

BIO-DATA

NAME **VISHWANATH SINHA**

PRESENT DESIGNATION Professor of Electrical Engineering

MAILING ADDRESS Indian Institute of Technology
KANPUR – 208016, INDIA
e-mail: vsinha@iitk.ac.in, vsinha@iitk.ernet.in

DATE OF BIRTH January 7, 1943

TELEPHONES 0 - 512 - 590663/598457 (Residence)
0 - 512 - 597337 (Office)
(Area code) (Telephone numbers)

FAX 0512 - 590063

ACADEMIC QUALIFICATIONS

D.Sc. (Electrical Engineering), 1971
Faculty of Electrotechniques
University of Ljubljana,
Slovenia (erstwhile Yugoslavia)

M.S. (Electronics), 1969
Faculty of Electrotechniques
University of Ljubljana,
Slovenia (erstwhile Yugoslavia)

B.Sc. Engineering (Telecommunications), 1963
Bihar Institute of Technology, Sindri
Ranchi University, Bihar

TENURED EMPLOYMENT DETAILS

Professor, 1982 – continuing
Department of Electrical Engineering
Indian Institute of Technology, Kanpur

Assistant Professor, 1971-1982
Indian Institute of Technology, Kanpur

Assistant Professor, 1964-1971
Bhagalpur College of Engineering, Bihar

Lecturer, 1963 – 1964
Bhagalpur College of Engineering, Bihar

VISITING EMPLOYMENT DETAILS

2002 May – July
Guest Professor

Communication Networks (COMNETS),
RWTH-Aachen University of Technology, Aachen,
Germany

2000 Summer
Visiting Professor (Academic Guest)
Swiss Federal Institute of Technology (EPFL)
Lausanne, Switzerland

1999 Summer
Communication Networks (COMNETS),
RWTH-Aachen University of Technology, Aachen,
Germany

1999 Winter & Summer
Mobile Communications Laboratory
Swiss Federal Institute of Technology, Lausanne,
Switzerland

1998 Summer
Communication Networks (COMNETS),
RWTH-Aachen University of Technology, Aachen,
Germany

1987 Summer
Dept. of Electrical & Computer Engg.
University of Puerto Rico, Mayaguez
Puerto Rico 00708, U.S.A.

1984 – 1985
Dept. of Electrical & Computer Engg.
University of Puerto Rico, Mayaguez
Puerto Rico 00708, U.S.A.

1983 – 1984
INPE – Brazilian Space Research Institute
Sao Jose dos Campos - SP, Brazil

1977 Summer
Indian Space Research Organization (ISRO)
Space Applications Centre, Ahmedabad, India

1968/69 – 1971
Institute (Nuclear) Jozef Stefan,
Ljubljana, Yugoslavia (now Slovenia)

PRESENT AREAS OF

Mobile Communications

INTEREST

Telematics
 Error Control Coding
 Satellite Communications
 Technical Education

MEMBERSHIP OF PROFESSIONAL SOCIETIES

Fellow, Institution of Electronics & Telecommunication Engineers (India) (FIETE)

Fellow, Institution of Engineers, India (FIE)

Senior Member, Institute of Electrical and Electronics Engineers, U.S.A.(SMIEEE)

Life Member, Indian Society for Technical Education

Member, Telematics Forum

AWARDS

Distinguished Alumnus Award of Bihar Institute of Technology Sindri

Best Paper Award 1985 (for a two-part paper), Students Journal of IETE (April, July 1985).

J.C. Bose memorial Award 1979 of IETE for the best Paper published in April, 1979

S.K. Mitra Memorial Award 1976 of IETE for the paper published in July 1976.

*RESEARCH ACTIVITIES***At Indian Institute of Technology, Kanpur**

- **PRESENT AREAS OF ACTIVITIES**

- * Mobile Communication Studies
- * Error Control Coding
- * Teleteaching

- **SOME NOTABLE CONTRIBUTIONS**

Developed 'Remote Tutor'; a product which establishes a Virtual University and provides on-line interactive teaching tool.

National Coordinator, National Project on Telematics being run at the five IITs and IISc since 1992

Visit <http://www.iitk.ernet.in/telematics/index.html>

for the activities under the Telematics Project

Project Coordinator for the Project on TELEMATICS
1987 - continuing; (sponsored by Dept. of Human
Resource Development; Government of India /AICTE)

Project Coordinator for the GIST (Graphics and
Indian Script Terminal) Project, 1985-1987;
(sponsored by Dept. of Electronics, Government of
India);

Worked as a member of the Advanced Centre for
Electronic Systems (ACES), 1971-1983.

Had been involved in projects on:

Military Communication Satellite Systems
Digital Communication via tropo
Digital Modems for tropo links
Phased Array Radiating Systems

At Brazilian Space Research Institute

Worked as a member of the Division for Systems for
Space Telecommunication. Was involved in projects on:

System studies for R/TM/TC transponders and payload
for space segment for the first Brazilian satellite MECB.

Modulation techniques for various alternative
payloads for data collecting platforms.

Communication system analysis for R/TM/TR
transponder.

GUIDANCE OF THESES

Supervised 36 students.

TEACHING EXPERIENCE: COURSES TAUGHT (LECTURES /TUTORIALS / LABS.)

At Indian Institute of Technology, Kanpur

Graduate Courses:

EE 621 Algebraic Coding Theory *****
EE 622 Communication Theory
EE 623 Detection & Estimation I
EE 624 Information Theory & Coding
EE 625 Satellite Communication*****
EE 626 Data Communication *****

EE 629 Digital Switching
 EE 676 Digital Mobile Radio Systems****

(****: Developed these courses)

Undergraduate Courses:

Esc 102N Introduction to Electronics
 Esc 202 Introduction to Electronic Circuits and
 Instrumentation
 Esc 341 Electrical Science I
 Esc 342 Electrical Science II
 TA 306 Principles of Computation
 EE 421 Principles of Communication
 EE 422 Communication System Engineering
 EE 512 Pulse Techniques

At Brazilian Space Research Institute

Graduate Courses only:

ECO 302 Theory of Communications
 ECO 318 Systems for Space Telecommunication

At University of Puerto Rico, Mayaguez

Graduate Course:

INEL 6010 Statistical Theory of Communication

Undergraduate Courses:

INEL 3105 Electrical Systems Analysis I
 INEL 4075 Fundamentals of Electrical Engineering
 INEL 4085 Fundamentals of Transformers and Electrical
 Machines
 INEL 4102 Electrical Systems Analysis II
 INEL 4301 Theory of Communication
 INEL 5309 Digital Signal Processing

***INTENSIVE COURSES AND
 CONFERENCES ORGANIZED :***

Participants in these courses were Faculty Members from
 Engineering Colleges, working Engineers and Scientists
 from Industries and Defence Laboratories.

More than thirty different courses; some organized at the
 Users' premises.

Also organized many large size conferences like

- IEEE Region-10 '91 TENCON;
- 22nd Midterm Symposium and Exhibition of IETE 1992 ;
- National Conference on Communications, 1996;
- National Symposium on Automotive Electronics, 1997;
- International Symposium on Automotive Electronics & Alternate Energy Vehicles, IIT Kanpur, 1999;
- National Conference on Communications, 2001
- International Symposium on Automotive Electronics & Alternate Energy Vehicles, 2001.

PUBLICATIONS

More than 80 papers published/presented in national/International journals/conferences/seminars.

ADMINISTRATIVE RESPONSIBILITIES

Have been actively involved in numerous Institutional Committees in several capacities. ONLY A FEW MAJOR ONES ARE LISTED BELOW

At Indian Institute of Technology, Kanpur **ACADEMIC/ADMINISTRATIVE ASSIGNMENTS**

- Deputy Director
(August 1992 – October 1998; a Deputy Director for the longest duration in the history of the Institute)
- Head
Department of Electrical Engineering &
Advanced Centre for Electronic Systems
(September 1988-September 1991).
- Chairman, Joint Entrance Examination (JEE) and Undergraduate Admission, 1986-1987 (JEE 1987)
- Principal Coordinator, Quality Improvement Programme, July 1980 – May 1983
- Chairman, Senate Undergraduate Committee (SUGC), 1980
- NSS Programme Coordinator (1978-1980)
- Chairman, Electrical Engineering Association, 1974

ADMINISTRATIVE ASSIGNMENTS

- Chief Vigilance Officer, May 1988 – November, 1991
- Advisor (Administration), May 1982 – May 1983
- Dean of Students' Affairs, May 1980 – December 1981
- Warden/Warden-in-charge 1975-1978
- Institute Standing Committee Member 1974-1976

COMMUNITY ACTIVITY

Convener, Teachers' Forum, 1975-1976

At Brazilian Space Research Institute

Academic Coordinator for the Graduate Programme of the Department, 1983-1984.

OUTSIDE INSTITUTE ACTIVITIES

- Chairman, Publications (1999-2001)
Institution of Electronics & Telecommunication Engineers,
India
: It publishes three Journals :
 - (i) IETE Journal of Research
 - (ii) IETE Technical Review
 - (iii) IETE Journal of Education
- Director, Board of Directors, UPTRON India Ltd.
Lucknow
- Chairman, Board of Directors, UPTEC Computer
Consultancy Ltd., Lucknow; also previously its
Director.
- Member, Council of Electronics Research &
Development Centre (ER & DC), Lucknow
- Member, Finance Committee, University of Roorkee
- Director, Board of Directors BELTRON Mining
Systems Limited, Dhanbad
- Member, R&D Advisory Council Hindustan

Teleprinters Limited, Madras

- Member, Council of the Thapar Institute of Engineering & Technology, Patiala.

PROFESSIONAL SOCIETIES ACTIVITIES

- Council Member, Institution of Electronics & Telecommunication Engineers (IETE) (1992-1995), (1991-1992), (1999-2002)
- Chairman, Institution of Engineers (India), Kanpur Local Centre (1992-1994);
- Member of the UP State Centre of IE(I) (1994-1996)
- Chairman, Institution of Electronics & Telecommunication Engineers (IETE) Kanpur Centre, (1987-1991).
- Member, Executive Committee, IEEE, UP Section, Region 10, 1986- continuing
- Chairman, IEEE UP Sub-section, 1983
- Secretary-cum-Treasurer, IEEE UP Sub-section, 1982.

GUEST EDITOR

Special Issue on Satellite Communication, JIETE, Vol. 36, No. 1, Jan.-Feb. 1990.

EDITOR

- National Conference on Communications, 1995
- National Symposium on Automotive Electronics, 1997
- International Symposium on Automotive Electronics & Alternate Energy Vehicles, 1999;
- National Conference on Communications, 2001
- International Symposium on Automotive Electronics & Alternate Energy Vehicles, 2001.

VISITS ABROAD FOR ACADEMIC ACTIVITIES (during last five years)

2002 - Germany, U.K.
2001 - China, Nepal, Denmark
2000 - Switzerland, Thailand, Germany, Italy
1999 - Germany, Switzerland;
Netherlands, Finland
1998 - Germany; Australia

PUBLICATIONS (DURING LAST FIVE YEARS)

1. 'Improvements in Turbo Decoding', IETE Journal of Research, Vol. 48, No. 6, November – December 2002, (to be published), Bhuwanendra Kumar and Vishwanath Sinha
2. 'Study of Channel Assignment Strategies for Handoff and Initial Access in Mobile Communication Networks; IETE Journal of Research, Vol. 48, No. 1, January-February, 2002; pp 69 – 76; B. Venkateswara Rao and Vishwanath Sinha.
3. 'Sensors in a Mobile Environment (SIME)', National Conference on Communications; I.I.T. Bombay; January 25-27, 2002; pp 423-427; Rahul Garg, Ajit Jain and V. Sinha
4. 'Enhanced FS-ALOHA (E-FS-ALOHA) Algorithm for Contention Resolution in wireless ATM Systems', National Conference on Communications; I.I.T. Bombay; January 25-27, 2002; pp 335-339; Deepak Kumar Sood and Vishwanath Sinha
5. 'Class-based Packet Scheduling Policies for Bluetooth', National Conference on Communications; I.I.T. Bombay; January 25-27, 2002 ; pp 330-334; Vishwanath Sinha and D.Raveendra Babu,
6. Editor, Proceedings of the International Symposium on Automotive Electronics & Alternate Energy Vehicles, November 23 - 25, 2001; IIT Kanpur; Allied Publishers Limited; Vishwanath Sinha and B. K. Karmakar
7. 'Interdisciplinary curriculum for development of a global engineer', a book-chapter under Part VII on "Successful Practice in Engineering Education – educational Concepts" in the book "Educating the Engineer for the 21st Century", Kluwer Academics Publishers, Dordrecht, Netherlands, 2001; V. Sinha
8. 'An international collaborative networked venture for mobile communication studies', a book-chapter under Part VII on "Successful Practice in Engineering Education – educational Concepts" in the book "Educating the Engineer for the 21st Century", Kluwer Academics Publishers, Dordrecht, Netherlands, 2001; V. Sinha and B.H.Walke.
9. 'A virtual classroom and more', a book-chapter under Part VII on "Successful Practice in Engineering Education – educational Concepts" in the book "Educating the Engineer for the 21st Century", Kluwer Academics Publishers, Dordrecht, Netherlands, 2001; V. Sinha

10. 'Resource Allocation in Wideband CDMA Networks for Integrated Voice and Internet Traffic', IETE Journal of Research, Vol. 47, No. 5, September – October 2001; Gaurav Sharma and Vishwanath Sinha.
11. 'Processing Power Requirements for Software Realization of WCDMA (FDD) Downlink in Base Station Systems', 4th International Symposium on Wireless Personal Multimedia Communications (WPMC'01), Aalborg, Denmark; pp 213-218; September 09-12, 2001; Bellam Sasi Kumar and Vishwanath Sinha.
12. 'Modified Algorithms for 3G Security', 4th International Symposium on Wireless Personal Multimedia Communications (WPMC'01), Aalborg, Denmark; pp 1141-1146; September 09-12, 2001; G. Sreelakshmi and Vishwanath Sinha.
13. 'Differentiated Services for Mobile Core Networks', 4th International Symposium on Wireless Personal Multimedia Communications (WPMC'01), Aalborg, Denmark; pp 675-680; September 09-12, 2001; Mirza Shahrukh Baig, Vishwanath Sinha and Peter Stuckmann.
14. 'Supporting Classes of Service in Bluetooth', 4th International Symposium on Wireless Personal Multimedia Communications (WPMC'01), Aalborg, Denmark; pp 1375-1380; September 09-12, 2001; Vishwanath Sinha and D. Raveendra Babu.
15. 'Human Resource Development through Networked Universities: Mobile Communication Studies Centre'; International Conference on Learning and Teaching On-Line : Practices, Challenges and Prospects; Guangzhou, China, January 10 - 12, 2001; <http://LTOL.scnu.edu.cn>.
16. 'Internet and Information Technology Adaptation for Quality Education'; International Conference on Learning and Teaching On-Line : Practices, Challenges and Prospects; Guangzhou, China, January 10 - 12, 2001; <http://LTOL.scnu.edu.cn>; Vivek Mudgil and Vishwanath Sinha
17. 'A Scheme for Download Services for Burst Requests'; National Conference on Communications; I.I.T. Kanpur; January 27-28, 2001; pp 37-41; V. Mudgil and V. Sinha
18. 'Exploitation of Overlapping Coverage Area in Microcellular Communication Systems'; National Conference on Communications; I.I.T. Kanpur; January 27-28, 2001; pp 59-62; Nitin Kumar Gupta and Vishwanath Sinha.
19. 'Throughput Improvement in Cellular Communication Networks'; National Conference on Communications; I.I.T. Kanpur; January 27-28, 2001; pp 63-67; B. Venkateswara Rao and Vishwanath Sinha.
20. 'Specification and Performance Evaluation of Extended HIPERLAN/2 MAC Protocol for use as a Forwarder'; National Conference on Communications; I.I.T. Kanpur; January 27-28, 2001; pp 158-162; H.S. Vandra and Vishwanath Sinha.

21. Editor; Proceedings of the Seventh National Conference on Communications, NCC-2001; IIT Kanpur; January 27-28, 2001; Allied Publishers Limited, 2001; Vishwanath Sinha, Sanjay K. Bose and Ajit K. Chaturvedi.
22. 'Strategies for Resource Allocation in Wideband CDMA Networks for High Data Rate Applications'; 2000 IEEE International Conference on Personal Wireless Communications (ICPWC'2000), Hyderabad, December 17-20, 2000; pp 273-276; Gaurav Sharma and Vishwanath Sinha
23. 'Some Extension to Turbo Decoding for Performance Improvement'; International Conference on Communications, Computers & Devices (ICCCD 2000), I.I.T. Kharagpur, December 14-16, 2000; pp 713-716; Bhuwanendra Kumar and Vishwanath Sinha
24. 'Modified Turbo Codes for Performance Improvements'; Third International Symposium on Wireless Personal Multimedia Communications (WPMC'00); Bangkok, Thailand; November 12-15, 2000; pp 543-547; Bhuwanendra Kumar and Vishwanath Sinha.
25. 'An International Collaborative Networked Venture for Mobile Communication Studies'; 3rd Workshop on Global Engineering Education (GEE'3); Aachen, Germany; October 18 - October 20, 2000; available on the web: <http://www.gee3.de>; Vishwanath Sinha and Bernhard H. Walke
26. 'A Virtual Classroom and More for Global Education'; 3rd Workshop on Global Engineering Education (GEE'3); Aachen, Germany; October 18 - October 20, 2000; available on the web: <http://www.gee3.de>; Vishwanath Sinha.
27. 'Interdisciplinary Curriculum for Development of a Global Engineer'; 3rd Workshop on Global Engineering Education (GEE'3); Aachen, Germany; October 18 - October 20, 2000; available on the web: <http://www.gee3.de>; Vishwanath Sinha.
28. 'Developing Nations' Urgent Need for Communication Connectivity'; Commsphere 2000 International Millennium Conference on Affordable Telecom and IT Solutions for Developing Countries; I.I.T. Madras, Chennai; February 28-March 02, 2000; Published on CD ROM; s 8.2.pdf; Vishwanath Sinha
29. 'Software Radio for Personal Communications Services'; Sixth National Conference on Communications (NCC-2000); New Delhi; January 29-30, 2000; Published by Viva Books Pvt. Ltd.; pp 8-12 ;(*Invited Paper*); Vishwanath Sinha.
30. Editor; International Symposium on Automotive Electronics & Alternate Energy Vehicles, November 19-21, 1999; IIT Kanpur; Allied Publishers Limited; Vishwanath Sinha and B. K. Karmakar
31. 'South ASEAN Region Communications Scenario and Paradigms for Development'; Second International Symposium on Wireless Personal Multimedia Communications (WPMC'99); Amsterdam; September 21-23, 1999; pp 531-534; Vishwanath Sinha

32. 'Innovative Solutions for Communication Connectivity for not so privileged Societies'; IEEE 50th Vehicular Technology Conference; Amsterdam; September 19-22, 1999; Published by IEEE; pp 549-553; Vishwanath Sinha
33. Editor, Proceedings of the National Symposium on Automotive Electronics, October 25-26, 1997; Allied Publishers Ltd; 1997 (alongwith B.K. Karmakar).
34. 'On Writing a Technical Paper'; IETE Journal of Education, Vol. 38, No. 2, April- June, 1997.