

# **BIO – DATA**

**Of**

**Dr. D. K. Gautam**



**Professor and Head  
Department of Electronics,  
North Maharashtra University,  
Post Box No. 80, Umavi Nagar,  
Jalgaon – 425 001 (M. S.)  
INDIA**

# Summary of biodata of Dr. D.K.Gautam,

**Dr. D.K.Gautam** was born in Mathura (U.P.) in 1959. He completed his doctorate degree in VLSI technology from **Central Electronics Engineering Research Institute, Pilani (Raj)** and post doctorate from department of Electronics Engineering, **University of Tokyo(Japan)**. Dr. Gautam is a **Chartered Electronics Engineer** from the **Institute of Electrical Engineers (U.K.)**. He worked as a senior scientist at Central Research Laboratory, Hitachi Ltd., Tokyo (Japan) till 1993 and joined North Maharashtra University, as Reader and Head of the Electronics department in 1994 where he became full Professor in 1999. Dr. Gautam started his laboratory from scratch and established a giant centre of high quality research in the field of semiconductor technology which is known nationally and internationally at present for high quality research. Professor Gautam's laboratory which costs several crores of rupees is the only laboratory among the universities in the country which has got full fledged infrastructure for design, fabrication, and characterization of semiconductor devices and their circuits. Professor Gautam's areas of interest of research are VLSI and optoelectronics technologies. He has completed sponsored projects of more than Rs. 35 crores from various national and international funding agencies and guided 9 Ph.D. thesis. He has more than 150 publications and a number of patents to his credit in national and international journals and proceedings of high repute. Dr. Gautam has delivered several invited talks and key note addresses in national and international conferences of high repute. He is having collaborative research programs with the Department of Electronics Engineering of University of Tokyo, Gunma University, Yokohama National University, University of Duisberg (Germany), CAT (Indore), SAMEER IIT (Mumbai) etc. He is currently Advisor to the foreign student's cell of N. M. University, Jalgaon.

Dr. Gautam was Director, Board of Colleges and University Development, from 2003 to March 2006 of N.M. University. He significantly contributed in enhancing the research standards in the university and fetched a record amount of funding from various funding agencies during his tenure. Dr. Gautam has worked as an expert member of several committees of AICTE, UGC, MIT, DST, DBT, and many universities. He is **Fellow of Institute of Electrical Engineers (U.K.)**, **Fellow and Executive committee member of Optical Society of India**, **Fellow of National Academy of Science**, **Fellow of Institute of Engineering and Technology (U.K.)**, **Distinguished Fellow of International Accreditation Council of Quality Education and Research**. He is in the receipt of MONBHUSO, HIVIPS, and JSPS fellowship awards from Japan. Dr. Gautam's name is cited in the outstanding people of 20<sup>th</sup> century and 100 top scientists of 2008 published from Cambridge (U.K.). He is in the receipt of the International Einstein Award for Scientific Achievements-2009 from IBC Cambridge England. He also can be cited in who is who in the world published by Marcuse (USA). Dr. Gautam is Honorary Director of International Accreditation Council of Quality Education and Research, New Delhi. Prof. Gautam has organized successfully 5 International and many national conferences under his chairmanship. Prof. Gautam is governing board member of several organizations like National Council of Community Services of India, [www.iacqer.com](http://www.iacqer.com), [www.abegaa.com](http://www.abegaa.com), [www.ncebr.com](http://www.ncebr.com), [www.destroycorruption.com](http://www.destroycorruption.com) and manages several social websites sponsored by National Council of community services of India.

Dr. Gautam's games of interest are tennis and horse riding. He loves the management of men and materials and can speak six languages including fluent Japanese.

## **BIO-DATA OF Prof.D.K.Gautam**

### **1) Personal Details:**

- i. Name:** Dinesh Kumar Gautam
- ii. Father's name:** Late Mr. M. L. Gautam
- iii. Date of Birth:** 05/01/1959
- iv. Place of Birth:** Mathura, U.P, India
- v. Designation:** Professor and Head of University P.G Department of Electronics, North Maharashtra university, Jalgaon-425 001 (M.S.)
- vi. Address:**
  - Official:** Professor and Head, Dept. Of Electronics, N. M. University, Jalgaon.
  - Residence:** Plot no:3, layout no: 89/2B, Ramdwar park, Behind Gujral petrol pump, Nimkhedi Shivar, Jalgaon-425001.
- vii. Digital Contacts:**
  - Phone:** +91-257-2257475(Office)  
+91-9326755042(Mob)
  - E-mail:** [dkgautam\\_nmu@hotmail.com](mailto:dkgautam_nmu@hotmail.com)
- viii. Martial Status:** Married & having two grownup children.

### **2) Educational Qualifications: Ph.D., C.Engg.(UK), P.D Engg(Japan), FIEE(U.K.), FOSI, FNASc, FJSPS, FIET(U.K.), Distinguished Fellow IACQER**

#### **a) Brief Synopsis of education:**

Dr. D. K. Gautam holds the first class postgraduate degree with high meritorious academic background. He worked for his Ph.D. degree at Central Electronics Engineering Research Institute (CEERI) Pilani under the guidance of Dr. W. S. Khokle former Director (CEERI) Pilani and obtained the degree from Rajasthan University, Jaipur. He was awarded Mombusho (Japan) fellowship by government of Japan through MHRD government of India to carry his Post Doctoral Research. He worked with the renowned scientist Prof. Kunio Tada of Dept. of Electronics Engineering, University of Tokyo, Japan. Prof. Gautam also completed his degree of Chartered Engineering from Institute of Electrical Engineers (U.K). He is awarded with the prestigious degrees of fellow by several national and international academies and institutions of high repute for his extra-ordinary contributions of research in semiconductor technology.

**b) Languages known:** Hindi, English, Japanese, Marathi, Sanskrit, Telgu, Gujarati, Rajasthani.

**c) Professional Training:**

Sr.	Organization	Period		Details of Training
		From	To	
01	<b>Central Electronics Engineering Research Institute, Pilani</b>	June 1981	June 1988	<p><b>SEMICONDUCTOR DEVICES ON SILICON MATERIAL AND THEIR FABRICATION TECHNIQUES.</b></p> <ol style="list-style-type: none"> <li>1) PRE-TREATMENT OF THE WAFER</li> <li>2) DIFFUSION TECHNIQUES</li> <li>3) CHEMICAL ETCHING</li> <li>4) REACTIVE ION ETCHING</li> <li>5) MASK DESIGNING</li> <li>6) OXIDE GROWTH BY THERMAL CVD</li> <li>7) METAL EVAPORATION AND FORMATION OF SCHOTTKY AND OHMIC CONTACTS.</li> <li>8) MEASUREMENT TECHNIQUES OF HOT ELECTRON EFFECTS IN SHORT CHANNEL MOS DEVICES.</li> </ol>
02	<b>Department of Electronics Engg., University Of Tokyo, Japan</b>	April 1989	April 1991	<p><b>COMPOUND SEMICONDUCTOR DEVICES AND THEIR FABRICATIONS</b></p> <ol style="list-style-type: none"> <li>1) CRYSTAL GROWTH TECHNIQUES by LPE, MBE</li> <li>2) CLOSED TUBE DIFFUSION TECHNIQUES.</li> <li>3) CHEMICAL AND DRY ETCHING</li> <li>4) PECVD GROWTH TECHNIQUES</li> <li>5) RF SPUTTERING</li> <li>6) CAD TECHNIQUES OF OPTOELECTRONICS DEVICES</li> <li>7) FABRICATION TECHNIQUES OF PHOTONIC DEVICES</li> <li>8) MEASUREMENT TECHNIQUES OF OPTOELECTRONICS DEVICES.</li> </ol>
03	<b>Optoelectronics devices fabrication center, CRL Hitachi , Tokyo, Japan</b>	Sept. 1991	Mar. 1993	<p><b>COMPOUND SEMICONDUCTOR DEVICES AND THEIR FABRICATIONS</b></p> <ol style="list-style-type: none"> <li>1) CRYSTAL GROWTH TECHNIQUES USING MOCVD</li> <li>2) COMPUTER AIDED DESIGN TECHNIQUES OF OPTOELECTRONICS DEVICES.</li> <li>3) QUALITY CONTROL OF SEMICONDUCTOR DEVICES IN BATCH PRODUCTION</li> <li>4) PACKAGING OF OPTOELECTRONICS DEVICES</li> <li>5) TRANSFER OF TECHNOLOGY FROM PROTO TYPE TO MASS PRODUCTION</li> <li>6) CAD TECHNIQUES OF PHOTONIC INTEGRATED CIRCUITS</li> <li>7) FABRICATION TECHNIQUES OF PHOTONIC INTEGRATED CIRCUITS</li> <li>8) MEASUREMENT TECHNIQUES OF OPTOELECTRO-NICS DEVICES BEFORE AND AFTER PACKAGING.</li> </ol>

### 3) Professional Recognitions:

- i **Mombusho (Japan) Fellow:** Professor Gautam was awarded Mombusho fellowship jointly by Ministry of Human Resource Development (MHRD) Govt. of India and Govt. of Japan in the year 1988-89 through the open competition and selection. He successfully completed the proposed mission of the two years fellowship at the University of Tokyo, Japan.
- ii **Fellow of Royal Institute of Electrical Engineers (U.K):** For his outstanding contributions in the field of optical switching technology Dr. Gautam was proposed for the fellowship of IEE by Prof.J.N.Nishizawa (Japan) and seconded by Prof. Ghafouri Shiraz (U.K).
- iii **Fellow of Institute of Engineering and Technology (U.K):** The IET's executive council nominated Dr. Gautam as fellow of the institution on the basis of his outstanding contributions in the field of Opto-Electronics technology.
- iv **Fellow of National Academy of Science:** Dr. Gautam was honored with fellowship of National Academy of Science for his significant contribution in the innovation of semi-conductor technology at North Maharashtra University on the prior recommendation of Dr. S. K. Joshi former Director General, CSIR, and support of Dr. W. S. Khokle former director, CEERI Pilani.
- v **Fellow of ABEGAA:** Dr. Gautam was nominated for the fellowship of Accredited bachelors Engineering Graduates of Asia and Africa (ABEGAA) for establishing a highly sophisticated device fabrication laboratory under the proposal of Dr.R.S.Shirohi (Vice-Chancellor of Barktulla Univ. and former Director IIT Delhi).
- vi **Fellow of Optical Society Of India:** The legendary contribution of Dr. Gautam in the field of Opto-electronics and Optical Engineering motivated the executive council of OSI to decorate Dr. Gautam with Fellow of OSI and member of the executive council.
- vii **Fellow of JSPS (Japan):** Dr. Gautam was jointly selected by DST (Govt. of India) and JSPS (Japan) for invitation JSPS fellowship. JSPS financially supported two months visit of Dr. Gautam to Japan which was hosted by Yokohama National University, Japan.
- viii **Fellow of Institute of Engineers:** For the supportive and outstanding contribution of Dr. Gautam as Director B.C.U.D North Maharashtra University, he was proposed by Dr. Mowar (Principal) and Dr. G. P. Sinha (Former GM Ordinance factory, Bhusawal) for the fellowship of Institute of Engineers (India).
- ix **Distinguished Fellow of IACQER:** For the outstanding experimental research and the very high capability of establishing innovative research laboratories, Prof. Gautam was nominated distinguished fellow of IACQER. He was also nominated as Honorary Director of IACQER to promote R&D activities, establishing research labs in India and international co-operations and collaborations.

#### 4. Employment Record after Post Doctoral Research:

Sr	Name & Add. of the Employer / Inst.	Post Held	AD-HOC/ Reg. / Temp / Permnt.	Period		Total period of each employment in years, month & days	Scale of Pay	Nature of Duties
				From	To			
01	The University of Tokyo	<b>Research Fellow</b>	Tenure Track	April 1989	March 1991	02 Years	~ Rs. 80000 /month	Teaching and research
02	Central Research Lab. Hitachi, Tokyo, Japan	<b>HIVIP Scientist</b>	Tenure Track	Sept. 1991	Mar. 1993	01 year, 06 months	~ Rs. 2 lacks / month	Research Scientist
03	North Maharashtra University, Jalgaon (M.S.)	<b>Reader and Head</b>	Permanent	Aug. 1994	Nov. 1999	05 years, 03 months	12000 - 18300	PG teaching, R&D & Administration
04	North Maharashtra University, Jalgaon (M.S.)	<b>Professor and Head</b>	Permanent	Nov. 1999	Nov. 2003	04 years,	16400 - 22400	PG teaching, R&D & Administration
05	North Maharashtra University, Jalgaon (M.S.)	<b>Director,</b>	Deputation	Nov. 2003	Mar. 2006	02.5 years	16400 - 22400	Educational planning and management
06	North Maharashtra University, Jalgaon (M.S.)	<b>Professor and Head</b>	Permanent	Mar. 2006	Date	03.0 years Continue	16400 - 22400	PG teaching, R&D & Administration

**i) Teaching experience:** Prof. Gautam is having 27 years of teaching experience in prestigious organizations which includes 17 years of post graduate teaching and research. He started his teaching career in July 1982 from Birla Education Trust, Pilani and continued the same enthusiasm at the University of Tokyo, Japan, North Maharashtra University, Jalgaon and has been continuing till date. Prof. Gautam's area of interest of teaching is semiconductor devices designing, optoelectronics and VLSI circuit design techniques and their fabrication. Presently he conducts three courses of M.Tech (CMOS, VLSI fabrication, and RF circuit designing) and one course of M.Sc (Planning and management of Electronics industries).

**ii) Research experience:** Prof. Gautam also has 27 years of research experience in world's renowned laboratories which include CEERI, Pilani, University of Tokyo, Japan, Central Research laboratory, Hitachi Ltd. Tokyo (Japan), and finally established his laboratory in North Maharashtra University which can be compared with any of the class laboratory in the world. The most significant point of Prof. Gautam's laboratory is that every sophisticated equipments which costs in crores, if imported, has been indigenously designed and built up in the laboratory itself which attracts several renowned scientists and young researchers to see the professional approach in the university environment.

## **5. Member of professional societies:**

- Institute of Electrical Engineers (UK) and Chartered Engineer
- Institute of Electronics and Telecommunication Engineers (India)
- Institute of Electrical and Electronics Engineers (USA)
- Institute of Electronics, Information, Communication Engineers (Japan)
- Japan Society of Applied Physics (Japan)
- Japan Society for Promotion of Science (Japan)
- Institute of Engineering and Technology (U.K.)
- Optical Society of India
- Institute of Engineers (India)
- National Academy of Engineering
- National Academy of Sciences
- American Chemical Society
- International Accreditation Council of Quality Education and Research

## **6. Awards / Prize (s) won:**

- ◆ MONBHUSO (Japan) Scholar of 1988-89 batch,
- ◆ HIVIPS, Hitachi (Japan) Awardee,
- ◆ Distinction In “Who’s Who In The World”, Published By Marquis In 1997 (USA).
- ◆ Dr. Gautam’s name was cited in the list of OUTSTANDING PEOPLE OF THE 20<sup>TH</sup> CENTUARY published in 1999 by International Biographical Center, Cambridge (England).
- ◆ Visiting Professor at Yokohama National University supported by Japan Society for Promotion of Science, JSPS Fellow 2002.
- ◆ Fellow of Royal Institute of Electrical Engineers, UK (2006).
- ◆ Fellow of Institute of Engineering and Technology, UK (2006)
- ◆ Fellow of Optical Society of India
- ◆ Fellow of National Academy of Engineering
- ◆ Fellow of National Academy of Sciences
- ◆ Distinguished Fellow International Accreditation Council of Quality Education and Research.

## **7. Administrative positions and assignments held/having:**

- President of Indian Students Association in Japan (1989-1991)
- Honorary Adviser to Embassy of India, Tokyo (Japan) (1991-1993)
- Group Leader of high speed switching devices team at CRL, Hitachi (Japan) (1991-1993)
- Head, Department of Electronics, N. M. University, Jalgaon (1994 to date),
- Member of several selection committees, board of studies and research proposal review committees of government of India.
- Electronics subject expert to appoint Assistant Professors, Professors in Engineering Colleges and Universities.
- Expert member in the selection boards to appoint Principals of Science, and Engineering Colleges
- Expert member of UGC’s national awards committees.
- Expert member of AICTE’s committees for recognition of M.E. courses
- Expert member of AICTE’s committees for accreditation of Engineering colleges
- AICTE’s subject expert for several colleges all over the country
- Expert member of UGC’s committee for recognition of deemed to be universities
- Reviewer of prestigious International journals of IEEE, Elsevier, JJAP and others.
- Invited speaker in prestigious international conferences.
- Delivered invited talks at several companies, universities and research laboratories of Japan on recent developments in optoelectronics technologies.



- Member of Management Council, North Maharashtra University, Jalgaon.
- Member of Academic Council, North Maharashtra University, Jalgaon.
- Member of Senate, North Maharashtra University, Jalgaon.
- Member of Board of Studies, North Maharashtra University, Jalgaon.
- Member of Board of Teaching and Research, North Maharashtra University, Jalgaon.
- Chairman of several prestigious committees of administration and academics of N.M.University as Director B.C.U.D.
- Expert member of DST's SERC committees
- Expert member of DST's WOS-A scheme
- Chairman of organizing committees of many national conferences
- Chairman of organizing committees of Five International and ten National conferences
- Principal investigator of several research projects funded by various agencies
- Coordinator of UGC sponsored M.Tech program in VLSI technology.
- Member Executive Council, Optical Society of India.
- Honorary Director, International Accreditation Council of Quality Education and Research.

#### **i) Administrative Experiences of Professor D. K. Gautam**

Prof. Gautam was the Director of Board of Colleges and University Development which is an equivalent position of Pro-Vice Chancellor where he was involved in planning, accreditation, and management of education of university schools, departments and 181 affiliated colleges and institutions situated in three districts of Maharashtra. The role of Director, BCUD, is very important in university education system where he was expected to work as an innovator, model designer, implementing manager, quality controller and an architect of future education system. He stood at the second position in the university after Vice Chancellor where he coordinated the academic planning, and financial management. Professor Gautam worked as Professor and Head of the Electronics department of this university for more than 11 years and is presently the professor and Head of electronics department and coordinator of UGC sponsored M.Tech. (VLSI) program. During the eleven years tenure of his headship department of electronics which was started from scratch earned the international recognition in the area of high quality research and development. Prof. Gautam established model examples for younger people for innovation, financial planning and management of human resources. His approach of functioning touched the hearts of all the academicians of North Maharashtra University and his name was proposed unanimously for the post of Director

BCUD where he has implemented several new ideas for the effective and quality education. As a Director, B.C.U.D., Professor Gautam fetched huge funding of more than Rs. 10.00 crore under various schemes. He brought almost 50% University departments under the umbrella of DRS program of UGC and FIST program of DST respectively. Professor Gautam implemented a highly professional approach to enhance the standards of Ph.D. program in all the faculties of the university. The M.Tech program in the faculty of engineering and technology has been initiated in his command and is running very effectively in the most advanced subjects of technologies. Prof. Gautam has worked on several prestigious national and universities bodies and has (been) played/playing a vital role as a member and expert.

## **ii) Achievements of Professor D. K. Gautam as Director, B.C.U.D.**

Prof. Gautam as director, B.C.U.D., gave thrust on quality education and enhancement of R&D activities in the University departments and colleges. He motivated the faculty members of both university departments and affiliated colleges to submit research projects. During the tenure of Prof Gautam as many as 184 faculty members got research projects from various funding agencies which is seven times higher than any other former Director B.C.U.D. worked before Dr. Gautam. He organized at least one national conference in each faculty. He took lead in the submission of DRS and FIST projects to UGC and DST respectively. As a result 50% of university departments were brought under the umbrella of DRS and FIST with a funding of more than Rs. 2 crore. Prof. Gautam took special initiatives to start M.Tech. VLSI technology course and submitted proposal to UGC under innovative programs. On the basis of proven track record UGC gave the 100% granted course with a funding of more than one crore and sixty lakhs including building. Dr. Gautam proposed and got implemented the international grading system to access the progress of the students. He got accredited more than 50 colleges. Two of the colleges were brought under the umbrella of colleges with potential and both the colleges got the grant of Rs. 60 Lakhs. Prof Gautam gave special emphasis on hostel facility to girls in every college. As many as 21 colleges were given grant as an average of Rs. 20 Lakhs each. Prof. Gautam fetched more than Rs 10 crore from various funding agencies during his tenure of 2.5 years.

### **iii) Achievements of Professor D. K. Gautam as Head of the Electronics Department**

Prof. Gautam started the department of Electronics in the newly born North Maharashtra University from scratch. He implemented the modern syllabus of VLSI design, optoelectronics device technology and their fabrication. He successfully completed mega projects from various funding agencies which helped him to establish modern device fabrication lab which is the first laboratory among the universities of the country. A large number of successful projects and publications in international journals of high repute and successful organization of two international conferences and five national conferences makes recognize the department internationally. The several alumni of his department, who came for studies from rural and tribal areas, are working in the leading multinational companies of the world including Intel and Motorola which proves that Dr. Gautam has significant contributions in building the North Maharashtra University, Maharashtra and country as well. The achievements of department of electronics of North Maharashtra University and Prof. D.K.Gautam are cited on several national and international websites.

### **iv) Achievements of Professor D. K. Gautam as one of the founder Professor of the university**

Prof. Gautam has been involved in the planning and management of the university since its beginning both officially and helping hand to the Vice Chancellor. He played a vital role with Prof. N.K.Thakare in giving the architectural design both for infrastructure and academics. He implemented modern courses, syllabus, curriculum and examination system. North Maharashtra University is the first state university which has Kendriya Vidyalaya on its campus since its beginning in order to attract high quality staff in this university. This was the idea and management of Prof. Gautam which made this university a proud centre having Kendriya Vidyalaya on its campus granted by MHRD, New Delhi.

## **8. Research specializations:**

Prof. Gautam works on VLSI and optoelectronics device design and fabrication technologies. He has proven track record and long experience of designing and fabrication of semiconductor processing equipments, devices design and fabrication, characterization of electronics and optoelectronics devices which makes his laboratory a rich centre of fabrication and characterization facilities for semiconductor chips. The present status of the laboratory is as follows.

Number of sponsored projects completed	<b>8</b>
Number of Ph.D. thesis guided	<b>9</b>
Number of Master thesis guided	<b>316</b>
Number of Ph.D. students working at present	<b>9</b>
Number of patents	<b>4</b>
Number of papers published	<b>&gt;150</b>

### **i) Significant Research Contributions of Professor D. K. Gautam:**

Prof. Gautam invented a new theory of light emission from reverse biased Silicon p-n junction which was published in the international journal of Solid State Electronics in the year 1988. This theory was greatly appreciated among the scientific society and has been referred and cited in prestigious journals. In the year 1991, he fabricated and demonstrated the first high speed double heterostructure transistor optical switch with an independent approach of fabrication which was greatly appreciated by professors and researchers of the University of Tokyo (Japan). The achievement of this complicated devices came into the notice of Central Research Laboratory, Hitachi (Japan) and Professor Gautam was offered prestigious HIVIPS fellowship award from 1991-93. In Hitachi, Professor Gautam proposed, designed, fabricated and demonstrated a reverse-bias operated MESFOOS high speed optical switch. This is a patented product of Hitachi in the credit of Professor Gautam's research.

In 1994, Professor Gautam joined the newly born North Maharashtra University, Jalgaon, where he started from scratch and established India's first semiconductor device fabrication laboratory among the universities. The most significant point of his laboratory is that each and every sophisticated equipment of his laboratory is indigenously fabricated by him which not only reduces the cost drastically but reveals a wide scope of developing new technologies. Now, the department of Electronics of North Maharashtra University is an internationally known research centre for high quality R&D for semiconductor devices especially those which are used for modern technologies of optoelectronics. His laboratory consists of auto-controlled liquid phase epitaxy, metal organic chemical vapor deposition, low pressure chemical vapor deposition, oxinitride thermal CVD, plasma enhanced chemical vapor deposition, and Flame Hydrolisis chemical vapor deposition. This is the only laboratory in India which is a fully equipped for the design and development of optoelectronics devices.

- ii. Available research team:**
- \* 5 Ph. D. Scholars / Research Scientists
  - \* 8 Ph.D. students
  - \* 83 Master students are actively engaged in research

**iii. A brief outline of research projects completed:**

Prof. Gautam has been involved in the design, analysis and fabrication of the optoelectronics devices. He has developed the technology for double heterostructure bipolar transistor optical switch. This was a mega project of about Rs. 15 crore at the University of Tokyo, Japan which was supported by MONBHUSO and Hitachi Ltd. Professor Gautam was the group leader of this mission which was successfully completed. A high-speed optical switch named MESFOOS was proposed, designed and fabricated under his ideas and leadership at CRL, HITACHI. This was a project of about Rs. 25 crore. Professor Gautam has also developed excellent infrastructure with new techniques, which suits in Indian circumstances for the development of optoelectronics devices including highly sophisticated computer aided design tools at North Maharashtra University. A low cost and low maintenance clean room has been designed and built up in which all the machines have been indigenously fabricated. Prof. Gautam has vast experience on absolute technology development of Optical devices required for high-speed data communication and WDM networks. He has successfully completed the projects of Rs. 47 lakhs, 20 Lakhs, 5 Lakhs respectively of DST to develop optical power splitters/combiners. The other completed projects include the development of optical modulators of Rs.10 lakhs from AICTE and a CSIR project to develop a CVD machine of Rs. 8.5 Lakhs. A project sponsored by UGC to develop the CAD tools to design Semiconductor lasers has also been successfully completed. Presently he is having one project of DST, Rs. 23 Lakhs, one from IRDE, 10 Lakhs, one from DRDO, 15 Lakhs, and one, 15 Lakhs, from BRNS, DAE etc. Professor Gautam is coordinator of M.Tech. VLSI technology, program sponsored by UGC, New Delhi.

**III(a). International Professional bodies and participation in their activities**

Prof. Gautam works enthusiastically for national and international professional organizations in particular to the research activities such as member of conference organizing committees, keynote and invited speaker, convener or Chairman of the organizing committees. The main organizations are IET, IEE, OSI, NASI, and IACQER. He guides to the NASI and IACQER sponsored research fellows. He has played a vital role to establish some of the role model research laboratories developed by IACQER in rural areas of Andhra Pradesh, Narsapur and Dakumari near Vijaynagaram respectively, under IACQER sponsorship.

### III(b) Chronological list of research projects completed/ongoing:

Sr. No.	Title of the Project	Name of the funding agency	Amount (Rs.)	Duration			Output Publications
				From	To	Total	
1	Double heterostructure bipolar transistor optical switch	MONBH USO and Hitachi Ltd, Japan	about Rs. 15 crore	April 1989	March 1991	Two years	4
2	MESFOOS high Speed Optical Switch	CRL, HITACHI I, Japan	about Rs. 25 crore	April 1991	March 1993	Two years	11
3	Computer Aided Design Tools for Semiconductor laser Diodes	UGC, India	Rs. 5 Lakhs	01/10/9 6	30/09/9 9	3years	14
4	Design and Fabrication of optical power splitters/combiners (Phase -I)	DST, India	Rs. 47 lakhs	27 July 1998	27 Jan 2000	18 Month	24
5	Characterization of optical absorption modulator used in optical fiber communication	AICTE, India	Rs.10 lakhs	March 1999	march 2001	2 Years	2
6	Fabrication of TEOS-CVD machine for the growth of silicon oxynitride and silicon nitride thin films	CSIR, India	Rs. 8.5 Lakhs	August 2000	31 <sup>st</sup> July 2002	2 Years	10
7	Fabrication of Optical Waveguide Power Splitter on Si substrate for Optical Fiber Communication (Phase II)	DST, India	Rs. 5 Lakhs	01 Sept. 2001	28 Feb. 2002	6 months	4
8	Fabrication of Optical Waveguide Power Splitter on Si substrate for Optical Fiber Communication (Phase II-E)	DST, India	Rs. 20 Lakhs	2 <sup>nd</sup> May 2002	1 <sup>st</sup> August 2004	2 Years	5
9	Computer simulation tools for GaN based blue laser diode	Fast Track DST	Rs. ~10 Lakhs	May 2003	May 2006	3 Years	4
10	Large area antireflection (AR) Diamond like Carbon (DLC) film Coating on Ge Substrate	IRDE, India & DRDO, India	Rs. 10 Lakhs	Dec 2004	Dec 2005	1 Year	2
11	Growth, Optoelectronic Properties and effect of Swift Heavy Ions Irradiation (SHI) on the composite M/Polyaniline (M+SnO <sub>2</sub> ) thin films for gas sensor applications	BRNS, DAE	Rs. 15 Lakhs	Sept 2005	August 2008	3 years	2
12	Growth and Characterization of	CSIR	Rs. <b>13,69,62</b>	-	-	3 Years	

	Silicon Oxynitride and Silicon Nitride Thin Films (Phase II)		0			
13	Heteroepitaxial growth of semiconductors for high frequency and optoelectronics device applications and device physics	DST	Rs. 8 Crores	In process		
14	Deposition and Characterization of alternative dielectric materials for VLSI applications	DIT	Rs. 99,48,750	In process		

**III(b). Sophisticated machines invented and developed for the laboratory:**

S.N.	Name of machine	Year of development	Market cost	Funding agency	Lab cost	No. of patents and publications
1.	Thermal oxide CVD	1996-97	Rs. 80 Lakhs	DST/ NMU	Rs. 2 Lakhs	11
2.	Impurity Diffusion equipment	1996-97	Rs. 80 Lakhs	NMU	Rs. 2 Lakhs	2
3.	Thermal oxy/nitride equipment	1997-98	Rs. 80 Lakhs	CSIR	Rs. 2 Lakhs	18
4.	Liquid phase epitaxy	1998-99	Rs. 120 Lakhs	NMU/AICTE	Rs. 5 Lakhs	2
5.	ZnSe MOCVD system	1999-2000	Rs. 6 Crore	NMU	Rs. 8 Lakhs	4
6.	PECVD system	2000-2001	Rs. 5 Crores	DST	Rs 20 Lakhs	32
7.	Flame Hydrolysis system	2005-06	Rs. 2.5 crores	DST	Rs 10 lakhs	3
8.	Rapid annealing system	2002-03	Rs. 12 Lakhs	DST/NMU	Rs. 1 Lakh	2

**IV. Details of the Ph.D. students guided:**

<b>S.N.</b>	<b>Name of Student</b>	<b>Title of thesis</b>	<b>Year of award of degree</b>	<b>Number publications</b>
1	Dr. Chitrarekha Chaudhari	Design, analysis, and fabrication techniques of optical power splitter/combiner	2001	25
2	Dr. D.S. Patil	Design, analysis, and fabrication techniques of blue laser diode	2002	15
3	Dr. A.M. Mahajan	Fabrication of Plasma Enhanced Chemical Vapor deposition system and growth of thin films	2003	23
4	Dr. Lalit S. Patil	Growth and Characterization of dielectric thin films for microelectronics and optoelectronics devices applications	2006	26
5	Mr. Jaspal Bange	Growth and Characterization of doped and undoped films by Flame Hydrolysis systems	2007	20
6	Mr. S.A. Gaikwad	Design, analysis and fabrication techniques of GaN/AlGaN blue lasers	2004	09
7	Mr. Deepak R. Patil	Design and deposition of high K dielectric materials for photonic crystals	2009	10
8	Mr. Vinay Kumar Tomar	Design, analysis and fabrication techniques of photonic crystal structures for optoelectronics devices applications	2007	17
9	Mr. Raghvendra S. Dubey	Design, fabrication and Characterization of one dimensional photonic crystals using porous Silicon multilayers	2008	30



## 9. List of Publications:

Sr. No.	Title of Paper / Book / Report	Author(s)	Journal	Page No.	
				From	To
01	Drift velocity and ionization coefficient for holes in single valley semiconductors	<b>Gautam D. K.</b> , W. S. Khokle, and K. B. Garg	Solid State Electronics 30, (1987) (IF: )	1271	1275
02	Transition probability of impact ionization by holes in Silicon	<b>Gautam D. K.</b> , W. S. Khokle and K. B. Garg	Physica Status Solidi; 145, (1988) (IF: )	269	275
03	Photon emission from reverse biased Silicon p-n junction	<b>Gautam D. K.</b> , W. S. Khokle, and K. B. Garg	Solid State Electronics 31 (1988) (IF: )	219	222
04	Effect of absorption on photon emission in reverse biased Silicon p-n junction	<b>Gautam D. K.</b> , W. S. Khokle and K. B. Garg	Solid State Electronics 30 (1988) (IF: )	1119	1129
05	Low concentration Cd diffusion to GaAs	<b>Gautam D. K.</b> , Y. Nakano, and K. Tada	Jap. J. Of Appl. Physics, 30 , (1991) <b>(IF:1.058 )</b>	1176	1180
06	A X-waveguide type optical switch in a MESFET geometry	<b>Gautam D. K.</b> , K. Ishida	Hitachi Kenpo no. 20613, (1992) Japan (IF: )	1	20
07	Design and Analysis of the X- waveguide optical switch in a MESFET geometry	<b>Gautam D. K.</b> , K. Ishida and K. Tada	Jap. J. of Applied Physics, 31 (9), (1992) <b>(IF:1.058 )</b>	2748	2754
08	Design and analysis of the MESFET optical switch for low drive voltage	<b>Gautam D. K.</b> and K. Ishida	Hitachi Kenpo no. 21154, (1993) Japan (IF: )	1	20
09	Selective tin diffusion techniques in open tube	<b>Gautam D. K.</b> and K. Ishida	Hitachi Kenpo (1993) (IF: )	1	20
10	Pt/Au Schottky contact on selectively tin diffused GaAs waveguide structures	<b>Gautam D. K.</b> and K. Ishida	Hitachi Kenpo (1993) (IF: )	1	20
11	Carrier induced MESFET optical switch for photonic integration	<b>Gautam D. K.</b> and K. Ishida	IEE PROCEEDINGS- J Special issue on photonic switching, 140 (5), (1993) <b>(IF:2.58 )</b>	317	324
12	Fabrication of Schottky diodes on selectively tin diffused AlGaAs/GaAs /InGaAs substrates	<b>Gautam D. K.</b> and K. Ishida	Infrared Physics and Technol., Vol. 36 (1995) <b>(IF:1.296 )</b>	981	985

13	High concentration selective tin diffusion into GaAs substrate	<b>Gautam D. K.</b> and K. Ishida	Infrared Physics and Technol., Vol. 36 (1995) <b>(IF: 1.296)</b>	7	15
14	"Analysis of SiO <sub>2</sub> /SiO <sub>2</sub> -TiO <sub>2</sub> /SiO <sub>2</sub> coupled parallel waveguide structures using computer aided design techniques	Chitrarekha Chaudhari, and <b>D. K. Gautam</b>	Optics Communications, 181 (2000) <b>(IF:1.486 )</b>	61	69
15	A New Technique for the Reduction of the Power Loss in the Y-Branch Optical Power Splitter	Chitrarekha Chaudhari, Dnyaneshwar S. Patil and <b>D. K. Gautam</b>	Optics Communications, 193 (2001) <b>(IF: 1.486)</b>	121	125
16	Computer analysis and optimization of physical and material parameters of the blue laser diode.	Dnyaneshwar S. Patil, and <b>D. K. Gautam</b>	Optics Communications, 201 (2002) <b>(IF:1.486 )</b>	413	423
17	Optimization of Structural Parameters of Power Combiner for High Power Blue Laser Diode.	Dnyaneshwar S. Patil, C. B. Chaudhari, and <b>D. K. Gautam</b>	Journal of Pure And Applied Optics 4 (2002) <b>(IF:1.92 )</b>	338	342
18	Computer Simulation of Process Parameters for the Growth of SiO <sub>2</sub> Films by PECVD	A. M. Mahajan, Dnyaneshwar S. Patil, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Submitted to the international journal of Elsevier, Thin Solid Films (IF: )	-	-
19	Microprocessor Controlled Inclined Etching For The Measurement Of Carrier Concentration Profile	Deep Narsay, C. B. Chaudhari, and <b>D. K. Gautam</b>	IETE Technical Review, Vol. 15, No. 1, 1998 (IF: )	45	48
20	In situ monitoring of crystal Growth in LPE using microprocessor	Sachin Patel, C. B. Chaudhari, and <b>D. K. Gautam</b>	IETE Technical Review, Vol. 15, No. 1, 1998 (IF: )	13	17
21	Computer aided design of the monolithically integrated 807 nm laser diodes and power combiner for high power applications	Chitrarekha Chaudhari, Dnyaneshwar S. Patil, L. S. Patil and <b>D. K. Gautam</b>	Special issue of Laser Horizon on photonics, Vol. 4, No. 1, 2000 (IF: )	49	55
22	Analysis of current spreading in a planar structure laser with a strip contact	Dnyaneshwar S. Patil, and <b>D. K. Gautam</b>	Special issue of Laser Horizon on photonics, Vol. 4, No. 2, 2000 (IF: )	31, 36	40
23	Simulation of Blue Laser Diode with power combiner for high power application	Dnyaneshwar S. Patil, Chitrarekha Chaudhari, and <b>D. K. Gautam</b>	Special issue of Laser Horizon on photonics, Vol. 5, No. 1, 2001 (IF: )	42	47

24	Semiconductor Laser diode modeling and analysis	Dnyaneshwar S. Patil, and <b>D. K. Gautam</b>	Special issue of Laser Horizon on photonics, Vol. 5, No. 2, 2001 (IF: )	39	48
25	Computer aided simulation tools for the analysis of semiconductor lasers.	Dnyaneshwar S. Patil, and <b>D. K. Gautam</b>	Journal of IETE, Vol. 20, No. 6, 2003 (IF: )	533	540
26	Open tube double diffusion for fabrication of double heterostructure bipolar transistor switch into GaAs & characterization	<b>Gautam D.K.</b> , Y. Nakano, and K. Tada	Proceeding of the Second International meeting on Advanced processing (APCT 91); Clearwater Florida (IF: )	142	146
27	Double heterostructure bipolar transistor as a multifunctional device for optoelectronic integrated circuits into GaAs	K. Tada, Y. Okada, <b>Gautam D. K.</b> , Y. Shimogaki and Y. Nakano	Proceedings of the sixth International Workshop on Physics of Semiconductor Devices (1991) (IF: )	4	27
28	GaAs to nodo Cd Kakusan (In Japanese)	<b>Gautam D.K.</b> , Y. Nakano, K. Sato and K. Tada	Ext. abst. of 36 <sup>th</sup> spring meeting of Jap. soc. of Appl. Phy. & related soc. (1991) (IF: )	1176	1180
29	Bipora transista kojyo doharo gata hikari hkaikanho nijiu kakusan (In Japanese)	<b>Gautam D. K.</b> , K. Sato, Y. Nakano and K. Tada	Extended abstract of 38 <sup>th</sup> spring meeting of Jap. Soc. of Applied Physics and related societies (1991) (IF: )	1177	1181
30	MQW FET gata hikari Tean to Kaiseki switch (In Japanese)	<b>Gautam D. K.</b> , Y. Nakano and K. Tada	Extended abstract of 39 <sup>th</sup> spring meeting of Jap. Soc. of App. Phy. & related societies (1992) (IF: )	979	983
31	Impurity diffusion into GaAs through the SiO <sub>2</sub> protective layer	<b>Gautam D. K.</b> , Y. Shimogaki, K. Sato, K.Tada, and Y. Nakno	Proc. of 5 <sup>th</sup> International conference shallow impurities in semiconductors, Material Sci. Forum, Trans Tech Publications, 117, (1993). (IF: )	417	422

32	Design and analysis of the MESFET optical switch for low drive voltage	<b>Gautam D. K.</b> , and K. Ishida	Extended abstract of 40 <sup>th</sup> spring meeting of Japan (IF: )	1981	1984
33	CAD tools for Semiconductor Laser	R.A. Wani and <b>Gautam D. K.</b>	Conference on Product Design Technology, Chandigarh, 1995. (IF: )	252	258
34	Beam Propagation Method for Guided Wave Devices	C.B. Patil and <b>Gautam D. K.</b>	Conference on Product Design Technology in Chandigarh, 1995. (IF: )	242	248
35	Design tools of waveguide structures for photonic applications	C.A. Deshpande, and <b>Gautam D. K.</b>	Conference on Product Design Technology in Chandigarh, 1995. (IF: )	249	251
36	Design tools of Optical Switches for Design Technology in Photonic applications (INVITED)	<b>Gautam D. K.</b>	Conference on Product Design Technology in Chandigarh, 1995. (IF: )	233	241
37	Design, analysis & fabrication tech. for inclined waveguide structures & their applications to vertically coupled power splitters/ combiners	C. B. Chaudhari, S. A. Patel, D.S. Patil, and <b>D. K. Gautam</b>	Proc. of Int. Conf. On Fiber Optics and Photonics - PHOTONICS 96, 1996 (IF: )	592	597
38	Mode Coupling In Variably Spaced Waveguides Using Beam Propagation Method	Chitrarekha Chaudhari, D. S. Patil, and <b>D. K. Gautam</b>	Proc. of the international conference on optics and optoelectronics, ICOL-98, Dehra Dun, India (IF: )	1255	1259
39	Analysis Of Coupled Parallel Multiwaveguide System By Beam Propagation Method	Chitrarekha Chaudhari, D. S. Patil and <b>D. K. Gautam</b>	Proc. of the international conference on fiber and photonics, "PHOTONICS-98 held at IIT, Delhi, India (IF: )	271	274
40	Analysis of asymmetric systems of three coupled parallel Waveguide by beam propagation method	Chitrarekha Chaudhari, and <b>D. K. Gautam</b>	Presented at the XXVI national symposium of the Optical Society of India held at Warangal, During 4-5, Feb. 2000	74	78

41	Technology development for the optical rib waveguide structures on silicon substrate	Chitrarekha Chaudhari, Dnyaneshwar S. Patil, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Proc. of international conference on fiber optics and photonics, PHOTONICS 2000 (IF: )	786	788
42	Growth and Characterization of SiO <sub>2</sub> films for the fabrication of Optical Waveguides	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Journal of Optics, Vol. 31, NO. 2 (2002) (IF:1.662 )	53	58
43	Design and fabrication of PECVD system for high growth rate	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Presented at National Symposium on Science and Technology of Vacuum and thin films, Bangalore, 2001 (IF: )	168	172
44	Comparative study of SiO <sub>2</sub> films grown by Thermal CVD and PECVD	L. S. Patil, A. M. Mahajan, J. P. Bange and <b>D. K. Gautam</b>	Presented at National Symposium on Science and Technology of Vacuum and thin films, Bangalore, 2001 (IF: )	186	190
45	Optimization of the design parameters of the Branching Waveguide Power Splitter by BPM Tools	Chitrarekha Chaudhari and <b>D. K. Gautam</b>	Proc. of int. conference on Broad Band Optical Fiber Communication Technology, BBOFCT – 2001 (IF: )	165	171
46	Comparison of the performance of the S-Shaped Branches on Silicon Substrate	Chitrarekha Chaudhari and <b>D. K. Gautam</b>	Proc. of int. conference on Broad Band Optical Fiber Communication Technology, BBOFCT – 2001 (IF: )	205	210
47	Modeling and Analysis of Blue Laser Diode at 507 Nanometer Wavelength	D. S. Patil and <b>D. K. Gautam</b>	Proc. of int. conference on Broad Band Optical Fiber Communication Technology, BBOFCT – 2001 (IF: )	217	223
48	Effect of Channel Width on the Field Spreading in Channel Substrate Planer Blue Laser Diode	D. S. Patil, A. M. Mahajan and <b>D. K. Gautam</b>	Proc. of int. conference on Broad Band Optical Fiber Communication Technology, BBOFCT – 2001	239	242
49	Design and Optimization of Parallel Waveguide Directional Coupler Based Optical Demultiplexer	S. A. Gaikward, C. B. Chaudhari, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Proc. of int. conference on Broad Band Optical Fiber Communication Technology, BBOFCT – 2001	257	261

50	Effect of Chamber Pressure Variation on Refractive Index of SiO <sub>2</sub> Films Developed by PECVD	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Proc. of int. conference on Broad Band Optical Fiber Communication Technology, BBOFCT – 2001 (IF: )	283	286
51	Characterization of Optical Waveguides	Deepak R. Patil, C. B. Chaudhari, L. S. Patil, J. P. Bange, S. A. Gaikward, A. N. Ardad, N. D. Pawar and <b>D. K. Gautam</b>	Proc. of int. conference on Broad Band Optical Fiber Communication Technology, BBOFCT – 2001 (IF: )	437	444
52	Design and Fabrication of ECG machine using VLSI electrode	M. D. Shirsat, A. M. Mahajan, and <b>D. K. Gautam</b>	Presented at International Conference Bio-Vision 2001 at IISc, Bangalore during Dec. 21-24, 2001	215	218
53	Design and fabrication of Demultiplexers for DWDM Applications	<b>D. K. Gautam</b> , Chitrarekha Chaudhari and L. S. Patil	Proceeding of SPIE, International Conference APOC – 2002, held at Shanghai, China Vol. 4905	85	97
54	Effect of variation in O <sub>2</sub> / TEOS flow ration on properties of SiO <sub>2</sub> films deposited by PECVD	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Proc. of Int. Conf. on Optoelectronics, Fiber optics and Photonics, PHOTONICS – 2002, Mumbai.	282	286
55	Analysis of deposition kinetics and apparent activation energy for the growth of SiO <sub>2</sub> films using TEOS-PECVD	R. S. Dubey, M. P. Bhole, A. M. Mahajan and <b>D. K. Gautam</b>	Presented in Conference on Optics and Photonics in Engineering COPE – 03, New Delhi.	146	149
56	Alluminium concentration and temperature dependence of bandgap of AlGa <sub>N</sub> / GaN material	Kanchan D. Talale, D. S. Patil, S. A. Gaikwad and <b>D. K. Gautam</b>	Presented in Conference on Optics and Photonics in Engineering COPE – 03, New Delhi.	154	156
57	Effect of variation in substrate temperature on the growth rate of SiO <sub>2</sub> films deposited by PECVD system	A. M. Mahajan, L. S. Patil, J. P. Bange, R. K. Pandey and <b>D. K. Gautam</b>	Presented in Conference on Optics and Photonics in Engineering COPE – 03, New Delhi.	78	81
58	Analysis of field confinement in nitride based semiconductor laser diode at 307 nano meter wavelength	Namita S. Pai, D. S. Patil and <b>D. K. Gautam</b>	Presented in Conference on Optics and Photonics in Engineering COPE – 03, New Delhi.	157	159

59	Automesh generation for GaN based Double Heterostructure Semiconductor lasers	Ujwala D. Zope, D. S. Patil and <b>D. K. Gautam</b>	Presented in Conference on Optics and Photonics in Engineering COPE – 03, New Delhi.	160	163
60	Optimization of process parameters for the deposition of SiO <sub>2</sub> films by PECVD system	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Proc. of National Symposium on Instrumentation NSI-27, Coimbatore.	117	121
61	Technology development of waveguide optical power splitter on silicon substrate	<b>D. K. Gautam</b>	SERC Research Highlights, Department of Science and Technology, New Delhi, June 2003.	289	299
62	Growth and characterization of SiON thin films by using thermal CVD machine	R. K. Pandey, L. S. Patil, J. P. Bange, D. R. Patil, A. M. Mahajan, D. S. Patil and <b>D. K. Gautam</b>	Optical Materials, Vol. 25, 2004 <b>(IF:2.023 )</b>	1	7
63	A new technique of rainfall measurement using microprocessor: Application to agriculture	Chitrarekha Chaudhari, Dnyaneshwar S. Patil, D. V. Borse and <b>D. K. Gautam</b>	IETE Technical Review (IF: )	-	-
64	Analysis of effect of temperature on blue laser at 507 nanometer wavelength	D. S. Patil and <b>D. K. Gautam</b>	Journal of Physica B, Vol. 344 <b>(IF:1.063 )</b>	140	146
65	Growth and characterization of SiO <sub>2</sub> thin films	A. M. Mahajan, R. K. Pandey, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Submitted to Thin Solid Films (IF: )	-	-
66	Growth of SiO <sub>2</sub> films by TEOS – PECVD system for microelectronics applications	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Journal of Surface and Coating Technology, Vol. 183 (2004) <b>(IF:2.193 )</b>	295	300
67	Exploration of optical confinement Nitride based blue laser diode at 507 nanometer wavelength	D. S. Patil, E. P. Samuel, N. D. Pawar, M. P. Bhole and <b>D. K. Gautam</b>	Proc. of National Laser Symposium, Dec. 22 – 24, 2003 (IF: )	199	200
68	Effect of active layer thickness on the field confinement at different wavelengths for the blue laser diode	E. P. Samuel, Kundan Dhande, Karuna Bhole, D. S. Patil and <b>D. K. Gautam</b>	Proceeding of National Laser Symposium, Dec. 22 – 24, 2003 (IF: )	201	202
69	High growth rate PECVD system for the deposition of SiO <sub>2</sub> films	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004	78	88

70	Modal analysis and field confinement in Gallium Nitride based Laser Diode at 375 nanometer wavelength	E. P. Samuel, S. A. Gaikwad, Kundan Dhande, Karuna Bhole, Minal Bhole, D. S. Patil and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004 (IF: )	139	142
71	Automation of process parameters of indigenously developed FHD system	Jaspal P. Bange, Lalit S. Patil, Vinod Patil, D. Bhavar, Suchita Bhangale and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004 (IF: )	453	461
72	Monitoring and control of gas flow for the effective deposition of films in MOCVD for quantum well devices	V. P. Chavan, E. R. Khan, Rajdeep Gautam, M. P. Bhole, Jaspal P. Bange, D. S. Patil and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004 (IF: )	472	480
73	Plasma diagnostic study in a Capacitively coupled TEOS – PECVD system	A. M. Mahajan, Jyotsna Rane and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004 (IF: )	503	509
74	Effect of temperature on the deposition kinetics of SiO <sub>2</sub> films grown by PECVD system	A. M. Mahajan, M. D. Joshi and <b>D. K. Gautam</b>	Proc. of International Conference on Optoelectronics Technology, ICOT – 2004 (IF: )	510	515
75	FTIR study of Silicon Nitride films deposited by Thermal CVD system	R. K. Pandey, Dewyani Patil, N. K. Gautam, Snehal Yeole, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004 (IF: )	527	536
76	Effect of deposition temperature on the chemical properties of Silicon Oxynitride films for optoelectronics applications	R. K. Pandey, Dewyani Patil, Nitin Patil, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004 (IF: )	537	545
77	Numerical modeling techniques for photonic band gap structures	Deepak R. Patil, V. K. Tomar, S. S. Chaudhari, S. K. Marathe, Dipti Kulkarni, Vaishali patil and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004	549	558



78	Comparative analysis of Frequency Domain and Time Domain methods for design and development of photonics crystals	V. K. Tomar, D. R. Patil, S. K. Marathe, S. S. Chaudhari, Dipti Kulkarni, Vaishali Patil and <b>D. K. Gautam</b>	Proceeding of International Conference on Optoelectronics Technology, ICOT – 2004	593	602
79	Design and fabrication of nano structure photonic crystals: A new era of technology	<b>D. K. Gautam</b>	Proceeding of National Conference on Microwaves and Optoelectronics, NCMO – 2004	337	364
80	Modeling of optical waveguide amplifier on silicon substrate	Chitrarekha Chaudhari, Osamu Hanaizumi and <b>D. K. Gautam</b>	Proceeding of National Conference on Microwaves and Optoelectronics, NCMO – 2004	374	379
81	Effect of Deposition temperature on the properties of Silicon Nitride films grown by Thermal CVD system	R. K. Pandey, L. S. Patil, Jaspal P. Bange, R. S. Dubey, S. A. Gaikwad and <b>D. K. Gautam</b>	Proceeding of National Conference on Microwaves and Optoelectronics, NCMO – 2004	290	297
82	Analysis of Optical properties in one dimensional photonic crystals	R. S. Dubey, S. A. Gaikwad, R. K. Pandey and <b>D. K. Gautam</b>	Proceeding of National Conference on Microwaves and Optoelectronics, NCMO – 2004	298	302
83	Analysis of photonic band gap structure for simple cubic lattice	V. K. Tomar, D. R. Patil, and <b>D. K. Gautam</b>	Proceeding of National Conference on Microwaves and Optoelectronics, NCMO – 2004	380	383
84	Effect of refractive index contrast ration on optical properties of photonic crystal	V. K. Tomar, Amit B. Chatre, Nitin N. Dhanker and <b>D. K. Gautam</b>	Proceeding of International Conference On Fiber Optics and Photonics - PHOTONICS 2004	393	394
85	Temperature dependence of effective bandgap, refractive index, dielectric function and model parameters C (x,T), A(x,T) of Al <sub>x</sub> Ga <sub>1-x</sub> N	S. A. Gaikwad and <b>D. K. Gautam</b>	Proceeding of International Conference On Fiber Optics and Photonics - PHOTONICS 2004	104	108
86	Demonstration of Optical gain by silicon nanocrystals embedded in SiO <sub>2</sub> thin films by variable stripe length method	Chitrarekha Chaudhari, Osamu Takei, Yoshiyuki Tashiro, Osamu Hanaizumi and <b>D. K. Gautam</b>	Proceeding of International Conference On Fiber Optics and Photonics - PHOTONICS 2004	326	328
87	Mathematical modeling and analysis of HUBBURD U for quantum device application	Md. Sadique A. Shaikh, A. M. Mahajan and <b>D. K. Gautam</b>	Proceeding of Fourth DAE-BRNS National Laser Symposium (NLS – 4), 2005	639	641
88	Analysis of 1D photonic crystal for Enhancing laser action	V. K. Tomar, E. P. Samuel and <b>D. K. Gautam</b>	Proceeding of Fourth DAE-BRNS National Laser Symposium (NLS – 4), 2005	240	242

89	Analysis of the GaN / AlGaN single quantum well ultraviolet laser diode	E. P. Samuel, M. P. Bhole, S. A. Gaikwad, D. S. Patil, and <b>D. K. Gautam</b>	Proceeding of Fourth DAE-BRNS National Laser Symposium (NLS – 4), 2005	146	147
90	Growth and characterization on Silicon Nitride films for optoelectronics applications	R. K. Pandey, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Optical Materials Vol. 27, 2004 (IF:2.023 )	139	146
91	TEOS PECVD system for the high growth rate deposition of SiO <sub>2</sub> films.	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Journal of Vacuum, Vol. 79, 2005 (IF: 1.317)	194	202
92	Influence of process parameters on the properties of PECVD grown SiO <sub>2</sub> films.	A. M. Mahajan, L. S. Patil, J. P. Bange and <b>D. K. Gautam</b>	Journal of Surface and Coating Technology, Vol. 188 189C, 2004 (IF: 2.193)	314	318
93	Effect of deposition temperature on the chemical properties of thermally deposited Silicon Nitride Films.	L. S. Patil, R. K. Pandey, Jaspal P. Bange, S. A. Gaikwad and <b>D. K. Gautam</b>	Journal of Optical Materials, vol. 27, 2005 (IF: 2.023)	663	670
94	Automation of Flame Hydrolysis Deposition system for optical device fabrication	Jaspal P. Bange, L. S. Patil and <b>D. K. Gautam</b>	Proceeding of National Symposium on Instrumentation NSI – 30	885	894
95	Effect of annealing on the films grown by Flame Hydrolysis Deposition system	Jaspal P. Bange, Lalit S. Patil and <b>D. K. Gautam</b>	Proceeding of Int. Conf. on Electronics and Photonics Materials, Devices and System EPMDs – 2006	B39	B41
96	Thickness dependence analysis of material parameter of 1-D photonic crystal	V. K. Tomar and <b>D. K. Gautam</b>	Proceeding of Int. Conf. on Electronics and Photonics Materials, Devices and System EPMDs – 2006 (IF: )	F8	F10
97	Simulation techniques of an optical ring filter / direction coupler for separation of 1300 nm and 1320 nm wavelengths	Rajdeep Gautam, Chitrarekha Chaudhari, D. S. Patil and <b>D. K. Gautam</b>	Proceeding of Int. Conf. on Electronics and Photonics Materials, Devices and System EPMDs – 2006 (IF: )	H30	H32
98	Recent trends and future challenges in the optoelectronics devices and material technology	<b>D. K. Gautam</b>	Keynote address in National Conference on advances in electronic materials and devices, held at Bilaspur (JS) during March 5-6, 2006	01	15

99	Temperature dependent Analysis of Refractive index, Band gap and Recombination Coefficient in Nitride Semiconductor Lasers	S. A. Gaikwad*, E. P. Samuel, D. S. Patil and <b>D. K. Gautam</b>	Indian Journal of Applied and Pure Physics (Submitted)	--	--
100	Analysis of threshold parameters for GaN/AlGaIn heterostructure lasers	S. A. Gaikwad*, E. P. Samuel, D. S. Patil and <b>D. K. Gautam</b>	Pramana (Submitted)	--	--
101	Flame Hydrolysis Deposition System: An Economical Approach for Optical Device Fabrication	Jaspal P. Bange, L. S. Patil and <b>D. K. Gautam</b>	Submitted Indian Journal of Engineering and Material Sciences	--	--
102	Automation of Flame Hydrolysis Deposition System for Optical Device Fabrication	Jaspal P. Bange, L. S. Patil and <b>D. K. Gautam</b>	Submitted Journal of the Instrument Society of India (IF: )	--	--
103	Deposition and characterization of SiON films using HMDS for photonics applications	V.K.Tomar, D.S. Patil, and <b>D.K.Gautam</b>	Semiconductor Science and Technology, Vol. 22, 2007 <b>(IF: 3.6528 )</b>	43	48
104	Investigation of dispersive properties in 1-D porous silicon photonic crystals	R. S. Dubey, D.J. Patil, A.L. Khadke, and <b>D. K. Gautam</b>	Eighth Int. conference on optoelectronics, Fiber optics and photonics, PMD 89, 2006 (IF: )	450	450
105	Analysis of reflection and transmission in porous silicon photonic crystals.	D.J. Patil, A.L. Khadke, R. S. Dubey, and <b>D. K. Gautam</b>	Eighth Int. conference on optoelectronics, Fiber optics and photonics, PMD 90, 2006 (IF: )	451	451
106	Temperature dependence analysis of silicon nitride films for photonics applications	V.K.Tomar, L.S. Patil, and <b>D.K.Gautam</b>	Eighth Int. conference on optoelectronics, Fiber optics and photonics PMD 60, 2006 (IF: )	284	284
107	Simulator for solving Poissons equation in GaN/AlGaIn double heterostructure laser diode	S.A. Gaikwad, D.S. Patil, and <b>D. K. Gautam</b>	Eighth Int. conference on optoelectronics, Fiber optics and photonics, PMD 12, 2006 (IF: )	214	214
108	FTIR Analysis of SiON films for Photonics Wave-guide Applications	V.K.Tomar, L.S. Patil, and <b>D.K.Gautam</b>	National laser Symposium (NLS- 6), 12.10, 2006. (IF: )	93	93

109	Photonic Bandgap Analysis in One-dimensional Porous Silicon Photonic Crystal by Transfer Matrix Method	R. S. Dubey and <b>D. K. Gautam</b>	Optoelectronics and Advanced Materials-Rapid Communication, Vol. 1, No. 9, 2007 <b>(IF: 0.304 )</b>	436	441
110	Investigation of Optical properties of One-Dimensional Photonic Crystal by Coupled Mod Theory	R. S. Dubey and <b>D. K. Gautam</b>	Optoelectronics and Advanced Materials-Rapid Communication, Vol. 1, No. 11, 2007 <b>(IF: 0.304)</b>	563	567
111	Synthesis and Analysis of Porous Silicon for Applications in Fabricating 1-D Photonic Crystals	R. S. Dubey and <b>D. K. Gautam</b>	Journal of Material Science, Vol. 4, No. 2, 2007 <b>(IF: 0.526)</b>	----	----
112	Development of Simulation Tools to study Optical Properties of One-Dimensional Photonic Crystal	R. S. Dubey and <b>D. K. Gautam</b>	Journal of Electromagnetic Waves and Applications, Vol. 22, 2008 <b>(IF: 2.96 )</b>	849	860
113	Fabrication of One-Dimensional Photonic Crystal by Using Porous Silicon layers	R. S. Dubey, L.S. Patil, J.P. Bange and <b>D. K. Gautam</b>	Optoelectronics and Advanced Materials-Rapid Communication, Vol. 1, No. 12, 2007 <b>(IF: 0.304)</b>	655	658
114	Investigation of Electric Field Distribution in One-Dimensional Photonic Crystal Waveguides	R. S. Dubey and <b>D. K. Gautam</b>	Journal of Electromagnetic Waves and Applications, Vol. 22, 2008 <b>(IF: 2.96 )</b>	1395	1402
115	Computer Simulation of Group Velocity of Propagating Photons in One-Dimensional Photonic Crystals	R. S. Dubey and <b>D. K. Gautam</b>	Accepted in Journal of Optics A: Pure and Applied Optics	----	----
116	Spectroscopic Analysis of Si-rich Silicon oxide Films deposited by Thermal-CVD using organosilicon compounds	V. K. Tomar <sup>1</sup> and <b>D. K. Gautam</b> <sup>2</sup>	4 <sup>th</sup> International Conference on Spectroscopic Ellipsometry", at Stockholm, held on 11-15 <sup>th</sup> June-2007, Thp.98	310	
117	Effect of deposition temperature on FTIR analysis of silicon nitride films	V. K. Tomar_ and <b>D. K. Gautam</b>	Presented in National conference "AMS-07" held on, 27 <sup>th</sup> Jan-2007, CP-34	32	
118	Infrared Analysis of Si-rich Silicon oxide Films for Photonics Applications	V. K. Tomar_ and <b>D. K. Gautam</b> *	Published National conference on Contemporary Optics and Applications", held on 1-3 <sup>rd</sup> March-07	13	14

119	Optimization and Analysis of Photonic Band Gap Material For Optoelectronics Devices Applications	V. K. Tomar and D. K. <b>Gautam</b>	Presented in National Conference on Nano, Bio and Information Technology Integration, at Sanjay Institute of Engg. and Management, Mathura, held on 23 <sup>rd</sup> to 25 <sup>th</sup> March, 2007	PO-09	
120	Deposition and Characterization of Si-rich Silicon oxide Films using HMDS for Integrated Photonics	V. K. Tomar and D. K. <b>Gautam</b>	Journal of Material science and semiconductor processing, Vol. 10, 2007 <b>(IF: 0.944 )</b>	200	205
121	Deposition and Characterization of Silicon nitride films using HMDS for Photonics Wave-guides	V. K. Tomar, L. S. Patil, and D. K. <b>Gautam*</b>	International "Journal of Optoelectronics and Advanced Materials <b>(IF: 0.46)</b>	----	----
122	Analysis of Group Velocity at 1D Photonic Band Edges	R. S. Dubey and D. K. <b>Gautam</b>	Published in National conference on Contemporary Optics and Applications", held on 1-3 <sup>rd</sup> March-07		
123	Effect of deposition temperature on the chemical properties of SiN <sub>x</sub> films	V. K. Tomar and D. K. <b>Gautam</b>	Proceedings of International Conference on Microwaves and Optoelectronics (ICMO-2007)	93	97
124	Analysis of Optical Parameters of 1D Porous Silicon Photonic Crystals for Biosensors Applications	R. S. Dubey and D. K. <b>Gautam</b>	Proceedings of International Conference on Microwaves and Optoelectronics (ICMO-2007)	161	167
125	Growth of SiO <sub>2</sub> Films by Flame Hydrolysis Deposition System for Biochips Application	Jaspal P. Bange, L. S Patil and D.K. <b>Gautam</b>	Proceedings of International Conference on Microwaves and Optoelectronics (ICMO-2007)	168	176
126	Analysis of Photon Propagation in One-Dimensional Photonic Crystal Microcavities	Amol Karle, Faheem Hasan, R.S. Dubey and D.K. <b>Gautam</b>	Proceedings of International Conference on Microwaves and Optoelectronics (ICMO-2007)	182	187
127	State-of-the-art of Manufacturing of Optoelectronics Devices Using Thin Film Technologies	D.K. <b>Gautam</b> (Invited Talk)	Proceedings of International Conference on Microwaves and Optoelectronics (ICMO-2007)	427	438

128	Investigation of Optical Properties of Photons in One-Dimensional Photonic Crystals	R. S. Dubey and <b>D. K. Gautam</b>	Presented in National Laser Symposium held on 17-19 Dec,2007at M.S. University, Vadodara		
129	Computer Analysis of Optical Parameters of One-Dimensional Photonic Crystals by Coupled Mode Theory	Amol Karle, Faheem Hasan, R.S. Dubey and <b>D.K. Gautam</b>	Presented in National Laser Symposium held on 17-19 Dec,2007at M.S. University, Vadodara		
130	A Study of Omnidirectional Reflections Bands in One-Dimensional Photonic Crystals	Faheem Hasan, Amol Karle, R.S. Dubey and <b>D.K. Gautam</b>	Presented in National Laser Symposium held on 17-19 Dec,2007at M.S. University, Vadodara		
131	Propagation of electromagnetic waves in 1D finite photonic crystals for the investigation of linear properties	R. S. Dubey and <b>D.K. Gautam</b>	Accepted in Journal of Optics, 2008 <b>(IF: 1.765 )</b>	----	----
132	Growth and characterization of SiO <sub>2</sub> films deposited by flame hydrolysis deposition system for photonic device application	J. P. Bange, L. S. Patil and <b>D. K. Gautam</b>	Progress in Electromagnetics Research M, Vol. 3, 2008 <b>(HI: 13)</b>	165	175
133	Deposition of oriented nanocrystalline TiO <sub>2</sub> thin films	Deepak R. Patil, Lalit S. Patil, Jaspal P. Bange and <b>D. K. Gautam</b>	Journal of Optoelectronics and Advance materials, Vol. 10, No. 12, 2008 <b>(HI: 25)</b>	3251	3256
134	Effect of OMCTS flow rate on SiO <sub>2</sub> films grown by Falme Hydrolysis System	J. P. Bange, L. S. Patil and <b>D. K. Gautam</b>	Journal of Optoelectronics and Advanced Materials Rapid Communication, Vol. 4(4), 2010 <b>(IF: 0.46 )</b>	----	----
135	“Investigation of Electric Field Distribution in One-Dimensional Photonic Crystal Waveguides”	<b>R. S. Dubey and D. K. Gautam,</b>	J. of Electromagn.Waves and Appl., <b>Vol. 22,</b> 2008. <b>(IF: 2.965 )</b>	1395	1402
136	Propagation of Electromagnetic Waves in 1D Finite Photonic Crystals for the Investigation of Linear Properties	<b>R. S. Dubey and D. K. Gautam</b>	Journal of Modern Optics, Vol. 56, No.4 (2009). <b>(IF: 1.170 )</b>	487	495
137	Investigation of optical Properties of one dimensional photonic crystals by coupled mode theory <i>Advanced Materials-</i>	<b>R. S. Dubey and D. K. Gautam</b>	<i>Optoelectronics rapid Communications, Vol. 1, no.11, pp. (2007).</i> <b>(HI: 9 )</b>	561	567

138	Synthesis and characterization of nonoporous silicon layers for its possible Applications in Optoelectronics”,	<b>R. S. Dubey and D. K. Gautam</b>	<i>Journal of Optoelectronics and Biomedical materials, Vol1, No.1, (2009). (IF: 0.688)</i>	8	14
139	Growth and characterization of SiO <sub>2</sub> films deposited by flame hydrolysis deposition system for photonic device application	<b>J. P. Bange, L. S. Patil and D. K. Gautam,</b>	Progress in Electromagnetics Research M, Vol. 3, (2008). <b>(HI: 13 )</b>	165	175
140	Deposition of oriented nanocrystalline TiO <sub>2</sub> thin films,	<b>Deepak R. Patil, Lalit S. Patil, Jaspal P. Bange and D. K. Gautam,</b>	Journal of Optoelectronics and Advance materials, Vol. 10, No. 12, (2008). <b>(HI: 25)</b>	3251	3256
141	Study of Omnidirectional Reflectors for Photonic Waveguide Applications”,	<b>R. S. Dubey, J. P. Bange and D. K. Gautam,</b>	Presented in Photonics Conference 2008, held in 14-17 Dec. 2008 at IIT, Delhi.		
142	Behavior of Electromagnetic Waves in One-Dimensional Photonic Crystals: A Study, Progress in Electromagnetics Research Symposium	<b>R. S. Dubey and D. K. Gautam,</b>	(PIERS 2009) held in March 23–27, 2009 in Beijing, China.		
143	Influence of Titanium-tetra-isopropoxide flow in TiO <sub>2</sub> doped SiO <sub>2</sub> films for waveguide applications,	Jaspal P. Bange, Lalit S. Patil and D. K. Gautam,	Journal of Optoelectronics & Biomedical Materials Vol. 6 No.4, 2009. <b>(IF: 0.688 )</b>	319	324
144	Growth of SiO <sub>2</sub> films by Flame Hydrolysis Deposition System for Biosensor Application,	J. P. Bange, L. S. Patil and D. K. Gautam	Frontiers of Microwave and Optoelectronics, 2008. <b>(IF: 0.286)</b>	168	176
145	Performance Evaluation of Squaring operation by Vedic Mathematics	Prabha Kasaliwal, B.P.Patil, and D.K.Gautam	IETE Journal of Research, Vol.5 (2011) <b>(IF: 0.2 )</b>	39	41
146	Synthesis and Characterization of Porus silicon layers for 1D photonic crystal applications	R.S.Dubey and D.K.Gautam	Int. Journal of light and electron optics, Optik, Vol. 122 (2011) <b>(IF: 0.526)</b>	494	497

147	Near Field Computation in 1D Photonic Crystal Waveguides	R.S.Dubey and D.K.Gautam	Vol 50, No.3	269	276
148	Porous silicon layers prepared by electrochemical etching for application in silicon thin film solar cells	R.S. Dubey, D.K. Gautam	Superlattices and Microstructures Volume 50, Issue 3, September 2011 (IF: 1.487)	269	276
149	“Accreditation of Engineers for effective implementation of Washington Accord”	First word submit on accreditation (WOSA 2012)	March 21-28, 2012	60	73
<b>PATENTS</b>					
01	Metal Semiconductor field operating optical switches (MESFOOS) for high speed operation	D. K. Gautam and K. Ishida	Japanese Patent digest Hitachi Patent (1993)	1	20
02	Plasma Enhanced Chemical Vapor Deposition (PECVD) system for film deposition using Organometals.	D. K. Gautam and Patil. L. S.	Submitted	----	----
03	Gas Delivery system into the vacuum chamber	D. K. Gautam and Patil. L. S.	Submitted	----	----
04	Design of condenser for vaporized liquid delivery system into the vacuum chamber	D. K. Gautam and Patil. L. S.	Submitted	----	----
05	Design of gas showers with respect to the pumping port position	D. K. Gautam and Patil. L. S.	Submitted	----	----
<b>BOOKS</b>					
01	Broad band optical fiber communication technologies published by Nirali publications, Pune (M.S.) edited by Prof. D.K.Gautam, (2001).				
02	Proceedings Of International Conference on Optoelectronics Technology – ICOT- 2004, published by Nirali publications, Pune (M.S.) edited by Prof. D. K. Gautam, (2004).				
03	Research Reviews of Department of Electronics, North Maharashtra University, Jalgaon, published by Nirali publications, Pune (M.S.) edited by Prof. D. K. Gautam, (2005).				
04	Proceedings of the International Conference on MEMS and Optoelectronics Technologies, 22-23, Jan. 2010 at Narasapur (A.P.) Author and Editor in Chief.				
05	Proc. of the Int. conference on Nanoscience, Engineering and Advanced Computing, held at Narasapur, A.P., during July 8-10, (2011), Vol. 1,2,3. Author and Editor in Chief.				



## **10. Important conferences organized under the chairmanship of Professor D. K. Gautam**

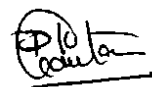
- 1) National Workshop on Recent trends in Optical Communication Technology**, North Maharashtra University, Jalgaon, 1999.
- 2) National Workshop on WDM Technology**, North Maharashtra University, Jalgaon, 2000.
- 3) International Conference on Broad Band Optical Fiber Technology, BBOFCT – 2001**, North Maharashtra University, Jalgaon, 2001.
- 4) International Conference on Optoelectronics Technology, ICOT-2004**, North Maharashtra University, Jalgaon.
- 5) First National Language Congress and conference on recent trends and future challenges for research in languages**, 23-24 Sept, 2005, at Amalner.
- 6) International Conference on Nanotechnology and Biosensors, 20-21, Jan. 2010 at Visakhapatnam (A.P.).**
- 7) International Conference on MEMS and Optoelectronics Technologies, 22-23, Jan. 2010 at Narasapur (A.P.).**
- 8) International Conference on Nanoscience, Engineering and Advanced Computing, ICNEAC-2011, held at Narsapur, A.P., during July 8-10, (2011).**

## 11. Names and addresses of referees:

- (i) **Prof. W. S. Khokle** : 102 Friends Cooperative Housing Society,  
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- (ii) **Dr. N.K. Thakare** : Chairman, New English School,  
(Former and Founder Vice Sakri Road, Morane,  
Chancellor of. N. M. Univ. **Dhule (M.S.)**  
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- (iii) **Prof. Kunio Tada** : Department of System for Intellectual,  
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- (iv) **Dr. Allamapparao** : Former Vice Chancellor, JNTU,  
**Kakinada, A.P, India**
- (v) **Dr. Sudhir U. Meshram** : Vice Chancellor, N.M. University,  
**Jalgaon, M.S., India**
- (vi) **Dr. R.S. Sirohi** : Vice Chancellor, Invertis University,  
(Former Director IIT N. Delhi) **Bareilly, India**
- (vii) **Dr. S. K. Joshi** : National Physical Laboratory,  
(Former Director General, CSIR, **New Delhi, India**  
N. Delhi)

The above information is brief and correct to the best of my knowledge.

Date: 14<sup>th</sup> January, 2013.



(D. K. Gautam)