



# THE INSTITUTION OF ELECTRONICS AND TELECOMMUNICATION ENGINEERS

## Newsletter

Vol 1, No 3

September 1992

### FROM PRESIDENT'S DESK

Greetings and good wishes to all our members. Our Institution is now in its 40th year. Although we have come a long way in these four decades and can rightly claim to be India's apex body of electronics and telecommunication engineers, our effectiveness and visibility seem to be limited. This is a cause for concern. Considering this, the new opportunities now opening up, viz., liberalized industrial environment, increasing investments in R & D and industry, and the growing need of trained personnel in many areas and the existing educational, scientific, technical and industrial infrastructure in the Country, we are now reviewing our activities and programmes. Membership drive/services, academic & distance education programmes, industrial interactions, technical activities, publications, national/international cooperation are some of the areas now engaging the attention of our Council in this review. I would be happy to receive from our members at an early date, comments/suggestions/action plans on these and other areas. I hope our collective wisdom will enable us to initiate suitable steps to strengthen our institution..

Bangalore

B.S. Sonde  
President

In all there were 5 Technical Sessions spread over two days, on 'Technology and R&D', 'Production & Quality Control', 'Services', 'Opportunities and Challenges to Industry' and 'Exports and Globalisation'. These sessions were addressed by expert speakers. The sessions were followed by a Panel Discussion and a Valedictory Session. The Chief Guest at the Valedictory Session was Hon'ble Shri P R Kumaramangalam, Minister for Science and Technology, Ocean Development & Electronics, Govt of India. The main views expressed were as follows:

- The basic telecommunication and value added services needed to be improved;
- The Indian telecommunication Industry has to be made more effective both in terms of cost and quality;
- The exports of goods and services should be given greater priority;

### NEWS FROM HEADQUARTERS

#### 35th Annual Technical Convention

The 35th Annual Technical Convention of The Institution of Electronics and Telecommunication Engineers on 'Emerging Scenario in Electronics & Telecommunications in the year 2000 AD' was held at the Seminar Hall of IIT, Delhi on 5 & 6 Sept 1992. The Convention was inaugurated by Admiral L Ramdas, Chief of the Naval Staff. Prof B S Sonde, the new President of IETE, delivered the Presidential Address. On this occasion the 24th Bhabha Memorial Lecture on "Challenges and Achievements of ISRO Satellite Mission" was delivered by Dr. K. Kasturirangan of ISRO Satellite Centre, Bangalore. The 15th Ram Lal Wadhwa Memorial Lecture was delivered by Prof L

M Patnaik of IISc, Bangalore on 'Trends in Parallel Processing'.



- The R&D effort should not be overshadowed in the liberalized environment that made import of technology an easier proposition;
- The need for a better management of human resource development strategy was emphasized;
- To meet the telecommunication demands of the country in the future, the govt would have to make appropriate policy decisions;
- The Govt must ensure that decision to opt for a particular technology as best suited to meet the required technological demand, is adopted smoothly and that the existing infrastructure would be in a position to absorb the accompanying changes without difficulty. While privatization in the telecommunication equipment manufacture was already on, a total handover of the telecommunication services to the private sector would not be logical at this point of time, it could however be considered eventually, as a gradual process.

#### Exhibition on Microwave and Communications

An exhibition on 'Microwaves and Communications' was held at the Exhibition Hall, IIT, Delhi from 5-7, Sep' 92 to coincide with the 35th Technical Convention of IETE. The exhibition was inaugurated by Chief Guest Admiral L Ramdas.

Twelve exhibitors displayed their products. The exhibitors included participants from both public and private organisations and Academic Institutions. Prizes were awarded to Directorate of Co-ordination Police Wireless, Electronics Regional Testing Laboratory (North) and Pearl Telecommunication and Electronics (P) Ltd for good display. The exhibition was seen by more than 5,000 persons.

#### Tutorial on Microwave Integrated Circuit

A one-day tutorial on 'Microwave Integrated Circuits' was held on 4 Sep' 92 as part of the programme of the Technical Convention of IETE. The tutorial was held at the CARE Seminar Room of IIT. Prof

(Ms) Bharathi Bhat, Head, CARE was the Course Director and was assisted by Prof S K Koul in conducting the tutorial.

A total of 18 participants from different organisations attended the tutorial. The lectures were highly appreciated and the participants were quite interactive during the tutorial.

The participants were presented a book entitled 'Stripline-Like Transmission for Microwave Integrated Circuits' and a certificate for attending the tutorial by Prof S C Dutta Roy of IIT, Delhi.

#### Office Bearers of IETE (1992-93)

The following were elected as Office Bearers of IETE Council (1992-93):

- Vice-Presidents:* (i) Birg S V S Chowdhry  
(ii) Prof J Das  
(iii) Smt Lakshmi G Menon

*Honorary Treasurer:* Shri P P Malhotra

#### New Committees of IETE Council (1992-93)

As the number of IETE Council Committees were considered too large, they have been reorganised into the following six committees:

1. Academic & Distance Education Committee (ADEC) with Chairman Prof J Das and Co-Chairman Dr N Seshagiri.
2. Finance & Policy Planning Committee (FPPC) with Chairman Prof B S Sonde and Co-Chairman Prof P V Indiresan.
3. Membership & Local Centres Committee (MLCC) with Chairman Brig S V S Chowdhry and Co-Chairman Maj Gen J C Ahluwalia.
4. National Programmes Advisory Committee (NPAC) with Chairman Lt Gen S G Mookerjee and Co-Chairman Prof V Sinha.
5. Publications & Annual Awards Committee (PAAC) with Chairman Shri M Madan Mohan and Co-Chairman Cdr (Dr) H S Sharma.
6. Technical & Industrial Programmes Committee (TIPC) with Chairman Mrs Lakshmi G Menon and Co-Chairman Shri M C Agarwal.

#### Local Centre Elections

Names of Chairmen & Hony Secretaries at Hyderabad, Jabalpur, Delhi, Trivandrum and Bhubaneswar Local Centres elected are:

- Prof C V S Rao & Shri K Laxminarayana  
Shri CP Saxena & Shri Gyan Prakash Sharma  
Shri S C Tewari & Wg-Cdr B R Chawla  
Dr V P Kulkarni & N Haridasan  
Shri M G Jilani & Dr R S Rohella.

#### Recognitions

Shri Maneesh Gogia, AMIETE, has secured 83rd rank in the Engineering Services Examination 1991.

#### Industrial Coordination Committee Meeting:

Under the auspices of Industrial Coordination Committee of IETE, a meeting of the Council Members and a number of Sustaining Donor Members was organised on 13th June 1992 at Bangalore, with Shri P S Deodhar as Chairman. Mrs. Vinutha R N Guru was the Convenor of the meeting. It was recommended that IETE should assist electronic and telecommunications industry. The following suggestions emerged during that meeting:

- (a) Corporate Members directory should have separate pages showing expertise of Corporate members for possible utilisation by Electronics and Telecommunication industry for consultancy.
- (b) A Technical information Cell for industry be established at Banaglore Centre.
- (c) A Library with catalogue and a Data Bank of Electronics and Telecommunication products and technologies be established at Bangalore Centre.

#### PERSONALIA



Shri Ratan N Tata, a leading industrialist of our country, and Chairman NELCO has been conferred Honorary Fellowship of IETE on

05.9.92 at the 35th Annual Technical Convention in New Delhi. He was born in 1937 and graduated from Cornell University with a degree in Architectural Engineering. He worked in Architectural Structural Engineering firm in USA for about 3 years. Later he attended the AMP at the Harvard Business School in USA. After returning to India, he joined Tatas in Jamshedpur and started working on the shop floor in Tata Engineering and Tata Steel. Later he took charge of the group electronic company NELCO. He is presently on the boards of the following major companies:

- As Chairman of Tata Sons Limited, Tata Industries Limited, Tata Engineering & Locomotive Company Limited, The National Radio & Electronics Company Limited, Tata Honeywell Limited and Hitech Drilling Services India Limited.

- As Deputy Chairman of Tata Iron & Steel Company Limited and Tata Electric Company Limited.

- As Vice Chairman of Tata Chemicals Limited.

- On the Board of The India Growth Fund Inc, Tata International A G, Pallas Invest S A, The Tata Oil Mills Company Limited, Tata Tea Limited, Bombay Dyeing & Manufacturing Company Limited, The Indian Hotels Company Limited and The Industrial Credit & Investment Corporation of India Limited.

- He has also served as Chairman of Air-India from 1986-89.

He is a Member of the Business Council for Sustainable Development, International Scientific Council for Science and Technology Policy Development of UNESCO, International Council of the Prince of Wales Business Leaders Forum, International Advisory Committee of the Chase Bank and the IBM Asia Pacific Board.

He is keenly interested in aviation and is a holder of a multi-engine rating pilot's licence. He has keen interest in scuba diving and golf.

### Distinctions



Col. (Dr) G.K. Deb, Fellow of the Institution of Electronics and Telecommunication Engineers

(FIETE) and Director Electronics Research and Development Centre, Calcutta has received the prestigious International EMC Award of the IEEE Electromagnetic Compatibility Society of USA for his untiring and dedicated effort to the International exchange of EMC Technology.

### IETE AWARD WINNERS

The following received the IETE Awards during the Annual 35th Technical convention of the Institution on 5.9.92 at IIT New Delhi:

- Prof L M Patnaik of IISc, Bangalore-15th Ram Lal Wadhwa Gold Medal Award.

- Shri K Nagachenchaiah of Space Application Centre, Ahmedabad-4th Hari Ramji Toshniwal Gold Medal Award.

- Shri B L Agarwal of ISRO Satellite Centre, Bangalore-8th Bimal Bose Award in 'Power Electronics'

- Dr Surendra Prasad of IIT, Delhi & Shri PVA Narasimham of Telecommunication Training Centre, Dept of Telecom, New Delhi-S K Mitra Memorial Award.

- Dr Subrat Kar & Shri A Selvarajan of IISc, Bangalore - J C Bose Memorial Award.

- Shri V C Misra & Shri Ram Pal of Defence Electronics Research Lab, Hyderabad-M N Saha Memorial Award.

- Shri P Nageshwara Rao of SHAR, Sri Harikota & Shri R C Pande of Research & Development Establishment, Dehradun-K S Krishnan Memorial Award.

- Shri T Vishwamitra formerly with the R & D Centre of Motwane Pvt Ltd at Bangalore and now with CW Thompson Co Inc, USA - CDIL Award (For Industry).

- Dr B K Das, Dr P Singh, Dr S N Singh of National Physical Lab, New Delhi & Dr S C Jain, Visiting Prof, KU (IMEC) Leuvan, Belgium - Gowri Memorial Award.

- Shri N Prabhakar Kudva & Shri Suresh Kumar of Regional Engineering College, Calicut-Students' Journal Award.

- Sh J S Raju of STQC who has won the Lal C Verman Award will receive it at the

mid-term Symposium which will be held at Ahmedabad from 16-17 January 1993.

### Studentship Awards

#### AMIETE

- Km P Ambica - Subrahmania Thyagaraja Prize for June '91 Examination.

- Shri D S S Prasad-Subrahmania Thyagaraja Prize for Dec '91 Examination.

- Shri S G Joshi - Council Prize for June '91 Examination.

- Shri M H Kalkar - Council Prize for Dec '91 Examination.

#### DIPIETE

- Shri Deepak Prasad-Council Prize I for June '91 Examination.

- Shri Piaray Lal-Council Prize I for Dec '91 Examination.

- Shri Mahesh Prasad-Studentship Award for Dec '91 Examination.

- Shri Katkar Nitin S. - Council Prize II for June '91 Examination.

### CURRENT ISSUES

#### Workshop on 'Indian Telegraphs Act 1885'

A workshop on Indian Telegraphs Act 1885 was organised by IETE at Delton Hall, New Delhi on 18th July, 1992. The purpose of this workshop was to elicit the opinions and views of a cross section of persons for possible amendments to the old & obsolete existing Indian Telegraph Act. The workshop was attended by about 200 delegates. The expert speakers included Shri Ram Niwas Mirdha, Dr S Z Qasim, Shri N Vittal, Dr Amit Mitra, Dr M B Athreya, Dr N Bhaskara Rao, Brig S C Sharma, Shri D N Nanda, Shri S R Jiwrajaka, Shri S M Agarwal & Shri D K Sangal. Shri T H Chowdary, the convenor of this workshop traced the history of the existing Indian Telegraphs Act and informed that a committee has been constituted by the Ministry of Communication to suggest amendments to the Act. The existing Act is to be amended and a new law to be enacted in this year itself.

The significant views expressed at this workshop were as follows:

(i) The existing 'Indian Telegraphs Act, 1885' has become obsolete due to passage of time and rapid changes in technology in recent years. Therefore, the Act needs to be changed or amended thoroughly.

(ii) The new or amended Act should have a preamble stating clearly the objectives.

(iii) Should incorporate simple procedures for change of rules, whenever necessary. There should be a feedback system to indicate that changes in the rules have become necessary.

(iv) Should give total responsibility and authority with accountability to someone for implementation of the rules and provisions of the Act.

(v) Should have an independent regulatory body to oversee the implementation of the Act.

(vi) Should make a provision to give respect to the 'Consumer' which he deserves. There must be a system in which the consumer must feel that he is being looked after very well.

(vii) Should make a provision that there have to be multiple providers of telecom services to encourage a competitive system

and avoid monopoly.

(viii) Any person willing to come forward to provide telecom services should have an easy entry into the system.

## TECHNICAL NEWS

### Desktop Video Revolution

If a picture is worth thousand words, desktop video is worth thousand pictures. Instead of writing out how things work, it can be shown and demonstrated on a computer screen with a short video clip. Just as DTP revolution made the merging of texts and graphics a reality, so too desktop video may change the ways we communicate by adding movement and sound. The day will come when an electronic edition of section newsletters will be distributed over fibre optic phone lines with embedded video clips and sonic examples from the meeting. In fact the current generation of word processors (for both Macintosh and Windows) is beginning to include the ability to play back short video clips.

Desktop video systems basically display a television signal in a window on a computer screen. The video signal could be from a broadcast source, a camera, VCR, laser disc player, or a computer

network. Application for desktop video include interactive training, executive information systems, teleconferencing systems and multimedia entertaining systems.

### BHEL sets up Nationwide Satellite link

Bharat Heavy Electricals Limited (BHEL) has set up a countrywide satellite based communication system 'BHELNET' linking all its manufacturing units, sites, regional offices and Delhi based corporate offices.

The services and facilities available on BHELNET include interactive messaging through computer, computer to computer file transfer, transfer of business documents access to international databases, electronic data interchange, transfer of technology and information exchange, remote computing resources like high speed printer and remote execution of jobs.

All these value added services on the BHELNET involving development of specific problem related networking software, has been developed and implemented in house. BHELNET operates through the communication satellite and microearth stations set up at each site.

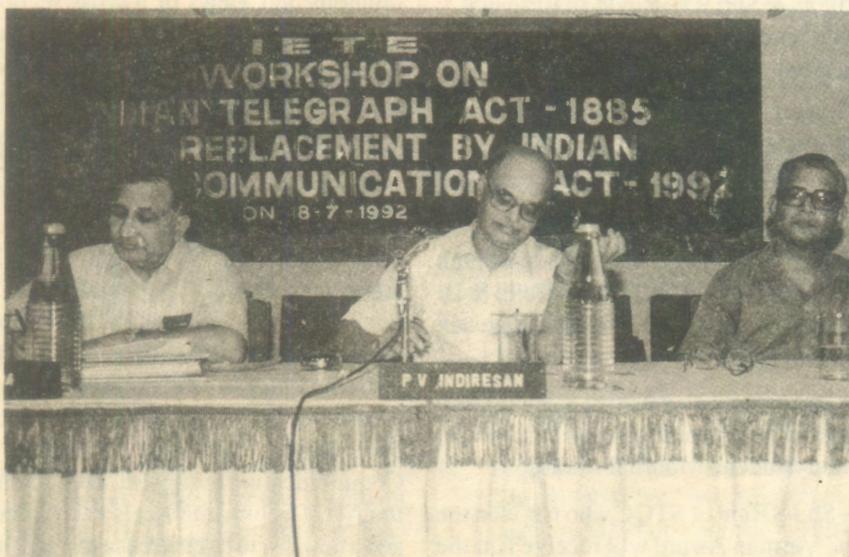
### National Approach for Training-Computer Personnel-'NACT'

The role of Information Technology (IT) cannot be over emphasized. The use of IT is critically dependent on the availability of trained computer personnel. The National Association for Computer Trainers (NACT) was formed during last one year to reduce the gap between the projected man power needs and the availability of the personnel. One of the concern of NACT has been to match its training with the software needs of the computer industry. Further the procurement of low cost training software has been the allied issue.

The dearth of qualified professional faculty is a serious problem according to NACT. This is especially true for specialized training to develop frontline software which can be used globally. Joint effort of NACT, NASSCOM, DOE, CSI is needed to alleviate the situation.

### Excellence in Export Award

Bharat Electronics (Sustaining Donor Member of IETE) has been awarded the



top award of shield for Excellence in Export during 1990-91 by the Electronics and Computer Software Export Promotion Council.

The Award was presented by Minister of State for Science and Technology Mr P.R. Kumaramangalam at a function in New Delhi on September 5.

Bharat Electronics was also awarded the certificate of Merit for its Export performance in 1988-89 by the Ministry of Commerce.

The Company identified international marketing as a thrust area about four years ago following the Government's decision to permit Defence Public Sector Units to operate in the export market. During these four years, the Company has gradually stepped up export turnover. In 1990-91, the export was Rs 80 million. The target for the current year is Rs 170 million.

The export portfolio includes a wide range of products for Defence Communication, Telecommunication, Radar Sub-assemblies, Semiconductors and Electron Tubes to 12 different countries in Western Europe, West Asia, South East Asia and North America.

### INTERNATIONAL NEWS

ITU & Lynx Technologies are to provide dial access to a database of global telecommunication services.

The ITU and Lynx Technologies Inc, have entered into a joint initiative under which LYNX has licensed the ITU to provide dial access to a database of global telecommunication services and tariff information.

Under the concluded agreement LYNX will provide the ITU with a copy of its global database of services and tariff information which the ITU will place on a database server at its headquarters in Geneva, Switzerland. The ITU has designed and programmed a system for access and use of the database at a special annual cost. The database will be updated by LYNX on a monthly basis.

The ITU has a broad range of other information services which it presently provides to participants in ITU activities.

The addition of the new dial access database service is a continuation of this effort.

Lynx Technologies Inc is a privately owned company with headquarters in Little Falls, New Jersey, USA that specializes in the design, implementation and operation of international telecommunication networks for multinational companies.

### New Members of ITU

The republic of Slovenia (formerly part of Yugoslavia) became the 170th Member of the International Telecommunication Union. Armenia & Uzbekistan (former USSR republics) have become the 171st and 172nd Member of the ITU.

### CONTINUING EDUCATION NEWS

CDE conducted its experimental programme in Continuing Distance Education Programme through the Satellite INSAT-2A between 24 Aug '92 to 2 Sep '92 between 1800-2030 hrs.

According to the rush reports available, the programme has been well received. On an average about 1000 students viewed the programme on the first two days while between 500 to 800 viewed it on the other days. Appraisal reports from the Researchers and the Coordinators from the Local Centres are awaited. These will be critically examined to improve upon the future programmes.

Two extracts from the remarks made by some viewers is given below:-

*"I was delighted and excited to watch and participate in this distance education experiment. This has immense potential especially to improve the quality of technical education in our country. Thanks to technology, distance is now no bar to access good teachers!"*

*N Vittal  
Secretary, DOE*

*"I am very thankful to all of you for arranging the satellite education programme. I have really found it useful"*

*Sandip Lanje  
(SD-082926)*

All Local Centres of IETE may install the C-Band DRS through their own re-

sources for the benefit of their Corporate and student members to view future programmes. The next programme entitled 'TELEMATICS' is for Corporate Members as well as student members. Details about the programme will be announced subsequently.

SPEAKER	TOPICS
1. Prof MN Faruqui, VC, AMU	Image Coding
2. Prof Surendra Prasad, IIT, Delhi	Low Bit rate Coding Speech
3. Prof A Jhunjunwala, IIT, Madras	Rural Communica- tion System
4. Prof SC Sahrabudhe, IIT, Bombay	Advances in Digital Modulation Techni- ques
5. Prof U Mukherjee, IISc, Bangalore	Computer Commu- nication Protocols

Corporate and student members of IETE may register themselves with their local IETE Centres for attending the programme free of cost. Other interested persons are also welcome.

### ACADEMIC NEWS

Diploma level Examinations of IETE has been recognised by the Government of India, Ministry of H.R.D. with retrospective effect from 1988 vide Government Notification No. E 18-9/89 TD-V dated 5.8.1992.

The Graduateship Examinations (AMIETE) has been fetching recognition from more universities in India and abroad. After the launching of the massive operation for obtaining recognition from all the Universities in India, three more Universities, Andhra University, University of Roorkee and Garhwal University (Srinagar) have since recognised AMIETE.

Our AMIETE graduates have already got admission in the foreign Universities like Oklahoma State University, Still-Water, USA, Arizona State University, Tempe, Arizona-85287, New York, Institute of Technology, New York, USA. for the Post graduate courses. Efforts are being made to get our AMIETE Degree evaluated by the World Educational Services, P.O. Box 745, Old Chelsia Street, New York 10113-0745 which is required for admission to many of the Universities

in America like New Jersey Institute of Technology etc. Steps are also being taken to get our AMIETE Degree evaluated by the Education Evaluators International Inc. P.O. Box 5397, Los Almitos, CA 90721, U.S.A. who assists those who have completed educational studies outside the United States.

The next winter Examinations of IETE, AMIETE, DIPIETE and DOEACC 'C' Level will be conducted for all papers at all our Examination centres from 16th to 23rd December 1992. As per decisions of the National Advisory Committee of the Government of India the DOEACC "B" Level Examinations will be conducted from June 1993 onwards.

Practical Examination has been introduced for DIPIETE with effect from June 1992. Those who complete all the 13 papers of DIPIETE become eligible to appear for this Practical Examination. Those who have completed 12 papers and are appearing for the last paper in an examination will also be permitted to appear in the Practical Test in that examination.

## FORUM

We are thankful to the members for their continued encouragement and words of advice. As indicated earlier members must have noted from the 2nd Issue of the IETE Newsletter that we have been able to expand 'Coverage' and 'Contents' of the newsletter. Consequently the number of pages in the July issue of the newsletter have been increased to eight. This has helped us in giving additional coverage which would provide our members upto date reports on the activities and happenings of the Institution in greater details. Each issue of the newsletter henceforth will be of eight pages.

Forum will continue to look forward to the views and words of wisdom of our distinguished members. We on our part are making best efforts to provide the latest to the members.

Kindly send your views and suggestions on important items to enable us to improve the contents and coverage of the IETE Newsletter.

(Cdr) H S Sharma  
Hony Editor

## OBITUARY



Prof K Sreenivasan, a Distinguished Fellow and a Past President of the Institution passed away on 17th August, 1992. He was born in 1899 and had a distinguished career at IISc Bangalore (1932-45 and 1948-59), and College of Engineering at Guindy, Madras (1945-48). He was an acting Director of IISc, Bangalore from 1955-57 and Director of MIT, Madras from 1960-71. He was President of IETE during 1956-57.

## BIBLIO FILE

Books added in the IETE HQ Library during July-August 92.

1. Circuit Theory, Ashfaq Husain
2. Electric Circuit Theory, V C Natesan
3. Problem in Electrical Engg, P Smith
4. Television and Video, E Trundle
5. Basic Electrical Engg and Electronics, D K Sharma
6. Principles of DC & AC Circuits, G J Angerbauer
7. Solutions and Problems of Control Systems, A K Jairath
8. Fluid Mechanics and Hydraulics, V P Gupta and A Singh

## Computer

1. Programming in C++, P M Chairlian
2. M S-Dos, D A Lieu
3. PASCAL: An Introduction to Methodical Programming, W Findlay & D A Watt
4. Data Structures in PASCAL, E Horowitz & S Sahni

## DONATION

Following members of IETE have donated their Library Security deposit to the IETE

1. Mr A K Shukla 42673-AM
2. Mr A K Tyagi 42625-AM
3. Mr Vikas Sharma 74900-SD

## ANNOUNCEMENT

24th Mid Term Symposium  
Ahmedabad

16-17 Jan 1993

### HIGHLIGHTS

1. Theme "Space Electronics and Communications"
2. Chief Guest H.E. Governor of Gujarat has been requested
3. 20th Vikram Sarabhai Memorial Lecture
4. 8th Lal C Verma Shri J S Raju, DG, STQC Award Lecture
5. Eminent experts in the field of Space Electronics will chair the Technical Sessions and present papers at the Symposia. The Technical sessions will be as follows: Space Electronics in Rockets, Satellites, Defence Communications and Remote Sensing.
6. Panel Discussion & Validictory function—Chief Guest Industry Minister of State Govt of Gujarat has been requested.
7. Registration  
Delegate fee
 

1. Sponsored Delegates	Rs 800/-
2. Sustaining Donor Member	Rs 600/-
3. Individual Corporate Member	Rs 200/-
4. Student Member	Rs 100/-
5. Council Members/Dist Fellow and Corporate Members above 65 years of age.	As Honoured Guest

### 8. Advertisement in Souvenir

#### Advertisement Rates

(Page size 28 cm x 22 cm) Demy Quarto Printed area 24 cm x 18 cm

- |                      |            |
|----------------------|------------|
| 1. Back Cover        | Rs 6000/-* |
| 2. 2nd and 3rd cover | Rs 4000/-* |
| 3. Full Page         | Rs 3000/-* |
| 4. Half Page         | Rs 1,500/- |
| 5. Quarter page      | Rs 800/-   |

\* For colour advertisements Rs 1000/- per colour in addition.

For more details, please write to IETE, HQ and/or to

- 1) Shri O P N Calla, Convenor,  
24th Mid Term Symposium, IETE  
Dy Director, Satellite Communication Area  
Space Application Centre (ISRO)  
Ahmedabad-380053  
Phone : 0272-44180, Telex : 0121-6321 & 6239,  
Gram : Space & Antarix
- 2) Brig K Balasubramanian  
Co-Convenor, 24 Mid Term Symposium  
Managing Director, Tata Telecom Ltd,  
E1/1 GIDC, Electronics Estate,  
Gandhi Nagar 382 028  
Phone(s) : (02712) 21773, 21774, 23345 Telex :  
01203-231/240 TTLG IN; Fax : (02712)-24897.

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REFERENCE SPECIFICATION	:	MANUFACTURED IN ACCORDANCE TO INDIAN & INTERNATIONAL STANDARDS AND TAILOR MADE TO CUSTOMERS' SPECIFICATION
APPROVAL AUTHORITIES	:	LCSO, DOT, C-DOT, ITI, RDSO, BIS ETC.

## CALENDAR OF EVENTS

Subjects	Dates	Venue	Contact
Signals, Data, Systems, Multiconference India 92, Methodologies & Examples	7-9 Dec 1992	Calcutta	AMSE, 16 Av Grange Blanche, 69160 Tassin-la-Demi-Lune, France-Fax (33) 78345417
Computer Networking Present Status-Future Goals	10-11 Dec 1992	Ahmedabad	Prof A K Aggarwal, Chairman, IEEE Computer Society Gujarat, Rollwala Computer Centre, Gujarat University, Ahmedabad 380 009.
FST and TCS 12-Twelfth Conf on the Foundations of Software Technology and Theoretical Computer Science	18-20 Dec 1992	New Delhi	Prof R K Shyamsunder, FST & TCS 12 TIFR, Bombay-400 005.
INSULEC-93 - 4th International Seminar on Electrical & Electronic Insulating Materials & Systems	15-16 Jan 1993	New Delhi	Indian Electrical & Electronics Manufacturers' Association, 501, Kakad Chambers, 132, Dr Annie Besant Road, Worli, Bombay-400 018.
IETE 24th Mid-Term Symposium on 'Space Electronics'	16-17 Jan 1993	Ahmedabad	Shri O.P.N. Calla, Dy Director, Satellite Communication Area, SAC, Ahmedabad
PTC 1993, the fifteenth annual Pacific Telecommunications Conference	17-20 Jan 1993	Honolulu, Hawaii, USA	PTC, 2454 S Beretania Street, Suite 302, Honolulu, Hawaii 96826, USA.
AES 94th Convention	16-19 Mar 1993	Berlin	Prof Ernest-Jo Voelke, Institut fuer Akustik und Bauphysik, Kiesweg 22, D-6370, Oberursel 6, Germany.
National Seminar on Computer Processing of Hindi Language (COMPHIL-93)	10-11 Apr 1993	Allahabad	Dr Gulab Singh, Convenor COMPHIL-93 The Instn of Engineers (India), Allahabad Local Centre, Teliarganj, Allahabad 211 004.
4th Intl Symp on Recent Advances in Microwave Technology (ISRAMT '93)	15-18 Dec 1993	New Delhi & Agra	Prof Banmali Rawat, Dept of EE, University of Nevada, Reno, Nevada 89557-0153, USA; Or Prof Bharathi Bhat, CARE, Indian Institute of Technology, New Delhi 110 016.

## EMPLOYMENT

### Indian Institute of Technology Delhi, Advertisement No. 6/92

Applications are invited from senior specialists with experience in practical applications of signal processing for the post of **Professor, Bharat Electronics Professorial Chair in the Centre for Applied Research in Electronics** of the Institute in the pay scale of Rs. 5100-150-5700-200-7300. The appointment will be made on a contract basis.

Applicants must have Ph.D. in Electrical/Communication/Electronic Engineering with excellent academic record and at least 12 years of research experience, high quality research publications and evidence of capability for applied research. The Institute is looking for a dynamic individual who can interact with outside agencies for sponsored project and who can provide leadership in hardware oriented research in the above areas.

Applications with biodata including three references should be sent to the Superintendent, Establishment-1 Section, Indian Institute of Technology, Hauz Khas, New Delhi, 110016. **by 26 November 1992.**