gopakumar
Member At Large	Mr. Koruthu P Varghese
Member At Large	Mr. G.Vijaya Raghavan
Member At Large	Mr. N.A.P. Thampy
Member At Large	Mr. Sateesh Kumar K G

Section Highlights

- 12 years of WIE in Kerala
 - Kerala Section has had 12 years of WIE AG activities since 2002; a meeting of all previous, present and future Chairs' of the AG and a panel discussion on Women in Engineering was held on the sidelines of the Community Engagement Workshop on 26th September to brain storm on the WIE Mission 2020.
- IEEE Kerala working closer with Government of Kerala
 - IEEE Kerala Section now works closer with the governance of Kerala State by way of representations in Key technology decision making technical committees of the Government.
- MGA Positions, EAB, TAB, R10 & India Council Positions
 - **Mr. N.T. Nair** : Life Senior Member of IEEE has been nominated to the IEEE Life Members Committee
 - **Prof. V K Damodaran** : Life Senior Member and advisor to IEEE Kerala Section has been invited to be a member of IEEE EAB Committee on Global Accreditation Activities.
 - **Er. S Gopakumar** : To continue as Past Chair, MGA IT Coordination and Oversight Committee as an advisor to the 2015 team
 - **Mr. Amarnath Raja** : Continues as the member of IEEE Humanitarian Ad Hoc Committee for the fifth consecutive year

- **Dr. Sameer S M** : Has been appointed by the MGA as a **voting member to the TAB/PSPB Products and Services Committee.**
 - **Mr. Arjun R Pillai** : nominated as Member R7-10, MGA awards and recognition committee & as a Member, MGA member benefits portfolio advisory committee
 - **Mr. Vijay S Paul** : Member at Large, MGA ieee.tv advisory committee
 - **Mr. Ranjith R Nair** : Nominated as Young Professionals Coordinator of Region 10 and Member of MGA Young Professionals Committee
- IEEE Funded Projects – E-Scientia, ECFDP and more
 - IEEE Kerala Section has completed major IEEE funded projects. The 6th E-Scientia exhibit world-wide was installed in C-SiS Campus, Cochin University of Science and Technology. The Early Career Faculty Development Program had three series of 5 day training programs for young and incumbent faculties of Engineering Colleges.
 - New Chapters – RAS, APS, SPS, EMBS, CAS
 - Five new society chapters were initiated during 2014 to improve specific technical benefits to the sections members. Four society chapters Viz. Robotics and Automation Society, Antenna & Propagation Society, Signal Processing Society & Engineering in Medicine and Biology Society Chapter were approved in 2014. The Circuits and Society Chapter was approved during January 2015.
 - New Affinity Groups – LMAG, CN
 - Two new Affinity Groups, the Life Member Affinity Group and the IEEE USA Consultants Network Affinity Group were initiated in the Section. With this, Kerala Section has all four IEEE Affinity Groups.
 - International Conferences – GHTC-SAS and 8 technically cosponsored
 - Kerala Section regularly organizes highly appreciated conferences. During 2014, Kerala Section hosted the IEEE Global Humanitarian Technology Conference – South Asia Satellite along with IEEE Region 6.
 - The section technically co-sponsored and organized 8 conferences in association with various educational institutions in the section.
 - SIGHT projects
 - Kerala Section is very keen on Humanitarian Technology. The section SIGHT in association with Young Professionals and WIE organized a few programs like Community Engagement Workshop, Eyes Free Camp, Kunjipara tribal colony upliftment project and so on, details of which follow in this report.

Major Events (International, National)

- IEEE Global Humanitarian Technology Conference – South Asia Satellite 2014
 - Kerala section hosted and organized the South Asia Satellite conference of the IEEE Global Humanitarian Technology

Conference, Silicon Valley in association with IEEE Region 6. 2014 was the second edition of this conference.

- Distinguished Lecture Programs : The following DLPs were organized at various locations in Kerala for the benefit of members in the section
 - ‘Big Data Problems in Social Media Analytics’ by **Dr. R. Chandramouli**, Thomas Hattrick Chair Professor of Information Systems, Department of Electrical and Computer Engineering (ECE), Stevens Institute of Technology, NJ during 12 – 14 March
 - “Ultra Small Memory Module Design” by **Dr. R Jacob Baker**, Professor of Electrical and Computer Engineering at the University of Nevada, Las Vegas on 11th April
 - “Challenges and Issues in Smart Grid Initiatives” by **Prof. Dr. S N Singh**, IIT Kanpur on 17th November
 - “Improving the Quality of Life for Humanity via Humanitarian Robotics and Automation Technologies” , by **Dr. Raj Madhavan**, research scientist with the Institute for Systems Research, and a member of the Maryland Robotics Center at the University of Maryland, College Park on 20th December 2014
 - “Online Hate Challenge to Social Media” by Dr. Andre Oboler, CEO, Online Hate Prevention Institute, Australia at various locations in Kerala during 21st to 23rd December
- IEEE Day Celebrations
 - IEEE Kerala Section celebrated IEEE Day on 7 Oct 2014 with a brainstorming discussion on “Ways forward to build a better Technology and Innovation led business ecosystem in Kerala” involving captains of industry, academia, R&D houses, infrastructure and government. A report of the same was prepared and circulated among various stake holders for detailed deliberations and further decision making.
- International Symposium on Antenna & Propagation (APSYM)
 - The International Symposium on Antenna & Propagation (APSYM) was organized by the IEEE Kerala Antenna and Propagation Society Chapter with over 106 research papers presented and 15 invited talks from stalwarts in the Antenna and Propagation domain.

Major Chapter Activities

- PES Quiz
 - The Power and Energy Society Chapter organized a Power Quizzes for pre-university students and also for 1st year engineering students.
- Invited Lecturers
 - All society chapters organized invited lecturers at various locations in the section. Detailed reports follow.
- Women Techmakers
 - IEEE CS kerala section in association with Google Developers Group & Indian Institute of Management Kozhikode E-Cell hosted Women Techmakers: Kozhikode on March 15,2014. The event featured panel discussions with female technology leaders, tech talks, keynote sessions and provided networking opportunities.

This event geared towards increasing visibility, community and resources for technical women in our industry.

- Workshop on Big Data Analytics : Computer Society
 - The workshop included sessions on Clustered Architecture and MPP Database, Hadoop, SQL on Hadoop, No SQLs, Data Science, Current Trends in Big Data Analytics, Hadoop Implementation in Cloud based system and Impact of BigData on Society. The classes were mostly handled by Industrial Practitioners.
- International Conference on Data Science and Engineering (ICDSE 2014)
 - Seven keynote/plenary addresses including tutorial sessions led by pioneers in the field of Data Science and Big Data were organized by Computer Society Chapter. 43 participants presented their research findings.
- International Symposium on Antenna & Propagation (APSYM)
 - IEEE Kerala Antenna and Propagation Society Chapter organized the International Symposium on Antenna & Propagation (APSYM) with over 106 research papers presented and 15 invited talks from stalwarts in the Antenna and Propagation domain.

Major Student and Affinity Group Activities

- **Early Career Faculty Development Program** : Young Professionals
 - The event was organized for the early career academicians from engineering colleges of the state to boost their technological awareness and IEEE awareness. The Young Professionals AG with the help of IEEE Educational Activities Board had evolved a program for the Kerala specific needs, which could be useful for the rest of the developing countries as well.
- **Eyes free Science Camp for the Blind & Low Vision Students:** Young Professionals
 - A one day event that renewed confidence in the visually impaired students to pursue science and mathematics for higher studies.
- **All Kerala IEEE SIGHT Camp** : SIGHT, WIE and Young Professionals
 - IEEE Kerala section and IEEE Kerala Young Professional Special Interest Group for Humanitarian Technology (SIGHT) organized the All Kerala SIGHT Camp 2014. As part of humanitarian activity conducted worldwide by the SIGHT, this venture marks the beginning of SIGHT activities in Kerala. This event aimed at the enlightenment of the growing generation in tribal area, Kunjipara, Kerala. The students of each participating SIGHT group had a hands on experience to visit a tribal community and learn more about their lifestyle, customs and problems faced. This event was presented at the sections congress in Amsterdam and was highly appreciated.
- **Community Engagement Workshop on SIGHT, EPICS and TISP** : Young Professionals & WIE

- Community Engagement Workshop on SIGHT, EPICS and TISP was organized with support from IEEE SIGHT. The workshop shared the needs of the society where technology solutions are required to address humanitarian issues. Experts in the domain shared their experiences of solutions for demanding humanitarian issues. The workshop served as a platform for coveted speakers to address the “Engineers of Tomorrow” and introduce to them the areas where “Technology Demand” is required to solve humanitarian needs.
- **STEP (Student Transition Elevation Partnership) & TISP (Teacher In service Program) Boot Camp : Young Professionals & WIE**
 - IEEE STEP (Student Transition and Elevation Partnership program) on the 23rd of August aimed to convey the benefits of IEEE Young Professionals and thereby facilitate the easy transition of Student member to Young Professional. The participants included recent graduates, Graduate Student members & final year students along with a diverse attendee list of Industry Professionals, Entrepreneurs and Academicians.
- **WIE Summit : WIE AG**
 - The WIE Summit organized by WIE AG of Kerala was a three day event on three themes, **Women In Computing, Women In Technology & Women In Leadership** on 31st Oct – 2nd November.
- **Branch Councilors Congress : Student Activities**
 - The Student Activities Committee organized a Branch Councilors Congress at Hotel Abad Plaza in Cochin, the geographical center of Kerala Section with a workshop on Industry – Institute Interaction by experts from the Industry and a workshop on effective use of IEEE Xplore by Mr. Dhanu from GIEEE, Bangalore.

Awards

Kerala section has been appreciated and recognized on a global scale by awarding many of its volunteers for their efforts towards the vision and mission of IEEE.

- **Prof. V. K. Damodaran & Mr. Ranjit Nair** : Meritorious Achievement Award in Continuing Education
- **Ms. Sarada Jayakrishnan** : Winner of the R10 WIE Professional Volunteer Award
- **Mr. Bibin Parukoor Thomas & Mr. Jaison Abey Sabu**: team members of the 2014 IEEE Day team selected as recipient of 2014 MGA Achievement Award
- **Kerala Section WIE AG** : R10 WIE Section Affinity Group Award
- **Kerala PES** received the IEEE PES 2013 Chapter Membership Contest
- **College of Engineering, Chengannur Student Branch WIE Affinity Group** received an Honorable Mention in the 2013 WIE Student Branch Affinity Group of the Year Award.
- **Kerala SIGHT Group** was recognized as Notable SIGHT Group of 2014
- **IAS SBC Vimal Jyothi College of Engineering**, Chemperi , Kannur won the “ Out Standing New Student Branch Chapter Award 2014”
- **IAS SBC Amrita Vishwa Vidyapeetham**, bagged the 3rd prize for “IAS Most Happening Chapters Contest”

- **IEEE Student Branch, College of Engineering Trivandrum**, emerged as the 2nd Runner-up of the Region 10 Student Branch Website Contest
- Richard E Merwin Scholarship
 - **Athul Balan E. A** – Amrita Viswa Vidyapeedham, Kollam Student Branch
 - **Kevin Martin** – College of Engineering, Trivandrum Student Branch
 - **Pranav Raj** - College of Engineering, Trivandrum Student Branch
- Darrel Chong Award
 - IEEE Amrita SB won the Silver award for IEEE International Symposium on Education, Technology and Entrepreneurship (ISEE) 2014
- Outstanding Branch Councillor Award
 - Ms. Sunitha Beevi, TKMCE SB
- **Mr. Satish Babu** conferred with CSI Fellowship
- **Dr. Suresh Nair**, listed topper in the DST Lockheed Martin Innovation award

A.2 Financial Report

The summary of financial activities of the section as per submitted Netsuite reporting is as below.

IEEE
IEEE : Region 10 : Region 10 INR
Balance Sheet
End of FY 2014

Financial Row	Amount
Current Assets	
Bank	
70199 - Indian Overseas Bank KERALA	Rs.15,27,991.54
70200 - Custody Banking Section KERALA	Rs.245.54
72242 - KERALA Petty Cash	Rs.1,970.04
Total Bank	Rs.15,30,207.12
Accounts Receivable	
11900 - Accounts Receivable	Rs.3,43,450.00
Total Accounts Receivable	Rs.3,43,450.00
Total Current Assets	Rs.18,73,657.12
Current Liabilities	
Accounts Payable	
20105 - Accounts Payable	Rs.1,24,835.40
Total Accounts Payable	Rs.1,24,835.40
Total Liabilities	Rs.1,24,835.40
Current Assets Less Current Liabilities	Rs.17,48,821.72
Total Assets Less Current Liabilities	Rs.17,48,821.72
Long Term Liabilities	
74246 - Reserve Allocation Payable	Rs.1,17,372.87
Total Long Term Liabilities	Rs.1,17,372.87
Total Assets Less Total Liabilities	Rs.16,31,448.85
Capital and Reserves	
Retained Earnings	Rs.23,92,909.85
Net Income	-Rs.7,61,461.00
Total Capital and Reserves	Rs.16,31,448.85

PART B - ORGANIZATIONAL ACTIVITIES

B.1 Membership Development Activities

Total number of active members in the past 3 years.

Member Grade	2011	2012	2013	2014
Life Senior Members	8	8	10	10
Senior Members	57	60	74	84
Members	692	950	916	891
Associate Members	50	27	35	49
Affiliate Members	-	-	4	6
Graduate Student Members	467	427	477	664
Student Members	3903	4290	4092	3645
Total	5177	5762	5572	5349

As observed, there has been a slight decline in membership, especially in the student member group owing to fluctuating US\$. Professional membership remains more or less the same; the marginal decline may be attributed to the increase in Senior Membership.

Summary and evidence of work done to improve the value of membership, which leads to retention and growth of members

- **Increase in Society Chapters:** the section took initiative in increasing the society chapter thereby improving the technical benefits of members there by contributing to membership growth.
- EMBS chapter, a newly formed society chapter in the section, attracted Medical Professionals & Doctors to IEEE Memberships
- Membership Development Committee organized various awareness camps at R&D Organizations like ISRO, C-DAC and also Technopark.
- Membership Development stalls at all IEEE Kerala Section co-organized Events
- Improved Member benefits by arriving at MoUs with
 - M/S. Asianet Satellite Communications & M/S. Reliance Netconnect for special discounts in broadband connectivity
 - M/S. Oxygen Digital & M/S. Logtech for special discounts in Computer hardware and software purchases
 - M/S. Kerala State Tourism Development Corporation and M/S. Quilon Beach Hotels and Resorts ltd. For special discount at their chain of hotels and resorts across Kerala

B.2 Chapter Activities

Total number of Chapters in the Section :

Kerala Section has a total of ten Society Chapters, an increase of 5 Society Chapters as of 2013.

1. Power & Energy Society
2. Computer Society
3. IA/IE/PEL Joint Chapter
4. Communication Society

5. Society on Social Implications of Technology
6. Antenna & Propagation Society
7. Robotics and Automation Society
8. Signal Processing Society
9. Engineering in Medicine and Biology Society
10. Circuits and Systems Society

Number of Chapters formed in the current year

- Formed during 2014
 1. Antenna & Propagation Society
 2. Robotics and Automation Society
 3. Signal Processing Society
 4. Engineering in Medicine and Biology Society
- Formed during January 2015
 5. Circuits and Systems Society

Number of active Chapters

- All chapters have reported the required number of meetings during 2014.

Summary of Chapter activities

A list of activities organized by society chapters is listed here.

Power and Energy Society

- College Level Paper Presentation Contest on Role of Phasor Measurement Units in Power Systems
- Quiz Contest for 1st Year Engineering
- School level PES Quiz at Kollam
- Talk on “From Amber to Smart Grid A Glimpse into the History of Electricity”
- Talk on “Social Networking Sites : A glimpse”
- Seminar on Energy Conservation
- College Level Paper Presentation Contest on Role of Phasor Measurement Units in Power Systems
- Quiz Contest for 1st Year Engineering
- School level PES Quiz at Kollam
- Talk on “From Amber to Smart Grid A Glimpse into the History of Electricity”
- Talk on “Social Networking Sites : A glimpse”



IA/IE/PEL Joint Chapter

- 5 new IAS student branch chapters were formed in following colleges
 - College of Engg: Munnar
 - Vimal Jothi College, Chemperi, Kannur
 - MA College, Kothamangalam
 - MEA College Perinthalmanna
 - St. Joseph's College of Engineering and Technology Palai.
- Mr. Blake Lloyd, Director of Development, Iris Power, Canada, President IAS, delivered an invited talk on “Effects of Modern Variable Speed Drives on Motor Winding Insulation” at Amrita Vishwa Vidyapeetham, Kollam
- Mr. Unnikrishnan A K., Associate Director, CDAC- TVM, delivered a talk on “**Recent Trends in Power Electronics**” at College of Engg: Munnar
- “**Energy Awareness Campaign**” & “**Public awareness campaign**” in Kadampanad Panchayath of Pathanamthitta district
- IEEE IAS Vimal Jyothi Engineering College Student Branch Chapter (VJEC–SB) organized One day Technical Fest - “RAYO”



Computer Society

- Women Techmakers: Kozhikode
- Technical Talk on CYBER LAW AND IT ACT on 25 Mar,2014
- Technical Talk on Natural Language Processing – Challenges
- Three day Workshop on BIG DATA ANALYTICS
- Technical Talk on IPV6
- Research Conclave
- Technical talk on Monetizing Carrier Billing
- Session on “Enterprise Mobility – Device Management, Security & Apps”
- Developer Boot Camp at Govt. Engineering College, Wayanad
- International Conference on Data Science and Engineering (ICDSE 2014) held during 26-28 August 2014 hosted by the department of computer science, CUSAT ICDSE
- GDG DevFest Kozhikode
- Technical Talk Unifying an Organization's Business Solutions Through Innovation



Communication Society

- Talk on Big Data Problems in Social Media Analytics by **Dr. R. Chandramouli**, Thomas Hattrick Chair Professor of Information Systems, Department of Electrical and Computer Engineering (ECE), Stevens Institute of Technology, NJ
- Project Innovation Challenge and mentorship to 5 student projects
 - 1 project completed and in production in association with start-up village
- Created a Mentor directory of technical experts



Antenna & Propagation Society

- International Symposium on Antenna & Propagation (APSYM)
- Talk on “Maxwell’s Contribution in Electromagnetics” by Prof. Tapan K Sarkar, President, APS
- Talk on “Dispersion and its application to Electromagnetics” by Prof. Magdalena Salazar Palma, Former President IEEE APS
- Talk on “Electromagnetic Education and Challenges” by Dr. Goutam Chattopadhyaya, NASA-Jet Propulsion Laboratory, USA
- Talk on “RF Exposure and Health” by Prof. Vikas Monebhurrin, Vice-Chair, IEEE AP Standards Committee, France
- Talk on “RF/Microwave Engineering: An Industry Perspective” by Dr. K R Suresh Nair, CTO, NeST, Chair, Kochi Sub-section
- Workshop on Electromagnetics by Prof. Parveen Wahid, IEEE APS WIE Chair and Prof. Selvan K T, Chair, IEEE APS Madras Section

Engineering in Medicine and Biology Society Chapter

- HEATS – Hospital Equipment Awareness and Training Series for engineers in the clinical area
 - 3 workshops in Kerala
- Three Student Project contests with participants from all over Kerala

Robotics and Automation Society Chapter

- Tech Talk on Line Follower Robots by Mr Fijo Francis, NIELIT
- Talk on “Introduction to Mobile Robots” by Mr.Rejin Narayanan, Chair, IEEE RAS Chapter
- Talk on “Localization of Mobile Robots” by Mr.Rejin Narayanan, Chair, IEEE RAS Chapter
- Talk on “Improving the Quality of Life for Humanity via Humanitarian Robotics and Automation Technologies”, by Dr. Raj Madhavan, research scientist with the Institute for Systems Research, and a member of the Maryland Robotics Center at the University of Maryland, College Park



B.3 Professional and Continuing Education Activities

Summary of continuing Educational activities including conferences, technical activities, training courses, and distinguished lecture programs

Distinguished Lecture Programs

The Section in association with various society chapters organized five Distinguished Lecture Programs during 2014. A brief summary is given here.

- **‘Big Data Problems in Social Media Analytics’** by Dr. R. Chandramouli, Thomas Hattrick Chair Professor of Information Systems, Department of Electrical and Computer Engineering (ECE), Stevens Institute of Technology, NJ during 12 – 14 March
- **“Ultra Small Memory Module Design”** by Dr. R Jacob Baker, Professor of Electrical and Computer Engineering at the University of Nevada, Las Vegas on 11th April



- **“Online Hate Challenge to Social Media”** by Dr. Andre Oboler, CEO, Online Hate Prevention Institute, Australia
- **“Challenges and Issues in Smart Grid Initiatives”** by Prof. Dr. S N Singh, IIT Kanpur and Chair, IEEE UP Section
- **“Improving the Quality of Life for Humanity via Humanitarian Robotics and Automation Technologies”**, by **Dr. Raj Madhavan**, research scientist with the Institute for Systems Research, and a member of the Maryland Robotics Center at the University of Maryland, College Park

Technical Activities:

- **Early Career Faculty Development Program :**
 - The event was organized for the early career academicians from engineering colleges of the state to boost their technological awareness and IEEE awareness.
 - Detailed teaching methodology on subjects like Digital Signal Processing, Signals and Systems, Electromagnetics, Control Systems, Data structures etc. were dealt with.
 - **Burt Dicht, Director, IEEE Pre University Programs** addressed the early career faculty



- **Web-e-Philian :** Two day workshop on Web Development and Hosting
- **Srishti** –Two days' workshop on application development and posting @ IEEE HQ, Kerala Section
- **Professional Career Enhancement Workshop 2014**

Sessions	Speaker	Topic
Session 1	Mr. Anil Kumar G (Sr. Director Consultant, BNI Cochin)	Personal Skills to achieve professional success.
Session 2	Mr. K. B. Gopalakrishnan (CFO, NeST Group)	Essential Financial Management for Professionals
Session 3	Mr. Vijay S Paul (Founder & Blogger, IZE Creative)	YOU 2.0 Personal Branding through social media

Conferences:

IEEE Global Humanitarian Technology Conference South Asia Satellite

- **Dr. Raghunandan**, All India Peoples Science Network delivered the keynote on “Networked Rural Industries in India: towards a new development paradigm”.



Technically Cosponsored International Conferences

- International Conference themed on “Magnetics, Machines & Drives” (IC-MMD) in association with Amal Jyothi College of Engineering.
 - Received 492 papers
 - 3 reviews / paper
 - 26.8% acceptance ratio
 - More details on <http://aicera.in/2014/>

- International conference on Computational Systems and Communications in association with Lal Bahadur Shastri Institute of Technology for Women, Trivandrum
 - Received 187 papers
 - 3 reviews / paper
 - 62.57% acceptance ratio
 - More details on <http://iccsc.lbsitw.ac.in/>

- International Conference on Data Science and Engineering in association with Cochin University of Science & Technology, Cochin.
 - Received 210 papers
 - 3 reviews / paper
 - 20.5% acceptance ratio
 - More details on <http://icdse.cusat.ac.in/>

- International Conference on Advances in Computing & Communications in association with Rajagiri School of Engineering, Cochin
 - Received 579 papers
 - 3 reviews / paper
 - 14.8% acceptance ratio
 - More details on <http://acc-rajagiri.org/>

- Current Techniques in Medical Analysis (CUTECMIA) in association with Adi Shankara College of Engineering
 - More details on <http://cutecmia2014.adishankara.ac.in/>

- International Conference on Power, Signals, Control & Computations (EPSCICON 14) in association with Vidya College of Engineering, Trissur
- International Conference on Advances in Green Energy in association with Mar Besalious College of Engineering, Trivandrum
 - More details on <http://www.icage14.org/>

B.4 Students Activities

The student Activities of Kerala Section is vibrant in organizing activities and promoting the vision of IEEE across the state. With 77 student branches and 3600 members, the student team led by the student activities chair support and volunteer to any activity that needs technological solutions.

For effective management of such a vibrant, geographically spread student membership, the section has been following the hub and spoke administrative model; the Local Integrated Network of IEEE in Kerala (LINK). The primary aim of LINK is networking student branches in an effective way, thereby increasing the value in IEEE Student membership. LINK has achieved tremendous results, causing an exponential increase in student branches and student activities in IEEE Kerala Section. The LINK and its subsidiary HUB teams (three in numbers divided as Travancore Hub, Kochi Hub and Malabar Hub for the geographic distribution of Kerala Section) are being trained with effective leadership skills which is being passed on to the student community, thus improving key skills like professionalism and ethics in students.

Total number of Student Branches in the Section:

The section has 77 student branches spread across the state, being monitored and mentored by the LINK team.

1. Adi Shankara Inst of Engineering & Tech SB STB64201
2. Adoor College of Engineering SB STB61101
3. Al-Ameen Engineering College SB STB10891
4. Amal Jyothi College Of Engineering STB64771
5. Amrita School of Engineering STB66161
6. Amrita Vishwa Vidyapeetham SB STB63241
7. AWH Engineering College STB64211
8. Baselios Mathews II College of Engineering SB STB08741
9. Bishop Jerome Institute SB STB15941
10. Caarmel Engineering College SB STB04801
11. Chengannur College Of Engineering SB STB60451
12. Cochin Univ of Science & Tech SB STB81261
13. College of Engineering Attingal SB STB09801
14. College of Engineering Cherthala SB STB02121
15. College of Engineering Karunagappally SB STB03951
16. College of Engineering Kottarakkara SB STB05351
17. College of Engineering Munnar SB STB64661

18. College of Engineering Poonjar SB STB05341
19. College of Engineering Trikaripur SB STB12741
20. Cooperative Institute of Technology SB STB09501
21. Federal Inst of Science & Tech SB STB63121
22. Gov Eng College Sreekrishnapuram STB63851
23. Government College of Engineering - Kannur SB STB03561
24. Government Engineering College - Barton Hill STB64271
25. Government Engineering College - Kozhikode SB STB07931
26. Government Engineering College-Wayanad SB STB11161
27. Govt. Engg College, Idukki
28. IES College of Engineering SB STB06931
29. Ilahia College of Engineering and Technology SB STB08431
30. Indian Institute of Space Science And Tech SB STB09671
31. Jawaharlal College of Engineering and Tech SB STB15501
32. Jyothi Engineering College Sb STB63281
33. K M C T College of Engineering SB STB04361
34. KMEA Engineering College SB STB11171
35. LBS College of Engineering, Kasargod
36. LBS Institute of Technology for Women SB STB10221
37. Lourdes Matha College Of Sci & Tech SB STB64301
38. Malabar College of Eng SB STB13741
39. Mar Athanasius College of Engrg SB STB32041
40. Mar Baselios College of Eng & Tech STB64311
41. MEA Engineering College - Perinthalmanna SB STB08091
42. MES College Of Engineering SB STB31251
43. Model Engrg College Sb STB35681
44. Mohandas College of Engineering & Tech SB STB64741
45. Mount Zion College of Engineering SB STB09131
46. Musaliar College of Engineering & Technology SB STB10761
47. Muslim Assoc Coll of Eng Venjaramood SB STB13951
48. National Inst of Tech Calicut STB21881
49. National Institute of Electronics & IT, Calicut
50. Nehru College of Engg & Research Centre, Thiruvillwamala, Trichur
51. Noorul Islam College Of Engineering STB60881
52. NSS College of Enngineering SB STB28381
53. P A Aziz College Of Engineering STB65831
54. Rajagiri School Of Engineering & Tech STB64831
55. Rajiv Gandhi Inst Of Tech STB65421
56. Royal College of Eng and Tech - Akkikkavu SB STB07351
57. Sahrdaya College Of Engineering & Tech STB65601
58. Saintgits College Of Engineering SB STB08321
59. Sarabhai Institute of Science and Tech SB STB08751
60. SCMS School of Engineering & Tech SB STB04161
61. SNS College of Engineering SB STB12151
62. Sree Buddha College of STB12941
63. Sree Chitra Thirunal College Of Engineering SB STB04811
64. Sree Naranyana Gurukulam College Of Eng STB63771
65. Sree Narayana Gurukulam College Of Engrg SB STB14191
66. St Joseph's College Of Eng & Tech SB STB63791
67. Thangal Kunju Musaliar Inst Of Tech STB63941
68. Thejus Engineering College SB STB10481

69. Tkm College Of Engrg STB28391
70. Toc H Institute of Science and Technology STB64671
71. Trivandrum College Of Engrg SB STB98441
72. Univ Of Kerala,Kariavattom Sb STB18381
73. University Of Kerala Kariavattom SB STB08761
74. Vidya Academy Of Science & Tech STB64341
75. Vimal Jyothi Engineering College STB03711
76. Viswajyothi College Of Eng & Tech STB64351
77. Younus College of Eng & Tech STB66381

Number of Student Branches formed in the current year :

- Six New Student Branches were formed during 2014.
 1. Jawaharlal College of Engg, Punnamm, Trichur
 2. Bishop Jerome Institute, Kollam
 3. Govt. Engg College, Idukki
 4. National Institute of Electronics & IT, Calicut
 5. Nehru College of Engg & Research Centre, Trichur
 6. LBS College of Engineering, Kasargod
- Seven new SB Society Chapters were formed during 2014
 1. Robotics and Automation Society S B Chapter, College of Engg, Trivandrum
 2. PES SB Chapter , College of Engg, Munnar
 3. PES S B Chapter, National Institute of Technology, Calicut
 4. IAS S B Chapter, St. Joseph's Inst of Engg & Tech SB
 5. Computer Society S B Chapter, College of Engg, Munnar
 6. Computer Society S B Chapter, VJEC Kannur
 7. IAS S B Chapter, MEA Engg College, Perinthelmana.

Section level student activities

Face 2 Face :

Face 2 Face is the annual Volunteer Leadership and Training program for student branch leaders. The training is offered typically during the month of January; new Execom members of all SBs in the section are invited to one location in the section. The new team members get to know each other, improving networking and inter student branch activities. SB life cycle is one important aspect which is touched upon, from maintaining accounts to performing annual reports and submitting reports for the previous year.

In 2014, the Face 2 Face was held at KMEA Engineering College on 12th April and had a participation of 362 student members.



Branch Councilors Congress:

In recognizing and appreciating the efforts of the Branch councilor, the section annually organizes a branch councilors' congress giving opportunity for councilors to network and improve their professional sphere. Industry experts deliver talks on industry requirements and this professional network tries to bridge the Industry-Institute gap. Volunteer Leadership and Training for branch councilors on student branch life cycle and the importance of continuity in councillorship for effective management of a Student Branch are emphasized upon.

In 2014, the BCC was held at Hotel Abad Plaza, Cochin and had councilors from 50 SBs attending. The congress had the presence of leading personalities including Mr. Philip John, President M/S. Ushus Tech, Mr. Varghese Cherian, Director, CoE, UST Global and



Dr. K R Suresh Nair, Chief Technological Officer, NeST Group. The forenoon session was focused on workshop on Industry Institute Interaction in which they shared their views on industry institute relations and its scope in Kerala for the coming years. The afternoon session started with a brief session on Student Branch Operation Guidelines by Prof. Muhammed Kasim, SAC IEEE Kerala Section, which focused on improving the management of student branch and insight on various administrative levels of student members in Kerala section. The next session was aimed at familiarizing the recent changes and advances in IEEE Xplore Digital Library, handled by Mr. Dhanu P, IEEE Client Services Bangalore. A session regarding the financial matters was also conducted providing guidelines in the area of funds & reporting criteria by Dr. Sameer S, Treasurer IEEE Kerala Section. The Student Branches rewarded with IEEE rebate for the year 2012 was announced

Kerala IEEE Technical Symposium (KITEs) :

KITEs is a program which focuses on providing technical enrichment by offering multiple workshops as well as other platforms for participants to showcase their technical skills by a project exhibition. Students from various parts of the section exhibit their project ideas and prototypes which are being evaluated by senior members of the state. Potential prototypes are selected and mentored for development, both financially and technically.

In 2014, the KITEs was held at Rajiv Gandhi Institute of Technology SB during 15th, 16th, 17th August with over 400 participants from 63 SBs. It hosted 6 full-fledged workshops including Android-controlled Robotics, CATIA, MATLAB, PIC, Game Designing, Ethical Hacking and Hackathon, 4 events, 2 talks and one open forum. Besides the main stream events, a lot of fun-filled activities including online games that perplex grey cells were conducted including the Maze-A-Maze 2 and Lol Waves.



All Kerala Student Congress (AKSC) :

The All Kerala Student Congress (AKSC) is a typical 3 day technical / managerial training and workshop program on all circuit branches. Workshops on free and open source softwares like Python, LaTeX for documentation, Scilab in lieu of Matlab etc are touched upon.

The College of Engineering, Trivandrum hosted the 20th edition of All Kerala Students Congress (AKSC), 2014 on the 26th, 27th and 28th of September. Shri B Ramani, executive director of CDAC and Dr. G Vijayaraghavan, CEO of Techno Park and a Kerala State Planning Board Member, presided over the inauguration. The 3 day event was packed with 250 plus registrations from 25 colleges in the state, more than 50 Volunteers, 7 speakers with 11 sessions and 7 workshops ranging from technical to entrepreneurial. Some of the highlights include a machine learning and data analytics session by Dr. Deepak Garg who is the chairman of the IEEE Computer Society India, which dealt with the promises, possibilities and machine learning in the field of artificial intelligence. A Node JS workshop was held under the guidance of Praseed Pai who has been working in the IT/Engg software industry for more than 2 decades.



Section Level PES Quiz

The LINK in association with PES activities organized a quiz competition across Colleges and schools in Kerala. As part of IEEE Day Celebrations, on October 7th 2014, the Power and Energy Quiz were conducted in 51 engineering colleges targeting First year students.

- Travancore Hub - 12 colleges
- Kochi Hub - 19 colleges
- Malabar Hub - 20 colleges

This was supported by the PES Member initiative fund of U S \$ 2500 the event have considerably increased the visibility of IEEE and IEEE membership benefits to non-members, especially to those who have just entered the Engineering field.



LINK CAMP :

A two day Annual introspection event, typically during the month of December where all Student Branch executive committee members come together to present the activities at their SBs. Student Activities Awards for Outstanding Volunteer, Outstanding WIE Volunteer, Outstanding Branch Councillor and Outstanding Student Branch is announced and given away during the next Section Annual General Body Meeting in January.

IEEE LINK CAMP 2014 was held at KMCT College of Engineering, Calicut (KMCTCE), from 20th to 22nd December 2014. Over nine eminent speakers from different parts of the country. Mr. Nivas Ravichandran on “How to make the best use of your engineering days..??”, a session on IEEE Resume Lab by Mr. Abey Easow Joseph, “Focused training of IEEE” by Mr. Aswin Shibu Abraham and “Why I won’t give you

a job..??” by Mr. Arjun R Pillai, a talk on SIGHT was handled by Mr. Anand Balu, Mr Andre Obler, who handled a session on “online hate prevention” followed by “Wireless Communication” by Mr. Sabarinath G Pillai, “Student to Professional” by Mr. Shone Jose, “Social Media Intelligence” by Mr. Tittu Varghese, “Entrepreneurship” Mr. Bibin Mathew Joseph.



Number of active Student Branches

Of the 77 student branches in the section, Forty Student Branches have completed all mandatory reporting as of January 2015.

Summary of Student Branch activities

The section Student Activities received the following awards in 2014

Two Student Enterprise awards

- **TKMCE SB** for the project, "Brain Controlled Switches for the Paralyzed"
- **Cochin Univ of Science & Tech SB** for the project “Autonomous Tracking and Obstacle Mapping Robot”

One Darrel Chong Award in Silver Category

- IEEE Amrita SB won the Silver award for IEEE International Symposium on Education, Technology and Entrepreneurship (ISEE) 2014

Runner up for R10 SB Website contest

- IEEE Student Branch, College of Engineering Trivandrum, emerged as the 2nd Runner-up of the **Region 10 Student Branch Website Contest**

Two IAS chapter awards

- IAS SBC Vimal Jyothi College of Engineering, Chemperi , Kannur won the “ Out Standing New Student Branch Chapter Award 2014”
- IAS SBC Amrita Vishwa Vidyapeetham, bagged the 3rd prize for “IAS Most Happening Chapters Contest”

Three Richard E Merwin Scholarship

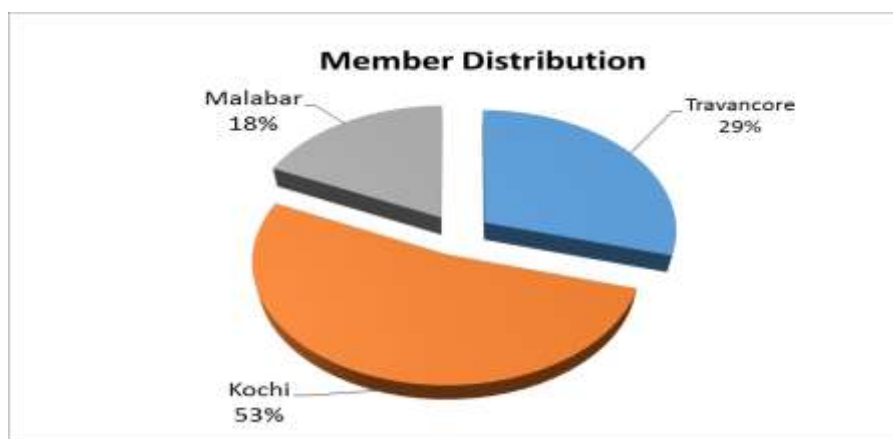
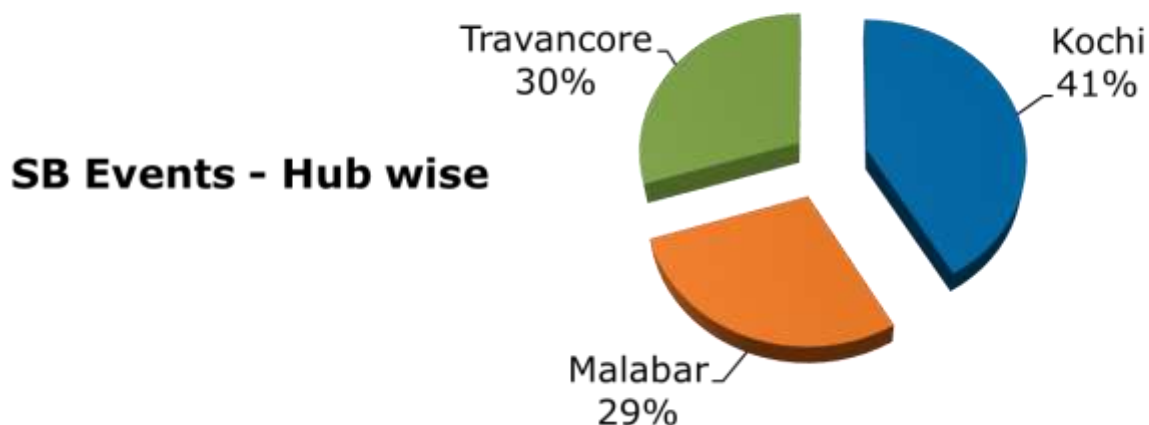
- Athul Balan E. A - Amrita SB
- Kevin Martin - CET
- Pranav Raj – CET

Outstanding Branch Councillor Award

- Ms. Sunitha Beevi, TKM College of Engineering has been awarded with the Outstanding Branch Councillor Award

Student Branch Events

Over 450 events reported by SBs across Kerala, evenly spread across the 3 hubs. 2014 was “Malabar Hub Year”, giving special emphasis to SBs in the Malabar region of the state. This was to improve the student member benefits of this geographic region as there are only few educational institutions to this part of the state and is remote. Despite these difficulties, it was observed that $\frac{1}{3}$ rd events of student activities have been at the Malabar region and this in itself is an achievement.



B.5 Affinity Group Activities

Young Professional (YP)

- ECFDP (Early Career Faculty Development Program) – Series 2 & 3
 - The event was organized for the early career academicians from engineering colleges of the state to boost their technological awareness and IEEE awareness. The Young Professionals AG with the help of IEEE Educational Activities Board had evolved a program for the Kerala specific needs, which could be useful for the rest of the developing countries as well.
- Eyes free Science Camp for the Blind & Low Vision Students
 - In association with Chakshumati, an NGO working towards the upliftment of the visually impaired, the Young Professionals AG organized an eyes-free-camp, a training session for school students which instated a confidence in them to pursue science and engineering for higher studies.



- All Kerala IEEE SIGHT Camp (in association with WIE)
 - This event was aimed at the enlightenment of growing generation in the tribal area, Kunjipara, Kerala. A team of student engineers accompanied by senior members travelled to this tribal village, met with the people and understood firsthand the needs of these people. Technological solutions to their issues have been presented to the local governance and follow ups are being done regularly.
 - This was presented at the Sections Congress in Amsterdam and was highly appreciated.
 - The SIGHT group of Kerala Section was recognized as a NOTABLE SIGHT of 2014.



- Community Engagement Workshop (in association with WIE)
 - CEW on SIGHT, EPICS and TISP hosted by IEEE Kerala SIGHT and IEEE Kerala YPs SIGHT with support from IEEE SIGHT shared the needs of the society where the technology solutions are required to address humanitarian issues by experts and to share the experience of volunteers who have already provided solutions for demanding humanitarian issues
- STEP (Student Transition Elevation Program) & TISP (Teacher In service Program) Boot Camp

Women In Engineering (WIE)

The 12 years of Women In Engineering AG in Kerala was celebrated with members, Past Present and future attending a **WIE Panel Discussion** on the future of Women in engineering activities in the Section.

- **WIE Summit** with discussion and workshops on three themes

A WIE Summit, a three day event at three locations in the section was held with three different themes

- Women In Computing
- Women In Technology
- Women In Leadership

The event was from October 31st to 2nd November. Eminent Women in Engineering and Technological domains delivered their experiences. Dr. Tessy Thomas, the missile woman of India, Dr. Ramalatha Marimutu, R10 WIE Chair and so on were resource persons for the activity.

Life Member

- Life Member Affinity Group formed and Inaugurated

Consultant Networks

- IEEE USA Consultants Network Affinity Group Formed and Inaugurated. The consultant's network aims at mentoring budding entrepreneurs in getting started to the business eco system of Kerala.

B.6 Awards & Recognition Activities

Award constituted by the Section

Section Outstanding Volunteer Award

- **Mr. Shahim Baker** - for building the Kochi Subsection through several technical, social and humanitarian activities and for his services towards the Membership Development and Young Professionals activities of the Section
- **Dr. Bijuna K** - for contributions to the Section activities in general and to the WIE AG in particular.

Section Outstanding WIE Volunteer Award

- **Ms. Mini Ulanat** - for enhancing the quality and outreach of different programs of Kerala Section, its Technical Societies and Affinity Groups

Outstanding Young Professional Volunteer

- **Mr. Vijay S Paul** – for the development of Young Professionals and his significant contribution in organizing the Early Career Faculty Development Programme.
- **Mr. Bibin Parukoor Thomas** – for the development of Young Professionals and in managing the Social Media for the engagement of members in the Section, IEEE Day Celebrations and IEEE Sections Congress.

Section Outstanding Student WIE Volunteer Award

- **Ms. Aparna U Nair** from Govt. College of Engineering Trissur SB - for her contributions to the advancement of Women in Engineering Activities in the student Community.

Section Outstanding Student Volunteer Award

- **Mr. Kiran Rajmohan** from College of Engineering, Trivandrum – for his efforts in the advancement of Student Activities in the Section.

Section Outstanding Branch Councilor Award

- **Mr. Shanu N**, Councilor College of Engineering, Chengannur – for his continued efforts in contributing to the SB activities.

Certificate of Appreciation to Student Branches and its Councilors

The following Student Branches and its councilors were given special certificates of appreciation for notable services and contributions as a Student Branch / Branch Councilor towards the advancement of a student branch, a valuable building block of Kerala Section.

Mrs. Gomathy S.	ADI SHANKARA INSTITUTE OF ENGINEERING & TECHNOLOGY
Mr. Shanu N	COLLEGE OF ENGINEERING - CHENGANNUR
Dr. Suresh Babu	COLLEGE OF ENGINEERING TRIVANDRUM
Mr. Praveen V	FEDERAL INSTITUTE OF SCIENCE & TECH
Ms. Asha Prasad	GOVERNMENT ENGINEERING COLLEGE - SREEKRISHNAPURAM
Mr. Anu Muhammed	GOVERNMENT ENGINEERING COLLEGE - BARTON HILL
Dr. K Meenakshy Moorthy	GOVERNMENT ENGINEERING COLLEGE - THRISSUR
Mr. Emmanuel Babu	MAR ATHANASIOUS COLLEG OF ENGINEERING
Mr. Anzar S M	MES COLLEGE OF ENGINEERING

Ms. Anu George	RAJIV GANDHI INSTITUTE OF TECHNOLOGY
Mr. Deepak P	SREE NARAYANA GURUKULAM COLLEGE OF ENGINEERING
Mr. Anoop B N	ST JOSEPH'S COLLEGE OF ENGINEERING & TECHNOLOGY
Mrs. Preethi Thekkath	TOC H INSTITUTE OF SCIENCE & TECHNOLOGY

Award(s) received from R10

- **Ms. Sarada Jayakrishnan** : Winner of the R10 WIE Professional Volunteer Award
- **Kerala Section WIE AG** : R10 WIE Section Affinity Group Award
- **IEEE Student Branch, College of Engineering Trivandrum**, emerged as the 2nd Runner-up of the Region 10 Student Branch Website Contest

Award(s) received from IEEE HQ

- **Prof. V. K. Damodaran & Mr. Ranjit Nair** : Meritorious Achievement Award in Continuing Education
- **Mr. Bibin Parukoor Thomas & Mr. Jaison Abey Sabu**: team members of the 2014 IEEE Day team selected as recipient of 2014 MGA Achievement Award
- **Kerala PES** received the IEEE PES 2013 Chapter Membership Contest
- **College of Engineering, Chengannur Student Branch WIE Affinity Group** received an Honorable Mention in the 2013 WIE Student Branch Affinity Group of the Year Award.
- **Kerala SIGHT** was recognized as Notable SIGHT Group of 2014
- **IAS SBC Vimal Jyothi College of Engineering, Chemperi** , Kannur won the “ Out Standing New Student Branch Chapter Award 2014”
- **IAS SBC Amrita Vishwa Vidyapeetham**, bagged the 3rd prize for “IAS Most Happening Chapters Contest”
- **Richard E Merwin Scholarship**
 - Athul Balan E. A - Amrita SB
 - Kevin Martin - CET
 - Pranav Raj - CET
- **Darrel Chong Award**
 - IEEE Amrita SB won the Silver award for IEEE International Symposium on Education, Technology and Entrepreneurship (ISEE) 2014
- **Outstanding Branch Councillor Award**
 - Ms. Sunitha Beevi, TKMCE SB

B.7 Communication Activities

Newsletter (name and number of issues in the year)

- Kerala Section regularly publishes its newsletter :
 - ◇ 6 issues per year online
 - ◇ 1 annual print copy distributed to all members in the section by post

Home Page of the Section

- <http://www.ieeekerala.org/> :: updated regularly as required

Other means of contacts with Section members

- Regular e-mail updates and invites to section activities
- Season's Greetings sent by Post
- E-notices
- Section LinkedIn page
- Facebook page:
 - ✧ <https://www.facebook.com/ieeekerala> : Section facebook page
 - ✧ <https://www.facebook.com/keralagold> : Section Young Professionals Page
 - ✧ <https://www.facebook.com/groups/ieeelink/> : Section Student Activities Page

B.8 Industry Relations

Membership growth and retention

- Value adds to Professional Members of the section were introduced by way of MoUs.
- Formation of a Student Activities Board with members from both Industry and Academia to bridge the gap between what is required in the Industry and the deliverables from Academia.

Activities for/with industrial members

- All events organized in the section have participation from the Industry.
- Professional Activities Committee works on requirements of young engineers working in the Industry

B.9 Humanitarian Technology Activities

Community Engagement Workshop

- CEW on SIGHT, EPICS and TISP hosted by IEEE Kerala SIGHT and IEEE Kerala YPs SIGHT with support from IEEE SIGHT shared the needs of the society where the technology solutions are required to address humanitarian issues by experts and to share the experience of volunteers who have already provided solutions for demanding humanitarian issues

All Kerala IEEE SIGHT Camp

- This event was aimed at the enlightenment of growing generation in the tribal area, Kunjipara, Kerala. A team of student engineers accompanied by senior members travelled to this tribal village, met with the people and understood firsthand the needs of these people. Technological solutions to their issues have been presented to the local governance and follow ups are being done regularly.
- This was presented at the Sections Congress in Amsterdam and was highly appreciated.

IEEE Global Humanitarian Technology Conference, South Asia Satellite

: 26 – 27 September, 2014

- Kerala Section organized and hosted the 2014 edition of Global Humanitarian Technology Conference's South Asia Satellite

- A satellite of the Global Humanitarian Technology Conference, Silicon Valley
- Dr. Raghunandan, All India Peoples Science Network delivered the keynote on “Networked Rural Industries in India: towards a new development paradigm”.

B.10 Community Activities

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

IEEE Day

IEEE Kerala Section celebrated IEEE Day on 7 Oct 2014 with a brainstorming discussion on “Ways forward to build a better Technology and Innovation led business ecosystem in Kerala” involving captains of industry, academia, R&D houses, infrastructure and government. A report of the same was prepared and circulated among various stake holders for detailed deliberations and further decision making.

- ✧ Brainstorming discussion on “Ways forward to build a better Technology and Innovation led business ecosystem in Kerala”
- ✧ Talk on “Leveraging Technology for a Better Tomorrow” by Mr. Satish Babu
- ✧ Full report attached as separate sheet

PART C - OTHERS

C.1 Special Events

- IEEE Day Celebrations : Report attached as appendix

C.2 Relationship with National Societies

Kerala section works closely with the following Societies in Kerala.

- ✧ THE INSTITUTION OF ENGINEERS (INDIA) KERALA STATE CENTRE
- ✧ COMPUTER SOCIETY OF INDIA TRIVANDRUM CHAPTER
- ✧ AERONAUTICAL SOCIETY OF INDIA TRIVANDRUM BRANCH
- ✧ SYSTEMS SOCIETY OF INDIA THIRUVANANTHAPURAM CHAPTER
- ✧ IETE THIRUVANANTHAPURAM LOCAL CENTRE
- ✧ PROJECT MANAGEMENT INSTITUTE – TRIVANDRUM - KERALA CHAPTER
- ✧ INDIAN NATIONAL SOCIETY FOR AEROSPACE AND RELATED MECHANISMS, THIRUVANANTHAPURAM CHAPTER
- ✧ SOCIETY OF AEROSPACE MANUFACTURING ENGINEERS, THIRUVANANTHAPURAM

C3. Collaboration with other IEEE Sections

Support extended to neighboring Sections

- Section Senior Members help in review processes of Conferences organized by IEEE Madras Section
- Distinguished Lecture Programs organized with resource persons from IEEE UP Section

- Kerala Section Members volunteer to the India Council on various capacities

Joint activities with any other Section

- IEEE GHTC SAS was organized along with IEEE Region 6

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

- Kerala Section has 2 Sub Sections (Kochi Sub Section and Malabar Sub Section) and 10 Society Chapters. All activities organized by the subsection / society chapters are supported both financially and technically by the Section.

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

- Active participation of senior members as well as young professionals in the section activities
- Mentoring of new and young professionals
- Arranging and ensuring participation of local Government, Industry, R&D in specific events.
- Formation of Student Activities Board to provide a sense of direction and guidance to the Student Activities in the Section
- Online fund transfer for speedy disbursement of section financials

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

Problem: Membership can go down because of the increase in eMembership rate and the perception that IEEE membership is expensive.

Solution: Membership retention and development to be given due priority; membership drives to be created in various centers of Govt R&D and Private industry; new society chapters would be driven in such a way as to give more value to the members of those societies, and also create more volunteering avenues.

Problem: Challenge in getting volunteers for various activities.

Solution: Volunteering to be encouraged through a variety of means including awards and recognition, campaigns to instill the spirit of volunteering, free leadership training workshops for volunteers etc.

PART D - GOALS AND PLANS

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

Purpose	Activities	Description
To improve quality of Engineering Education	<i>'Early Career Faculty Development Program'</i> , in association with IEEE Educational Activities Board	Targeting the young faculty members, this program introduces methods for effective course delivery along with concepts of otherwise 'difficult' courses.
To improve	<i>'Teacher in Service</i>	Focused on science teachers

Purpose	Activities	Description
quality of science learning in Schools	<i>Program (TISP)</i> a forum for IEEE volunteers to share their experience with local school teachers	and school students, this program with its well drafted course plan, introduces the basic concepts of science by creating applications using commonly available materials.
To inspire school children into Science	<i>eScientia Exhibit</i> , installed at C-SiS campus, CUSAT	Permanent exhibit, fully funded by IEEE HQ, this is modelled on a Space Ship, and engages school children with several experiments. Installed at a unique Science Park for children owned by <i>Center for Science in Society</i> in CUSAT campus in Kochi. Shall continue to maintain this.
To provide publishing avenues for R&D	Conference Activities, with papers published in IEEEExplore	High Quality Conferences organized directly by Section (RAICS, SPICES, GHCSAS) and several conferences technically co-sponsored by Section (around 5-6 every year).
To provide continuing education for engineers	Workshops, Seminars, and Technical programs	Organized by the active Society Chapters in Kerala Section – Computer Society, Communication Society, Power & Energy, Industrial Electronics, Industrial Automation, Power Electronics, Signal Processing, Antenna Propagation, Robotics & Automation
Advise for young entrepreneurs	Promotion of Innovation and Entrepreneurship (PIE); IEEE Consultants Network to join hands with Young Professionals	IEEE Consultants Network for Kerala has been approved recently by HQ. Expected to play a role in bringing consultants for the service of entrepreneurs, benefiting both.
Technology for humanity	SIGHT activities in coordination with Students and Young Professionals; SSIT chapter	Student projects on Humanitarian themes to be identified, supported and mentored by IEEE Kerala SIGHT, in association with SSIT and other Society Chapters.
To address the special needs of young professionals	STEP (Student Transition & Elevation Partnership) by Young Professionals	STEP facilitate the transition from student member to young professional, by introducing the opportunities and benefits of IEEE membership during the onset of a career

D.2 Goals and Future Plans

The vision of IEEE Kerala Section is *to transform the state of Kerala into a hub of innovation*, a theme that came out very emphatically during the IEEE Day Celebrations in 2014. The various programs and plans mentioned above are in alignment with this vision. In addition to continuing with the above plans, the Section is also looking at few new initiatives as follows:

1. To form a *Student Activities Board* with members from Industry, Academia, Chairs of Industry Relations, Young Professionals AG and Women In Engineering AG with the following objectives:
 - To provide overall *guidance* and *direction* to student activities of the Section
 - To act as a *bridge* between *academy* and *industry*, with benefits to each other in the long run
 - To ensure significant *professional development* of students, inspiring few of them to become technology leaders of tomorrow
2. To elevate the *Conference Activities* to the next level, by having two conference brands in IEEE RAICS and IEEE SPICES, under the close patronage of the Conference Activities Board. The Section is committed to continue to invest in these two brands, and make it synonymous with the best in quality, bench marking with the flag ship conferences of different IEEE societies.
3. To bring together Promotion of Innovation (PIE), Consultants Network Affinity Group, Industry Relations and Professional Activities to organize meaningful programs that engage the entrepreneurs, consultants, leaders of the industry and IEEE members, and provide them with unique learning and networking opportunities. This is in continuation of the IEEE Day event we had in 2014.
4. To contribute to public policy making by continuously interacting with Government of Kerala initiatives in the technical disciplines of interest to IEEE. This would mean taking part in technical committees, supporting government programs and getting support from Government agencies for various IEEE Programs.

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

1. Institutional membership - which can attract the Industry in India
2. Innovation workshops - to attract young talent to innovate everywhere
3. Membership benefits to be enhanced with benefits and discount programs at more local shops, merchandise and services.
4. Create more forums for industry academy linkages, thus adding value to the professional members in both industry and academy, and also the student community.

APPENDIX

A Report on the IEEE Day celebrations in Kerala Section

Ways forward to a better
Technology and Innovation
Led Business Ecosystem

October 7, 2014 : Hotel Hycinth, Trivandrum

About this document

IEEE Kerala Section celebrated IEEE Day on 7 Oct 2014 with a brainstorming discussion on *“Ways forward to build a better Technology and Innovation led business ecosystem in Kerala”* involving captains of industry, academia, R&D houses, infrastructure and government. This is a brief report of the meeting, for further deliberations among various stakeholders.

Agenda

Topic	Speaker	Affiliation
<i>“Leveraging Technology for a Better Tomorrow”</i> – Talk	Mr. Satish Babu	<i>Director, ICFOSS</i>
<i>“IEEE and Kerala”</i> - Presentation	Mr. Srinivasan R	<i>Chair, IEEE Kerala Section</i>
IEEE Day 2014 Celebration Inauguration	Mr. P H Kurian IAS	<i>Principal Secretary, Dept of IT</i>
<i>“Ways forward to build a better Technology and Innovation led business ecosystem in Kerala”</i> – Panel Discussion	Mr. G. Vijayaraghavan	<i>Member, Kerala State Planning Board</i>
	Mr. P H Kurian IAS	<i>Principal Secretary, Dept of IT</i>
	Dr. Kuncheria P Isaac	<i>Vice Chancellor, Kerala Technological University</i>
	Mr. M S S Rao ITS	<i>Chief General Manager, BSNL Kerala Circle</i>
	Mr. V K Mathews	<i>Chairman, IBS</i>
Concluding Remarks	Mr. Unni Sankar	<i>Vice Chair, IEEE Kerala Section</i>

Participants

IT Services	TCS, Infosys, UST Global, IBS
Engineering Services	NeST, TATA ELXSI, Accel Frontline, GES Infotek
Entrepreneurs	IBS, FlyTxt, Accel Frontline, InApp Information Technologies, CellApp Technologies, GES Infotek, Triassic Solutions, Envestnet, Travancore Analytics, Firmusoft Solutions, IGATech, Ingen Robotics, Zyxware Technologies, iZe Creative, Veeble Technologies, Vektor Innovations, Pikys Software, Avocado Duku
R&D Organizations	CDAC, VSSC, SCTIMST, CDIT
Academic Institutions	College of Engineering, Trivandrum; Govt. Engineering College, Barton Hill; Indian Institute of Space Science and Technology, Trivandrum; Indian Institute of Information Technology Kerala; St. Joseph’s College of Engineering & Technology, Palai; Albertan Institute of Science & Technology, Kochi; Mohandas College of Engineering, Trivandrum
Government of Kerala	Departments of Industries, Information Technology, Higher Education
IEEE Kerala Section	Office-bearers, EXECOM members, Student Representatives

Discussion Points

The discussion on “*Ways forward to build a better Technology and Innovation led business ecosystem in Kerala*” centered on the following broad objectives:

- How can we make Kerala an Innovation Hub on the lines of Silicon Valley?
- How do we create a conducive environment for interdisciplinary innovation?
- How can traditional industries transform by leveraging emerging technologies?
- How can IT industry transform from a primarily-labor-arbitrage-model to an innovation-led, value-based model?
- How do we elevate our technical education base to meet the demands of such a transformation?
- How can the infrastructure needs of this transformation be met?
- How can government-policy-making facilitate this transformation?
- How can IEEE help, through its members and organizational units?

Following are some of the highlights from the discussion:

- **Emphasis on Creation and Monetizing of Intellectual Property:** As they say, “*patent & prosper, rather than publish & perish*”. Number of patents filed in India constitutes less than 1% of the global patents. Even the patents getting filed are from Indian arms of Global corporations. Need to create awareness across industry on the importance of patents, and ways and means to monetize the intellectual property.
- **Lead in a Digital World:** We live in an increasingly digital world, where everything that can be digitized will be digitized. Successful enterprises would be those who lead in this digital world. The entire ecosystem should be ready for such a transformation, as exemplified by trends like SMAC (Social Mobility Analytics Cloud). The traditional boundaries between domain know-how and technology solutions are blurring, and companies should realize this.
- **Mentors for young entrepreneurs:** need for a technical support base that can provide professional advice and mentor-ship support for young entrepreneurs in various aspects. Can leverage the potential offered by IEEE Consultants Network in this context, a new chapter of which has been recently approved by IEEE in Kerala Section.
- **Research Infrastructure:** Universities has to give more focus on research, than merely conducting examinations and awarding degrees. The new Technical University would take steps to improve the quality of research by enhancing the linkage between Industry and Academy. Initiatives in College of Engineering Trivandrum to setup labs with industry support are cited as an example in this regard. It is planned to develop this into a full-fledged Research Park, where industries can collaborate with academicians to develop technology products. Research Scholar Program of TCS is another example of how industry can help support academic research.
- **Communication infrastructure:** it was announced that Kerala is all set to become the first state in the country to have broadband connectivity to all villages,

with the completion of National Optical Fibre Network by March 2015. Now the question is how this bandwidth can be utilized properly. New applications and Value added services targeting the hitherto un-connected masses are the need of the hour.

- **Physical & Social Infrastructure:** to make the state an innovation hub, the industries here should be able to retain the top talent coming out this state, as well as attract best talent from elsewhere. For this, one of the preconditions is to have a well-developed physical and social infrastructure including good roads, public transport avenues, residential & recreational spaces, quality healthcare and so on.
- **Quality of Engineering Education:** various ways to improve the quality of engineering education was mooted. The emphasis has to be on solving real-life problems and applying the learning with a creative mindset, than on mugging up knowledge from text books. To make classroom teaching more effective, the possibility of using video lectures of eminent personalities, followed by Q&A conducted by the faculty was mooted. With the advent of MOOC (Massively Open Online Courses), need to consider how this can be utilized effectively to supplement the traditional courses in physical classrooms.
- **School Level:** since the quality of engineering graduates coming out of engineering colleges is directly related to the quality of talent coming to these colleges, it is important to start at the school level. There is a dire need to inspire school children with the right aptitude to take up a career in science and engineering. It is felt that government programs like IT@School can be further improved with help from IEEE.
- **Value Systems:** a disturbing trend in engineering colleges is that of academic projects getting ‘outsourced’ fully or partially to unscrupulous agencies who provide ‘ready-made’ project artifacts. It was pointed out that part of this blame is on the general value systems prevailing in society, where starting from the lower primary levels in School, it is considered normal for parents to do creative work assigned for students to be done at home. This not only defeats the very purpose of such projects, but also makes the new generation lazy, always dependent on others to get things done. A holistic solution should address such aspects too.



How IEEE Can Help

It is observed that IEEE Kerala Section has been undertaking a lot of initiatives in line with the action points that has emerged from the discussions. The table below summarizes a few of them:

Purpose	Initiative(s)	Description
To improve quality of Engineering Education	<i>'Early Career Faculty Development Program'</i> , in association with IEEE Educational Activities Board	Targeting the young faculty members, this program introduces methods for effective course delivery along with concepts of otherwise 'difficult' courses. Three editions in this series have been completed spanning Travancore, Cochin and Malabar hubs, and benefiting around 120 young faculty members.
To improve quality of science learning in Schools	<i>'Teacher in Service Program (TISP)'</i> a forum for IEEE volunteers to share their experience with local school teachers	Focused on science teachers and school students, this program with its well drafted course plan, introduces the basic concepts of science by creating applications using commonly available materials.
To inspire school children into Science	<i>eScientia Exhibit</i> , installed at C-SiS campus, CUSAT	Permanent exhibit, fully funded by IEEE HQ, this is modeled on a Space Ship, and engages school children with several experiments. Installed at a unique Science Park for children owned by <i>Center for Science in Society</i> in CUSAT campus in Kochi.
To provide publishing avenues for R&D	Conference Activities, with papers published in IEEEExplore	High Quality Conferences organized directly by Section (RAICS, SPICES, GHTC-SAS) and several conferences technically co-sponsored by Section (around 5-6 every year).
To provide continuing education for engineers	Workshops, Seminars, and Technical programs	Organized by the active Society Chapters in Kerala Section – Computer Society, Communication Society, Power & Energy, Industrial Electronics, Industrial Automation, Power Electronics, Signal Processing, Antenna Propagation, Robotics & Automation
Advise for young entrepreneurs	Promotion of Innovation and Entrepreneurship (PIE); IEEE Consultants Network	IEEE Consultants Network for Kerala has been approved recently by HQ. There is a possibility of replicating the success of this program in US, where it is regarded as premier service matching technical consultants with clients

Conclusion

At IEEE Kerala Section, we believe that transforming Kerala into an Innovation Hub is in the best interest of the engineers, technology professionals, entrepreneurs, government and the general public. While we understand the practical difficulties and constraints that lie ahead, we commit ourselves to continue the efforts that IEEE Kerala Section has already taken in this direction, right from inception, by our founder chairman and pioneering technocrat, Mr. KPP Nambiar. Over the years, successive leaderships have taken the baton forward, to make the Section a nerve center for these efforts by providing a unique platform that brings together Industry, Academia, R&D, Infrastructure and Government. We request the support, patronage and active participation of all stakeholders in this exciting journey.

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