IEEE India Bulletin Vol. 11 No. 7 July 2001

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Features

CHAIRMAN'S MESSAGE

Dear Fellow Members

Our Editorial Board of the IEEE India Bulletin with Mr. N T Nair as the Editor is doing an excellent job by bringing it out regularly in time and providing a lot of useful information to the readers as well as keeping them posted with the IEEE activities carried out by the Sections all over India. This Bulletin is performing an useful function of being an important communication link between the members and the Section/Chapters/Council leadership but this link can be more effective only when all the information is shared and exchanged among all the members. While the section/chapter/council leaders should inform all the activities, programs, future plans etc. to the members in time, the members can also express their views and ideas through the newsletter. The newsletter has therefore to function as a two way communication if it has to serve its purpose usefully.

But it has been observed that the Editorial Board does not receive sufficient inputs from the sections/chapters as well as from the members. I know , all these entities are organising a number of technical and professional activities like conferences, seminars, lectures, workshops but perhaps due to paucity of time or other preoccupations by the section/chapter leaders they are not being publicised for the benefit of members in general. I am sure, many members may be having ideas on how to make IEEE more beneficial, some of them may also be having problems and so on. May I therefore request you to provide the inputs to the Editor in the form of articles, letters to editor, write-ups of interest etc. so that the same could be included to make the publication more interesting and useful. Through these columns, I am also appealing to all Section/Chapter Chairs as well as all the office bearers of the India Council to furnish all the news items in respect of their entities.

As mentioned in one of my earlier messages, Region 10 has also started publication of a Regional Newsletter. The Editorial Committee of this newsletter also wants to have articles and news items from Indian sections/chapters which may be of general interest through India Council. The Editor Ms Loreen Ozalins has already addressed an e-mail to all the section chairs in this regard and I am looking forward to receiving items from them as well as from members who may also contribute.

With best wishes,

Sincerely yours,

New Delhi   **P. K. Srivastava**

01 July, 2001.   Chairman
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                        pksri@satyam.net.in

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WORLD TELECOMMUNICATION DAY
CELEBRATIONS

IEEE Madras Section celebrated World Telecommunication Day at Chennai on 17th May 2001, in association with VSNL, IETE, IEE, IE(I) etc. Er. R N Srinivasan, CGM, BSNL Chennai Telephones who presided over the function, said that penetration of Internet services in the city compared to that of cellular telephony is better in percentage terms. With 3 lakh Internet connections , Chennai city accounted for 20% of the total Internet connections in the country, whereas, there were only 1.2 lakh cellular connections, as against the total of 33 lakhs in the country. Er. S A Soundara Rajan, Section Chair, also spoke on the theme 'The Internet - Challenges, Opportunities and Prospects'.

The National Technology Day was also celebrated along with World Telecommunication Day. Prof. R M Vasagam, Director, TANITEC and former Vice Chancellor of Anna University, highlighted the country's achievements in the field of telecommunication and technology. He emphasized the need for team work for success in technology.

Web. No doubt, it was one of the most exciting developments in the history of recorded music. Mr. Karlheinz Brandenburg of Fraunhofer Institute of Integrated Circuits, Munich is credited with the development of this format.

'Prof. R. M. Vasagam, Eur. Ing. S. Seshadri & Er.S. A. Soundara Rajan'

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Technology in brief

Fluorescent lamp flicker- A welcome use

A local area network (LAN) that uses fluctuations in fluorescent lights to transmit data is being developed, to be used as a handy aid for the disabled to lead independent lives. For example, airport lights could direct a blind person carrying a special receiver to the correct gate. At the heart of the device is a new kind of ballast, the component of fluorescent lights that regulates the electricity flowing into the lamp. Magnetic ballasts dim the lamp every 1/100 of a second - at the supply frequency of 50 Hz - causing an imperceptible flicker.

Since electronic ballasts flicker independently of the supply frequency, scientists found that they could encode data, with some modification. They designed ballasts that transmit both digital data - by turning the light on and off in short bursts - and analog data, by modulating the light's brightness by degrees.

A basic ballast can encode a simple repeating signal, like the location of an emergency exit. An advanced version includes a modem to read data transmitted over the power line. Researchers at Harvard Medical Centre say this will be a boon for people with brain injuries. They often lack cognitive and memory skills to manage their daily lives. A system was designed to remind patients about their schedule. They carried a 'Personal Locator and Minder', a modified Personal Digital Assistant, with their schedule. Lights in the patient's rooms and hallways were set up to broadcast location information to the Locator. As the time of a scheduled event drew near, the Locator would remind the patient. Using location information from the lights, the Locator would judge whether the patient was proceeding correctly and give detailed directions if needed.

(courtesy: Businessworld)

Flywheel Energy Storage System

A new flywheel energy storage system, a dependable alternative to battery based UPS and generator sets, has now become commercially available. The unit introduced by Beacon Power, USA, consists of a composite flywheel rotating on very low-loss bearings within a vacuum chamber. A motor generator uses a small amount of bus power to keep the flywheel at full speed. When primary power is lost, a bi-directional inverter instantly and automatically converts the flywheel's stored mechanical energy into reliable electrical power, allowing operations to continue without interruption. It can provide up to 1 kW of continuous electrical power, and at reduced power, can effectively support user operations for 8 to 10 hours.

World's fastest silicon chip

IBM scientists claim to have developed the fastest silicon transistor that runs at 210 GHz, which is twice as fast as current communications chips and more than 100 times faster than the Pentium 4, the Intel microprocessor that powers state-of-the-art personal computers.

IBM achieved the high speed by depositing a 200-atom-thick layer of silicon/germanium a top the basic silicon chip and redesigning the vertical bipolar transistor to make it more efficient.

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IEEE Kerala Section 'GOLD' Seminar

Graduates Of the Last Decade (GOLD) of Kerala Section organised a Promotional Seminar at TECHNOPARK, Trivandrum on 28th July, 2001, to kick start the GOLD activities of the year.
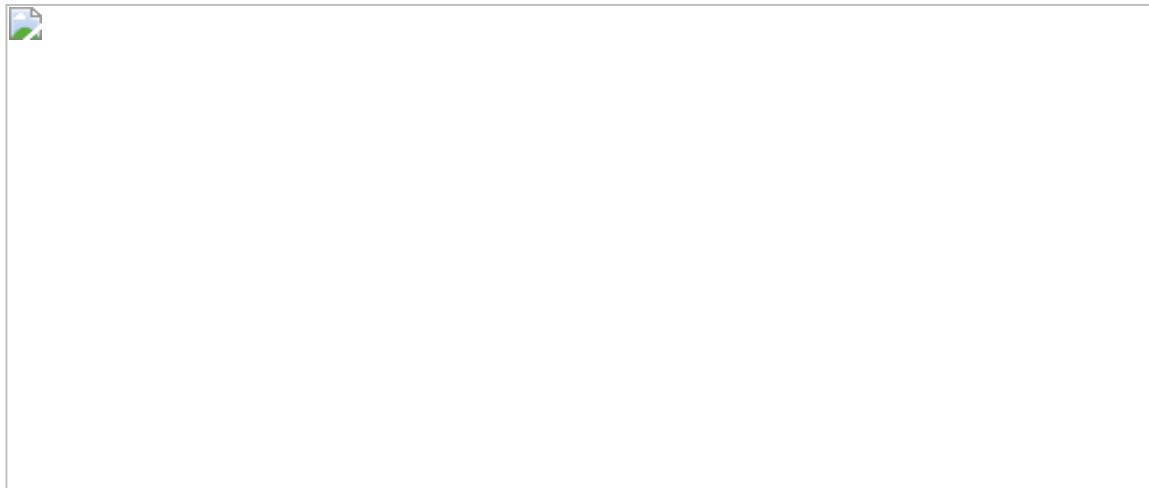
The theme:
Systems Thinking- "A Brainware"

We live in a world of interconnected systems. By training we tend to break complex problems into simpler sub-problems and tend to explain situations through a linear Cause - Effect model. Systems Thinking, on the other hand, helps us to keep the complexity of the domain in tact and advocates the Synthesis Process. Concepts of Systems Thinking enable us to consider the needs and constraints of all stakeholders in the system and prevent us from making pre-empted judgements. They guide us to see beyond discrete events, beyond trends and discover the underlying structures. As a result the quality of our decision making process improves.

Mr. R. Narayanan & Dr S Neethi of Tata Consultancy Services conducted this half-day seminar on the subject using simple everyday life situations such as Traffic Control problems in metros. The program was attended by over 80 professionals and received "great" feedback from the participants.

Ms. S. Meera, Chairperson, IEEE GOLD of Kerala Section co-ordinated the activities of the Seminar.

Mr. R. Narayanan, Vice-Chairman of IEEE Kerala Section addressing the audience

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EMBESY 2001-Annual Seminar of IEEE Kerala Section

Theme:
Embedded Systems
Venue:
Technopark, Trivandrum Date: 18th August 2001
Delegate fee :
IEEE members - Rs 750
Non members - Rs 1000
IEEE student members - Rs 250
Other students - Rs 400

For details contact :

Mr V.J.Jayakumar Chairman, Organising Committee, EMBESY-2001
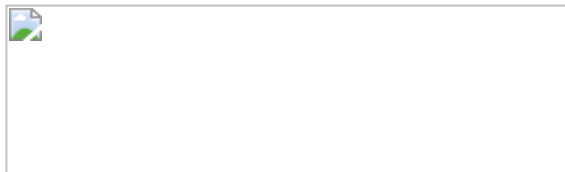at vjjayakumar@yahoo.com
or
Mr Sasi PM Secretary Organising Committee at sasipm@erdcitvm.org.

IEEE ACE 2001

27th Annual Convention and Exhibition of IEEE India Council

Convergence

Semiconductors, Power, Information Technology, Communications and Entertainment 1 - 3 November 2001. New Delhi
Venue :
INDIA HABITAT CENTRE New Delhi - 110 003
Dead lines:
Proposal for
Tutorials:
31 July 2001 Abstract of Technical
Papers:
31 July 2001
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(For details please see May Issue)

Dependence on State

'Just as we do not need help in order to breath, nor do we hold meetings at the Town hall for our blood circulation, similarly, in the past, the samaj looked after its own needs….It did not have to depend on the state'

- Rabindranath Tagore

Membership Matters

LET US HAVE MORE SENIOR MEMBERS

In December 31, 1986, worldwide IEEE had 2,34,817 Higher Grade (HG) members and of them 23,704 ie. 10.1% were Senior Members(SMs). In the same period, Sections in India had 1899 HG members, with 313 ie. 16.5% as SMs, well above the world average.

15 years later, as on Dec. 31, 2000, worldwide there were 3,07,815 HG members, with 26,394 ie. 8.6% SMs. Sections in India who had 10,740 HG members in this period,

had 594 SMs representing just 5.5%, far below world average.

A comparative analysis of SM grade members in the 10 Sections in India should cause concern

Section	SMS as a 31.12.1986	% of HG Strength 31.12.2000
Bangalore	18	-
Bombay	16.7	3.7
Calcutta	19.8	5.6
Delhi	22.5	9.1
Gujarat	19.7(SS)	4.0
Hyderabad	11.3	3
Kerala	7.4	7.2
Kharagpur	22.5	27.2
Madras	14.8	2.8
Uttar Pradesh	12.5(SS)	8.4
ALL India	**16.5%**	**5.5%**

Nominating Senior Members is a task every Section and Society should be eager to do. Why? Because it recognises worthy members, enhances the image of IEEE in the profession, gives recognition to employers for having highly qualified professional staff, improves membership retention, and encourages IEEE volunteerism. Let us look more into this in next bulletin.

H.Kalayanasundaram

Editorial Board

Er. N. T. Nair Editor
Prof. V. K. Damodaran Member
Er. J. Muraleemohan Lal Member

"We, the members of the IEEE … do hereby… agree to improve the understanding of technology, its appropriate application, and potential consequences"

- IEEE Code of Ethics

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News - Scan

Indian Software Exports - Impressive Figures

NASSCOM has released the details of the excellent performance of Indian software sector for the year 2000-2001.

Some highlights:

- Total software exports - Rs 28,350 crore ($6.2 billion)
- This amounts to a growth of 65% in rupee terms over the previous year.
- Overall IT software & services industry clocked Rs 37,760 crore ($8.3 billion) with 55% growth over the figure of Rs 24,350 crore of 1999-2000
- Domestic market for software was Rs 9,410 crore
- TCS topped the list of software exporters with a figure of Rs 2870 crore
- Infosys - Rs 1,853 crore, Wipro - Rs 1,756 crore, Satyam - Rs 1,241 crore, HCL-1,127 crore

- Cognizant, Silverline, NIIT, Pentasoft and Pentamedia filled the next 5 slots in the top 10 exporters category.
- Software and services exports accounted for 14% of India's total exports of $44 billion l

- Geographic spread of software exports:

  - USA - 62 %
  - Europe - 24%
  - Japan - 4%
  - Others - 10%

Fuel Cells for non-automotive uses

The automobile major, General Motors, is seriously considering of using fuel cells outside their core area, as well, as per company officials. Fuel cells use an electrochemical process to create electricity by mixing hydrogen and oxygen, with distilled water as the only by-product, avoiding greenhouse gases and smog that other power sources emit. In future, fuel cells are expected to power everything from homes and businesses to cars and laptop computers. The auto industry, under pressure from environmentalists and regulatory authorities to improve fuel economy and reduce pollution, sees fuel cells as the answer to their problems.

GM has 170 people working in fuel cells area in its R&D Centre in New York.

Little Boy or a Big Bomb

"Little Boy" is the nickname given to the atomic bomb dropped on Hiroshima on August 6, 1945. It was Monday morning. Little Boy was dropped from the Enola Gay, one of the B-29 bombers that flew over Hiroshima on that day. After being released, it took about a minute for Little Boy to reach the point of explosion. Little Boy exploded at approximately 8:15 a.m. (Japan Standard Time) when it reached an altitude of 2,000 ft above the building that is today called the "A-Bomb Dome."

'Speak when you are angry and you will make the best speech you will ever regret'

- Ambrose Bierce

Company Slogans

" Better things for better living, through chemistry"

- Du Pont, USA (Chemicals)

" We keep your promises"

- DHL, USA (Couriers)

" When it absolutely, positively has to be there on time"

-Federal Express, USA (Couriers)

" Everything we do is driven by you"

- Ford Motor Co, USA

" Progress with distinction"

- Honda Motor Co, Japan

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IEEE MADRAS SECTION

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EDITOR'S DESK

'Do more with less'

In energy forums, one topic often coming up for discussions is the vast difference in per capita energy consumption existing among the nations. While USA has a per capita consumption well above 12,000 units of electricity per year, India stands at around 300 units. For increased economic activity, of course, electricity is a key ingredient. But, that does not mean that every nation should strive hard to catch up with the consumption levels of developed countries like USA, Canada, Japan etc, as it will only lead to a more polluted world, for obvious reasons connected with power generation. Instead, countries like India with a very large population, should focus more on efficient utlisation of available power. Energy conservation assumes significance here. Gadgets that do the same job with less power, lamps giving out more light, transformers and motors that
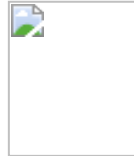
are more efficient etc should be coming out of our manufacturing plants. Energy wastage rampant in various sectors of human activity today should be curbed , as well.

The first step towards this would be a nationwide drive to create an awareness among the various sections of society. Professional societies like IEEE could play a significant role in this context, taking cue from some NGOs already working in the field. Our knowledge of electro-technology would come handy in our efforts to carry the message to masses, to whom we are deeply indebted as engineers.

Perhaps, as a nation, we could even set an example to developed countries, who, of late, have started thinking about energy conservation, on seeing the perils of un-controlled energy usage.

Trivandrum
01 July 2001

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Your feedback is important!

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This electronic version of the IEEE India Bulletin is an adaptation of the official, printed newsletter. This adaptation has required some minor modifications and restructuring of the original text, to suit its viewing as a webpage.

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