



**The Institute of Electrical and Electronics Engineers Inc.
IEEE BANGALORE SECTION**

25 YEARS' SERVICE TO THE PROFESSION

ANNUAL REPORT 2002

PART A - SECTION SUMMARY

A.1 Executive Summary

The Section had a very active and successful year, following the Silver Jubilee year 2001. Prof. SV Sankaran, Chairman received the Sustained Membership Growth Award for 2001 and Mr. K Ramakrishna, Treasurer received the Sustained Membership Growth Award for 2000 for the Section at the R10 Meet at Bangkok in April 2002.

Prof. Sankaran, Chairman attended the Sections Congress in October 2002 as a primary delegate and voted for setting priorities on the recommendations by the delegates to the IEEE Board.

The Section was named for the Region 10's Distinguished Section Award for 2001. The Student Branch at NIE, Mysore received the Outstanding Student Branch for 2001 in Region 10. Two new student branches were inaugurated and approval for two new student branches was received from HQ.

The Section registered another substantial growth of 29% in the overall membership including a 46% growth in the student membership.

1-1 Annual General Meeting

The Annual General Meeting for the year 2001 was held at the Hotel Taj West End, Bangalore on the 10th February 2001. The AGM was well attended, with about 220 participants. The AGM was chaired by Prof. Rajgopal, Chairman 2001. The minutes of the AGM 2000 were adopted. Mr. Anurag Tyagi, Secretary presented the secretary's report for the year 2001 and Mr. K. Ramakrishna, Treasurer presented the financial report. These reports were duly adopted by the General Body with appreciation.

1-2 Election of the Executive Committee

The Nomination Committee, consisting of Prof. H.P.Khincha (Chairman), Mr. K.N. Srinivasan and Dr. AS Prakasa Rao, proposed the following slate for the year 2002:

Office Bearers

Prof. S.V. Sankaran	IIIT-B	SM	Chairman
Dr. Surendra Pal	ISRO	SM	Vice Chairman
Mr. Arjuna Rao Chavala	HISO	SM	Secretary
Mr. K Ramakrishna	PGCIL	SM	Treasurer

Members

Mr. A Raja Rao	Ex-BHEL	SM
Mr. Anurag Tyagi	Bodha	SM
Wg. Cdr. H R Parthasarathy	C-DOT	M
Prof. A Chockalingam	IISc	SM
Prof. A Selvarajan	IISc	M
Mr. S.Krishnaraj	Siemens	M
Dr. Suresh H Jangamshetti	BEC, Bagalkot	SM
Mr. Mahesh Agarwal	National Insts.	M
Mr. Vivek. S. Nittoor	Sanyo LSI	M
Mr. Sharath K. Udupa	Cisco	M
Mr. Nagendra Singh	Philips	M
Prof. B.S. Rajanikanth	IISc	SM

There were no other nominations by petition received from the members and the members nominated in the Slate were declared elected unanimously by the General Body to the Executive Committee for the year 2002.

The immediate past Chairman Prof. K Rajgopal and other past Chairmen Prof. M.A.L. Thathachar, Prof. H.P. Khincha, Mr. P.N. Hiriyannaiah, Prof. Lawrence Jenkins, and Mr. S. Parameswaran continue to be members of the EXECOM.

The Society Chapters' chairmen serving as ex-officio members were as follows:

Mr.S.Nagarajan	SM	Chairman, CCEM Chapter
Prof V.U. Reddy	F	Chairman, SP Chapter
Dr Navakanta Bhat	SM	Chairman, EDSSC Society
Ms. Rooparani	M	Chairman, Gold Group

At the monthly meetings of the Execom, the following members were co-opted to the EXECOM 2002:

Prof. Vinod Sharma	SM	IISC
Mr. G N Shivakumar	M	Siemens

The EXECOM met regularly for the monthly meetings and the proceedings were duly minuted and kept on record. The organizational work, Technical talks, Tutorials and Workshops, Distinguished Lecture programs, Student activities, the Annual Symposium and Student Paper Contest were taken up with good fervor and executed by the members of the EXECOM.

1-3 Awards

The Section received the following Awards during this year:

1. The RAB Section **Sustained Membership Growth Award for 2001** for Outstanding Leadership and Results in IEEE Membership Development Activities for Region 10 (second in a row following the Award for 2000).
2. The **Outstanding Student Branch Award for the year 2001** awarded to NIE Student Branch, Mysore from RAB for Region 10.
3. The Region 10's **Distinguished Section Award for the year 2001** (award to be presented in April 2003 R10 Meet).

1-4 Eleventh Annual Symposium and Student Paper Contest 2002

The Annual Symposium of the Section was held on 22-23 of November 2002. The topic of the symposium was 'SYSTEM ON A CHIP'. The symposium included, besides technical papers, a keynote talk and an industry focus session. The Student Paper Contest was held, as has become a tradition, as a part of the Symposium. This year, besides the Postgraduate and BRV Vardan Undergraduate categories, an additional category of prizes was offered to student winners from outside the state of Karnataka. Prof. A. Selvarajan was the Convenor and the motive behind the excellent organisation and conduct of the event.

1-5 Technical Activities

Distinguished lecture tour, several Tutorials, Workshops and Lectures and cosponsorship of conferences, besides the Annual Symposium with Student Paper Contest, are the highlights of the technical activities of the Section during the year. Details are given in sections of Part B. The Section was honoured by the visit of IEEE CS President Dr. Willis King, CS Executive Director Dr. David Hennage and Dr. Rangachar Kasturi, VP of CS Publications.

1-6 TENCON 2003

After the successful bid to host Tencon 2003 at Bangalore, the Section has started preparations in full swing for the same under the leadership of Prof H P Khincha of IISc who has been nominated as the General Chair. A website has been set up and Section has contributed Rs.1 lakh. More details in Part B.

1-7 STUDENT ACTIVITIES

Student activities were strong and thriving under the able leadership of Mr. Arjuna Rao Chavala, SA Chair. Student membership grew by a healthy 58 %. Two new student branches were inaugurated, approval received for two more and one student branch was revived. Four student branches conducted annual techfests. Student Branch Leadership Workshop was conducted again this year with a larger participation.

1-8 CHAPTER ACTIVITIES

All the Chapters, CCEM, SP and EDSSC, as well as GOLD Group remained active and vibrant with several technical and other activities during the year.

A.2 Financial Report

INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDING ON 31.12.2002 : (All figures in Indian Rupees)

To Execom meeting expenses	10,799=00	By F.D. Interest	1,07,318=29
" Printing & Stationery	4,326=00	" S.B. Interest	5,960=00
" Postage Expenses	3,412=00	" Interest from KDR	1,49,742=00
" Traveling Expenses	25,656=00	" Receipt from	
" Secretarial Assistance	550=00	Annual Symposium	51,400=00
" Symposium expenses	88,165=00	" Amount received	
" BRV Vardan Awards	29,183=00	from HQ	6,40,404=00
" Membership Fee	3,250=00	" Tutorial/Lecture	
" Tutorials/ Workshop		Receipts:	
Expenses	80,722=00	Workshop RTOS	1,78,900=00
" Newsletter	1,33,163=50		
" TDS	7,762=00		
" Bank Charges	700=00		
" Seed Money	2,21,027=00		
" Student Leader Workshop	16,290=00		

" AGM Expenses	85,056=50	
" Excess of Income over Expenditure	4,23,662=29	
	-----	-----
	11,33,724=29	11,33,724=29
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BALANCE SHEET AS AT 31.12.2002 : (All figures in Indian Rupees)

Corpus	20,000=00	Cash on Hand	4=83
Computer Society, Bangalore	1,00,000=00	Canara Bank I	7,897=26
Capital Fund:		Canara Bank II	9,725=09
Opening Balance	23,85,663=89	Corporation Bank I	38,969=35
Add:		Corporation Bank II	1,33,882=72
Excess of Income over Expenditure	4,23,662=29	Bank of India	7,390=93
	-----	Fixed Deposit / KDR :	
	28,09,326=18	Canara Bank	8,24,935=00
		Bank of India	1,48,033=00
		Corporation Bank I	8,53,150=00
		Corporation Bank II	3,33,000=00
		Syndicate Bank	2,72,338=00
		Andhra Bank	3,00,000=00
	-----		-----
	Rs. 29,29,326=18		Rs. 29,29,326=18
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-- Reproduced from the Audited Statement of Accounts dated 30th January 2003.

PART B - ORGANIZATIONAL ACTIVITIES

B.1 Membership Development Programs

At the end of the year 2002, the Membership of the Bangalore Section was as given below.

	2001	2002	%Growth	%of
Total(2002)				
Fellows (F)	4	4	0.00	0.12
Senior Members (SM)	96	98	2.08	3.02
Members (M)	786	1076	36.90	33.13
Life Senior Members (LS)	11	12	9.09	0.37
Life Members (LM)	7	7	0.00	0.22
Life Associates (LA)	1	1	0.00	0.03
Pending Members (PM)	58	50	-13.79	1.54
Associates (A)	574	471	-17.94	14.50
Affiliate of an IEEE society	45	47	4.44	1.45
Student Members	934	1479	58.35	45.54
Misc	9	3	-66.67	0.09

Total	2528	3248	28.63%	100%
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1-1 Evidence of retention of members

That the measures adopted by the Membership Development Chair and the Section's Execom towards retention and upgrade of membership were effective is amply indicated by the results - with improvement in almost all categories, and overall growth of 28.63%. This is especially significant coming on top of significant growth recorded in the last two years (with Awards to the Section in 2000 and 2001).

The Section recorded a robust growth of 36.90% in Member grade and 58.35% in Student Member grade in the year (thanks to the continued good campaign by the Student Activities Chair Mr. Arjuna Rao Chavala). The growth in Member grade is particularly significant in the recent history of the Section.

1-3 GOLD Activity

Following the appreciative award to the Section from the RAB GOLD Committee received last year for support to the GOLD Group, GOLD has continued with more strength and vigour, organising several technical and social events during the year, supporting student activities, especially the Student Leadership Workshop for the second year in succession.

B.2 Professional and Continuing Education Activities

2-1 Eleventh Annual Symposium and Student Paper Contest 2002

The Annual Symposium was held on 22-23 November 2002. The topic of the symposium was '**SYSTEM ON A CHIP**', which proved to be a very timely theme.

The keynote talk on "Trends in SOC with DSP and RISC integration" was given by Mr. Sham Banerji of Texas Instruments. There were seven technical sessions comprising of contributed papers (14), industry focus (5 invited) papers and student contest papers (14). Papers on several areas of interest such as Architectures, Analytical and Design Methods, Testing and Packaging, and various applications were presented. Prof. BS Sonde chaired the industry session.

The student paper contest was conducted in three categories, viz., Postgraduate category, BRV Varadan Undergraduate category and Undergraduate (Non Karnataka) category as part of the Symposium.

Prof. Selvarajan did an excellent job as Convenor of the Symposium, ably assisted by Execom and volunteers.

2-2 TENCON 2003

After the successful bid to host Tencon 2003 at Bangalore, the Section has started preparations in full swing for the same under the leadership of Prof H P Khincha of IISc who has been nominated as the General Chair. Prof. Y N Srikant of CSA Dept. of IISc is the Technical Chair. Taj Residency Hotel has been selected as the venue. A website for the conference has been established, the URL being www.ieee.org/tencon2003 and substantial printed and email publicity done. Section has contributed seed money of Rs.1 lakh to kick-start the Tencon activities. The Tencon budget has been presented to R10 and HQ. Technical papers have started coming in. It has received some sponsors too, including companies like Intel, IBM.

2-3 Distinguished Lecturer Tours

The following Distinguished Lecturer visited the Section and gave a state of the art presentation:

1. A two day tutorial on "Wireless Communication" by Dr Rodger E Ziemer was organised by the Section along with IEEE CCEM Chapter and the IEEE UVCE Student Branch on 31 May and 1 June 2002.

Prof. Chockalingam, Professional Activities Chair and other Execom members and volunteers helped to coordinate this and other technical events with great success. Mr. Shivakumar and Prof. Rajgopal gave excellent support for email publicity and registration for these technical events.

2-4 Workshops and Tutorials

The following Workshops and Tutorials were organized by the section during 2002:

1. Seminar by **Dr Hans Vaugheluwe** on 'From Code to Models to Meta Models: Is Programming Dead ?' was conducted on 08 July 2002.
2. A workshop on "Aspects of Real-Time Operating Systems" was conducted by **Prof. Lawrence Jenkins** on 28 Sep 2002.

The second one was a phenomenal success drawing an audience of over 100 attendees.

2-5 Technical Talks

1. "What Makes GSM a Killer Technology: GSM Today and the Way Forward" by **Uday Kumar** of Lucent Technologies on 4 January 2002, IWIN talk, cosponsored by Bangalore Section, CCEM Chapter, IETE.
2. "GPRS (General Packet Radio Service): Next Generation Cellular Network, Challenges, Opportunities and Directions - A Users' Perspective" by **Karthik Shivaram** of Ericsson on 1 March 2002, IWIN talk, cosponsored by Bangalore Section, CCEM Chapter, IETE.
3. "Embedded System Technologies - An Appreciation and Real Time Issues" by **Prof. Jayaraman** of Mistral Solutions on 26 March 2002, Bangalore Section talk.
4. "Four Macro Trends in SW Development" by **Dr. Ivar Jacobson**, VP, Process Strategy, Rational Software on 17 April 2002, Bangalore Section talk, cosponsors: CCEM Chapter, Rational.
5. "Issues Relating to Commercialization of Intellectual Property" by **Vijay Bobba**, McKenna Group on 19 June 2002, CCEM Chapter talk, cosponsored by Bangalore Section and CSI.
6. "An Overview of Computer Vision Research at Pennsylvania State University" by **Dr. Rangachar Kasturi** on July 9, 2002, Bangalore Section talk, cosponsors: CCEM Chapter, Philips Software Centre.
7. "A Very Low Power ADC for Digital Still Camera System" by **Suhas Kulhalli and Shati Shankar Rath**, Texas Instruments on 19 August 2002, Bangalore Section talk, cosponsored by IETE.
8. "Future Directions for Optical Fibre Systems Development" by **Prof. John E Midwinter**, Pender Professor & Director, University College, London and Past President - IEE, UK (2000-01) on 10 September 2002, ECE Dept. of IISc talk, cosponsored by Bangalore Section and IEE Bangalore Centre.
9. "Cyborg Unplugged" by **Prof. Kevin Warwick**, Professor of Cybernetics, University of Reading, UK on 18 October 2002, British Council talk, cosponsored by the Bangalore Section and IEE Bangalore Centre.

2-6 Cosponsorship of Conferences

The section continued its tradition of cosponsoring conferences by other professional societies or universities. The following were cosponsored in 2002:

1. INCEMIC 2002: 7th International Conference on Electromagnetic Interference and Compatibility (INCEMIC 2002), 18-23 February 2002 at Bangalore
2. "GPS-GIS Technologies", Two-day Seminar on 9-10 September 2002 at Bangalore, organised by IEE Bangalore Centre
3. Information Technology Workshop at Bangalore on October 20-25, 2002, organised by the IEEE Information Theory Society.

2.7 Social Events

- The outgoing Chairman Prof. K Rajgopal was felicitated in April by the EXECOM with presentation of the HQ certificate in recognition of his excellent services to the Section and IEEE.
- The Section and CCEM Chapter hosted a lunch in honour of Dr. Rangachar Kasturi, VP of Publications, IEEE Computer Society, in July 2002.
- The Section hosted a dinner meet in October 2002 in honour of the visiting IEEE CS President Dr. Willis King, Executive Director Dr. David Hennage and Dr. Rangachar Kasturi.

2.8 Visits By EXECOM Members

- **Region 10** - The Region 10 meeting that was held during April 5-6, 2002 at the Grand Hyatt Erawan Hotel, Bangkok was attended by Prof. SV Sankaran, Chairman, and Mr K Ramakrishna, Treasurer.
- **Sections Congress 2002:** Prof. SV Sankaran, Chairman attended the Sections Congress held at Washington, DC, USA during 18-21 October 2002. The delegates brainstormed and generated recommendations with assigned priorities for action by the IEEE Board. The high priority recommendations included increased electronic or web based operation of various IEEE activities and reduction of proposed membership hike, especially for students.
- **India Council** - Prof. SV Sankaran, Chairman attended the India Council meetings held in conjunction with the Region 10 Meetings, Sections Congress and the Annual meeting held in Calcutta along with ACE'02 conference.

B.3 Recognized Educational Programs

Following last year's updation which brought in 44 new colleges, there were no significant additions in 2002.

B.4 Students Activities

4-1 Student Annual Paper Contest

As per the Section's tradition for some years, the student paper contest of the Section for the undergraduate and postgraduate students was held as part of the Annual Symposium. Papers were evaluated by a panel and shortlisted for presentation -- 11 undergraduate papers selected were presented in two sessions and 3 postgraduate papers in one session. The final presentations were judged by an expert panel of judges. The paper contest winners were as follows:

The Postgraduate Category:

First prize:

S.Nitin (College of Engineering Trivandrum)

Intelligent Mobile Robot Path Planning And Tracking Using Hybrid Classical And Evolutionary Strategies.

Second Prize:

Sigu Joseph (Manipal Institute of Technology)

Efficient Hardware Implementation of DCT Algorithm for Image Processing.

BRV Vardan Undergraduate Category:

First Prize:

M.Venkataraman (Golden Valley Institute of Technology, KGF)

On a TCP-Friendly Linear Congestion Control Algorithm for Real Time Streaming

Application.

Second Prize:

Prashanth P.B, S.Sridhar, V Krishnamurthy, National Instt.of Engg,

Vidyavardhak College of Engg, Mysore

An Approach to heterogeneous Process State Capture/Recovery to Achieve Minimum Performance Overhead During Normal Execution.

The Undergraduate Non-Karnataka Category:

First Prize:

Rajeev Ganesh, Velamal College of Engg,

Design and Optimization of EDFAs for simultaneous amplification of WDM signals in both C & L bands using Fiber Brag Gratings.

Second Prize -UG (NK)

D.Ajay, P.A.Karthik, C.S.Sriram, Coimbatore Institute of Technology

SOS Transmission Through Cellular Phones to Help Accident Victims.

4-2 Student Activities

Mr Arjuna Rao Chavala, Secretary also took up the responsibilities of Chair, Student Activities and pursued the same with vigour. With good support from the EXECOM, members, college faculty and students, various activities were conducted.

- ◆ **New Students Branches** : Indian Institute of Information Technology, Bangalore and KSIT Bangalore student branches were inaugurated. Approval for student branches at Siddaganga Institute of Technology Tumkur and Dr Ambedkar Institute of Technology, Bangalore were received. The petitions for student branches at Golden Valley Institute of Technology, Kolar and SJCIT at Chickballapur are under process.
- ◆ **Activation of Student Branches** : Gogte Institute of Technology, Belgaum became active again with several student members joining it.
- ◆ **Annual Events of Student Branches** : Technical fests Cyberia-2002 by SJCE Mysore, Ankura-2002 by NIE Mysore, Intellect-2002 by MIT Manipal and Impetus-2002 by UVCE Bangalore were conducted. Ethos-2002 was started this year at BEC, Bagalkot. All the events were reported a great success despite financial constraints.
- ◆ **Membership** : Student membership increased significantly by 58.35% to 1479, thanks to the free membership offer for students from the IEEE Circuits and Systems Society.
- ◆ **Leadership Training Program** : The second student branch leadership workshop was organised with support of the GOLD group, R10 SAC and the IEEE UVCE Student Branch. It was well attended. Mr Giri Narayan of Siemens helped conduct the workshop sessions.
- ◆ **Visit to Student Branches by Officers and EXECOM members** :
 - IIIT, Bangalore by Mr Hiriannaiah and Mr Arjuna Rao C
 - UVCE, Bangalore by Prof. SV Sankaran and Mr Arjuna Rao C
 - KSIT, Bangalore by Mr Arjuna Rao C
 - MIT, Manipal by Prof. K Rajgopal and Ms Rooparani
- ◆ **Awards**: NIE Student Branch, Mysore won the Outstanding Student Branch award at the Region 10 level. Several students received Outstanding Student certificates from the IEEE HQ following recommendation by Student Activities Chair.

B.5 E-mail and Newsletter Activities, Home Page

5-1 Section Newsletter

The Section Newsletter, Broadcast, continued to be the visible communicator of the Section with the members at large. It continued to be issued quarterly –March, June, September and

December 2002 issues have been produced and circulated with the help of Mr S Krishnaraj as the new Editor. With the significantly increased membership and postal rates, the newsletter expenses have mounted substantially, but the Section has continued the same for the benefit of the members.

The Broadcast introduced the new Section and Chapter EXECOMs to members at large. Also carried reports on the AGM, annual symposium, various lectures, workshops, tutorials, R10 & IC meetings, the Sections Congress and other events of the Section and Chapters, as also GOLD activities, throughout the year. Also carried articles and reports on Student Branch activities, branch formations, tech fests, etc. And carried announcements of Student Paper Contests, Annual Symposium, Tutorials/Workshops/Lectures, and other events of interest to members. The December issue of Broadcast also carried as usual the AGM notice and the new Slate announcement.

5-2 Section Webpage and Electronic Mailing

The Section website has become a regular presence from its URL www.ieee.org/bangalore, becoming more popular among members and non-members. The impact of the website can be judged by the growth in hits from 3500 of the year 2001 to about 8500 as of 2002. Thanks to the dedicated efforts of the webmasters Mr Nagendra Singh and Mr GN Shivakumar in updating the activities on the website regularly, the Section has been successful in disseminating information to the members in an effective manner. The website also acts as a single point source of information regarding the IEEE for the Section members.

Majordomo electronic email list consisting of members' email-ids has been setup on the suggestion of Mr Arjuna Rao Chavala and maintained for communication to members without needing special accounts from ISP and incurring additional expenditure for mass e-mailing. This has been extremely useful and well-utilised for announcing various Section, Chapter and GOLD events.

The Section SAMIEEE function was performed by Mr Anurag Tyagi with support from Prof. K Rajgopal. Requirement of mailing label lists for section, chapters and affinity groups and email list for electronic mailing have been generated by the SAMIEEE.

Mr Arjuna Rao Chavala, responded to the mails sent to Section e-mail id ieeblr@vsnl.net.

B.6 Awards

Our Section received the following coveted Awards during this year:

1. The RAB Section **Sustained Membership Growth Award for 2001** for Outstanding Leadership and Results in IEEE Membership Development Activities for Region 10 (second in a row).
2. The **Outstanding Student Branch Award for the year 2001** awarded to NIE Student Branch, Mysore from RAB for Region 10.
3. The Region 10's **Distinguished Section Award for the year 2001**.

Sustained efforts by the 2001 Chairman Prof. K Rajgopal and support by all EXECOM members and volunteers resulted in achieving these awards.

B.7 Chapter Activities

7-1 CCEM Chapter

IEEE Computers, Communications and Engineering Management Societies, Bangalore Chapter continued significant activities during 2002. A report of its activities is enclosed in **Appendix 1**.

7-2 SP Chapter

IEEE Signal Processing Society, Bangalore Chapter also continued strongly in 2002 with several events and activities. The Chapter's activities are reported in **Appendix 2**.

7-3 EDSSC Chapter

Having being formed in October 2001, with Dr. Navakant Bhat as the Chairman, the chapter had the first full year of activity in 2002 and did very well. The report is enclosed as **Appendix 3**.

7-4 GOLD Group

IEEE GOLD Affinity Group, Bangalore Section was very active as in previous years and conducted many interesting activities in 2002 too. A report of its activities is enclosed as **Appendix 4**.

PART C - GOALS AND PLANS

C.1 Goals

The Section has several significant plans for the year 2003. Among the important goals for 2003 are:

TENCON 2003 – This is the most important event for 2003, being organised by the Section this year, and should be a successful event.

Educational and Professional activities – Distinguished Lectures, tutorials and workshops, cosponsored technical events will be taken up with usual fervour.

Student activities and branches will continue to receive the Section's full support. Particular attention to be paid, with the help of GOLD Group, to retain student membership in the wake of sharply increased membership dues.

Coordinate with and support the **Chapters and GOLD** to enhance their activities to serve their memberships.

Continue efforts to establish **one** more society chapter in this year.

Membership drive especially for Senior Members and Associates to regular members to be strengthened.

Electronic Communication with the members to substitute more and more of conventional communication.

C.2 Detailed Implementation Plans

TENCON 2003

Good efforts are already underway through the various Tencon committees to make this a truly successful conference; the activities are set to go into very active phase once the paper submissions are completed. Keynote speakers, sponsors, supporting organisations, publicity, web announcements, local arrangements will be pursued vigorously to bring the best to converge for the benefit of the conference.

New Chapter

Some of the Section members have initiated action towards a petition and approval of a new chapter. Section will provide all support to help the chapter formation.

On Student Activities, new chapters already approved will be inaugurated and encouraged to plan a good range of activities to benefit the students. With the active support of the GOLD Group, an action plan to retain student membership in the face of the hiked dues will be put in place.

On Electronic Communication, the Section newsletter will be published in the website besides being printed this year, so as to make the transition and pave the way to go fully on the web only in future.

C.3 Budget for 2002

(All figures in Indian Rupees)

EXPENDITURE		INCOME	
AGM Expenses	90,000=00	By Bank Interests	1,60,000=00
Annual Symposium (net)	50,000=00	By Events income	1,00,000=00
Newsletter	1,50,000=00	or Sponsorship	
Co-sponsorship of technical programs	40,000=00	Rebate from HQ	6,40,000=00
To Chapters & GOLD (4x \$180 = \$720)	34,000=00		
Membership Development	20,000=00		
Distinguished Lectures	30,000=00		
Tutorials & Workshops (net)	50,000=00		
Student Branch Activity	80,000=00		
Student Leadership Workshop	30,000=00		
Student Paper Prizes	20,000=00		
Travel by Officers/EXECOM	40,000=00		
Secretarial Support	10,000=00		
Postage, printing , stationery	10,000=00		
GOLD Activities support	10,000=00		
India Council support	15,000=00		
Miscellaneous	21,000=00		
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TOTAL	7,00,000=00	TOTAL	9,00,000=00
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PART D - OTHERS

D.1 Relationship with National Societies

The section continues its already well-established relationship with the IEE (UK) Bangalore Centre, The Institution of Electronics and Telecommunication Engineers, India, Karnataka Chapter, The ACM Bangalore Chapter, Computer Society of India (CSI) Bangalore Chapter, India WAP Initiative (IWIN) and Institution of Engineers, India, Karnataka Chapter. Several of the technical events organised during 2002 were cosponsored with one or more of these national/international societies.

D.2 Special Events

The Bangalore Section is organising the TENCON 2003 at Bangalore. Activities will be in full steam soon after the receipt of papers, with regard to all aspects of the conference.

D.3 Problems to be Anticipated

None expected.

APPENDIX

APPENDIX X-1: IEEE COMPUTER, COMMUNICATIONS AND ENGINEERING MANAGEMENT (CCEM) BANGALORE CHAPTER REPORT FOR 2002

The CCEM Chapter organized several interesting events in 2002 to serve the members and the professional community. Notable events during the year included:

1. Seminar on "What makes GSM a killer technology: GSM today and the way forward" by Mr. Uday Kumar on Jan 4, 2002
2. Talk on "GPRS (General Packet Radio Service): Next Generation Cellular Network, Challenges, Opportunities and Directions - A users perspective" by Mr.Karthik Shivaram on March 1, 2002
3. Seminar on "Escaping the Software Hell" by Mr.Ivar Jacobson on April 17, 2002
4. Tutorial on CDMA for wireless communications by Dr. Rodger E. Ziemer, May 31 - June 01, 2002
5. Talk on "Issues relating to Commercialization of Intellectual Property" by Vijay Bobba on June 19, 2002
6. An Overview of Computer Vision Research at Penn State by Dr Kasturi Rangachar, July 08, 2002

The CCEM Chapter had some distinguished visitors in October 2002 from the IEEE Computer Society HQ – Dr. Willis King, President, Dr. David Hennage, Executive Director and Dr. Rangachari Kasturi, Vice President of Publications. The Chapter hosted a dinner along with the Bangalore Section in honour of the visitors.

Earlier Dr. Kasturi had visited Bangalore in July 2002 and CCEM and Section's Execom members had discussions with him about advancing IEEE CS's penetration in India and the Digital Library.

APPENDIX X-2: IEEE SIGNAL PROCESSING (SP) BANGALORE CHAPTER REPORT FOR 2002

The SP Chapter conducted several activities during the year 2002. Highlights are indicated below:

Annual General Meeting

The Annual General Meeting for the year 2002 was held at the ECE Department, Indian Institute of Science, Bangalore on 30th December 2002. K.V.S. Hari gave the welcome address. A.G. Ramakrishnan presented the Treasurer's report. K.V.S. Hari presented the Secretary's report for the year 2002. These reports were adopted by the general body with due appreciation.

Election of the Office Bearers

The following members were elected unanimously as the office bearers for the year 2003:

Chairman	-	T.V. Sreenivas
Vice Chairman	-	B. Raj Pawate
Secretary	-	K.V.S. Hari
Joint Secretary	-	S. Lakshmi pathi
Treasurer	-	A.G. Ramkrishnan

Technical Activities

During the year 2002, the chapter conducted Special Lectures delivered by eminent personalities from Industries, Labs and Institutions specialized in the field. Prabindh Sundareson of Texas Instruments, Bangalore, coordinated with us in organizing the seminars. The participation for the Special Lectures included IEEE members, Non-IEEE members and Students. The Chapter had also organized a Course on Digital Signal Processing.

Special Lectures

1. **"Recognition of printed text, and text-to-speech in Tamil"** by Prof. A.G. Ramakrishnan, Department of Electrical Engineering, Indian Institute of Science, Bangalore on 22 February 2002.
2. **"Application of Articulatory - Acoustics for Natural Sounding Speech Synthesis"** by Dr. Ananthapadmanabha, Voice & Speech Systems, Bangalore on 5 April 2002.
3. **"Role of MPEG-4 Components in Communication and Entertainment Devices"** by Dr. Singaram Jayakumar, Epigon Audiocare Pvt. Ltd. Bangalore on 17 May 2002.
4. **"GPS receivers - Technology, Applications and Future Trends"** by Mr. S.Purushotham, Accord Software & Systems Pvt. Ltd. Bangalore on 26 July 2002.
5. **"Designing filter-and-sum microphone arrays with a speech recognizer"** by Dr.Bhiksha Raj, Mitsubishi Electric Research Lab, USA on 25 September 2002.
6. **"Processing Signals - Need for new approaches for feature extraction and classification"** by Prof. B. Yegnanarayana, IIT Madras, Chennai on 30 October 2002.
7. **"Deterministic Annealing for design of pattern recognition systems"** by Mr. Ajit V. Rao, Texas Instruments Inc. Bangalore on 13 December 2002.
8. **"Signal Processing Models for Network and Multimedia Traffic"** by Prof. Raghuvveer Rao, Gleason Professor of Electrical Engineering, Rochester Institute of Technology, Rochester New York.

Digital Signal Processing (DSP) Course - 16 weeks

Title : *Introduction to Modern Digital Signal Processing*
Instructor : *Prof. P.S. Naidu, ECE Department, Indian Institute of Science*
Duration : *9 August 2002 - 13 December 2002, 1.5 hour/week, 16 weeks*
Fee : *Free*
Class Size : *~50*

This course was jointly conducted by IEEE Signal Processing Society, Bangalore Chapter & ECE Department, Indian Institute of Science. The course was targeted towards practising engineers and graduate students who wanted to enhance their skills in DSP.

We had an overwhelming response to the course. The number of candidates applied for the course was 209. The applicants were mainly from Industry, Research Institutions and Engineering Colleges. It was decided to give preference to B.E. graduates and to select one each from every Industry. Further, due to limited number of seats, preference was given to IEEE members on first-come first-served basis. Finally, 72 participants registered for the course.

Webpage

The homepage of the chapter is <http://www.dsp.ece.iisc.ernet.in/~ieeesp>. The web page is updated regularly with the latest information.

APPENDIX X-3: IEEE ELECTRON DEVICES AND SOLID-STATE CIRCUITS (EDSSC) BANGALORE CHAPTER REPORT FOR 2002

The EDSSC Chapter conducted a variety of interesting activities during the year 2002.

The first two technical lectures were conducted by Dr. Vishwani Agrawal, Agere Systems, USA on January 16, 2002. The topics were "Delay Testing in Digital Circuits" and "High Speed VLSI Testing with Slow Test Equipment". These two talks were co-sponsored by Texas Instruments, Bangalore. On March 1st, Prof. Q.J. Zhang, Carleton University, Canada gave a lecture on "High Frequency Electronics Design: Towards Next Generation".

The formal inauguration of the IEEE ED/SSC society Bangalore chapter was held on March 16th 2002 at the Indian Institute of Science Bangalore. The event was co-sponsored by the ECE Department, IISc Bangalore. On this occasion a one day workshop titled "Future Challenges in the Deep Sub-Micron Era" was also conducted. The workshop had five invited seminars by the experts in devices and circuits. Prof. Hiroshi Iwai from Tokyo Institute of Technology gave an excellent introduction on "Silicon technology scaling trend from millimeter to nanometer". The other seminar topics were "Impact of Advanced Process Modules on Low Frequency Noise in CMOS Technology" by Prof. Cor Claeys IMEC Belgium; "Silicon On Insulator Devices for Analog Applications" by Prof. J. Vasi, IIT Bombay; "Designing Reset Systems for Mixed Signal VLSI" by Mr. Rajat Gupta, Cypress Semiconductors, Bangalore; "Building in Reliability for Deep Sub-Micron Devices" by Dr. Radhakrishnan, Phillips, Singapore. The workshop received an extremely good response with about 130 attendees from industry and academia.

A one day workshop was organized on 6th July 2002. This was arranged at the University Vishveshwarayya College of Engineering, Bangalore. It was titled "VLSI : Challenges and Opportunities in the Nanometer Era" and was specifically targeted for undergraduate students. There were 4 seminars namely 'Design challenges in Nanometer era' by V. Menzes (Texas Instruments); 'Technology challenges in Nanometer node' by P.R.Suresh (Texas Instruments); 'Impact of transistor mismatch on sense amplifier design' by N. Bhat (Indian Institute of Science) and 'Quantum Electronics devices' by P. Ray (National Semiconductor). This workshop was attended by more than 100 students.

The IEEE Distinguished Lecture "Nano-FET Fluctuation Physics" by Dr. Renuka P. Jindal was arranged on 22nd July 2002. On this occasion, the chapter office bearers met with Dr. Jindal, who is also the chapter partner, and discussed about increasing the impact of chapter activities. The ED/SSC Bangalore chapter co-operated with VLSI Society of India in arranging "VLSI Design and Test Workshops 2002" from August 29th-31st at the Indian Institute of Science. There were more than 300 delegates attending this event, of which about 150 were from industry and the others from academia. The chapter took special initiative in organizing a special session on MEMS. The chapter had set-up an IEEE exhibit booth for the delegates, showcasing various publications of the EDS and SSCS societies.

The chapter organized a short course on "Quantum Electronics Devices" on two Saturdays to enable the students as well as professionals to learn about this fascinating field. This was conducted by Dr. Partha Ray of National Semiconductor. The first lecture was on 28th September for a duration of 3 hours and the follow up lecture was on 5th October. The response was very good with about 70 attendees.

The chapter borrowed the IEDM short course video tapes on "System On a Chip" from EDS lending library. These tapes were screened on 16th November at the Indian Institute of Science. The tapes were also screened at other member sites such as Sasken, Texas

Instruments and ITI. The chapter co-operated with the IEEE Bangalore section in arranging the 11th Annual Symposium of IEEE Bangalore Section with a theme "System-on-a-chip" during November 22-23. There were more than 100 participants in the two day symposium. During this time a special video tape screening of IEDM short course was also arranged.

APPENDIX X-4: IEEE GOLD BANGALORE REPORT FOR 2002

1. The GOLD Group began the year with a novel activity in the form of the **Knowledge Sharing Sessions**. In these sessions, GOLD members interested in a particular topic of mutual interest come together and interact. The format for the Activity is for one volunteer, the coordinator, to make a short presentation followed by a discussion on the topic. The other participating members were expected to make some preliminary study of the topic to make the best use of the discussion. Accordingly, fundamentals of the chosen and links to sites where more information can be found were mailed to all members by the coordinator.
1. **Mobile Agents** Knowledge Sharing Session coordinated by **Krishnaraj S.**, of Siemens Communications Software at Siemens Communications Software, Bangalore on January 09, 2002.
2. **Quantum Mechanics** Knowledge Sharing Session coordinated by **Roopa Rani** of Torry Harris Business Solutions at Siemens Communications Software, Bangalore, on April 04, 2002.
3. **Quantum Transistor** Knowledge Sharing Session coordinated by **Mukund Raman** of Spatika Communication Technologies at Siemens Communications Software, M.G. Road, Bangalore, India on May 29th, 2002 at 6.30 p.m.
4. **Mobile Agents** Knowledge Sharing Session coordinated by **Govindaraj Avasarala.**, of Siemens Communications Software at Siemens Communications Software, Bangalore on July 16th and August 13th, 2002.
2. Talk on Technology behind the **Simputer** by **Mr. Vivek KS** and **Mr. Ashwin Tengli**, PicoPeta Simputers Pvt. Ltd. at V3 Logic, Domlur, Bangalore, India on April 22, 2002, co-sponsored by IEEE Bangalore Section.
3. **IEEE GOLD Member Profiles Project**
The Member Profiles Project is a novel project flagged off by the GOLD Group in 2002. The Profiles Project aims to increase the membership benefits of GOLD by improving the networking among GOLD members of similar interests.
4. Lecture on **Short-Range Wireless Technologies - Bluetooth Illustrated** by **Ms. Srividhya**, CTO, Impulsesoft at Philips Software Centre, Murphy Road, Bangalore on August 21st, 2002, co-sponsored by IEEE Bangalore Section.
5. Lecture on **PAC Learning: Error with Less than 100% Confidence** by **Dr. S.K. Sen** from Supercomputer Education and Research Center (SERC), INDIAN INSTITUTE OF SCIENCE at IISc, Bangalore, India on November 8 2002.
6. Panel Discussion on "**Indicators of technology development and innovation**", 17th Nov 2002 at Philips Software Centre Pvt., Ltd.

The panel members were:

Mr.KV Ramachandran, Director, Technology and Knowledge Management, Philips Software Centre

Mr.Anurag Behar, Corporate Vice President, Quality, Brand & Corporate Communication, and Innovation, Wipro

Prof.Balaji Parthasarathy, ICICI Chair and Assistant Professor, Indian Institute of Information Technology, Bangalore

Mr.Deependra Moitra, General Manager, Bell Laboratories/Lucent Technologies, India R&D Operations, Bangalore.

Also IEEE GOLD Affinity Group, Bangalore Section Execom members spent effort in planning and preparing for the mega event **yep – Young Engineering Professionals Tech Fest** slated for 17th and 18th of Jan 2003 at the Philips innovation Campus, Bangalore.