

## DR. D. K. GAUTAM



**Professor and Head,**

[dkgautam\\_nmu@hotmail.com](mailto:dkgautam_nmu@hotmail.com) Office Phone: +91-257-2257475

**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 5 patents and more than 130 publications 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.

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.)**. 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 also can be cited in who is who in the world published by Marcuse (USA).

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.

**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)	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)	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)	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)	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)	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	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)	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	1	20
09	Selective tin diffusion techniques in open tube	<b>Gautam D. K.</b> and K. Ishida	Hitachi Kenpo (1993)	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)	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)	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)	981	985
13	High concentration selective	<b>Gautam D. K.</b> and	Infrared Physics and	7	15

	tin diffusion into GaAs substrate	K. Ishida	Technol., Vol. 36 (1995)		
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)	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)	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)	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)	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	-	-
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	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	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	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	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	42	47
24	Semiconductor Laser diode	Dnyaneshwar S. Patil,	Special issue of Laser	39	48

	modeling and analysis	and <b>D. K. Gautam</b>	Horizon on photonics, Vol. 5, No. 2, 2001		
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	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	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)	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)	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)	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)	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).	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	1981	1984
33	CAD tools for Semiconductor Laser	R.A. Wani and <b>Gautam D. K.</b>	Conference on Product Design Technology, Chandigarh, 1995.	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.	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.	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.	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	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	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	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	-	-
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	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)	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		
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	-	-
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	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	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	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	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	437	444
52	Design and Fabrication of	M. D. Shirsat,	Presented at	-	-

	ECG machine using VLSI electrode	A. M. Mahajan, and <b>D. K. Gautam</b>	International Conference Bio-Vision 2001 at IISc, Bangalore during Dec. 21-24, 2001		
53	Design and fabrication of Demultiplexers for DWDM Applications	<b>D. K. Gautam</b> , Chitrankha 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.	OMDP -17	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> / Ga <sub>N</sub> 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 Ga <sub>N</sub> 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 NSI27, 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	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 (In Press)	-	-
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	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	-	-
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)	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	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	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	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	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	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	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	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	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	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	OMD P47
85	Temperature dependence of effective bandgap, refractive index, dielectric function and model parameters $C(x,T)$ , $A(x,T)$ of $Al_xGa_{1-x}N$	S. A. Gaikwad and <b>D. K. Gautam</b>	Proceeding of International Conference On Fiber Optics and Photonics - PHOTONICS 2004		

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	OMD 4.4
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 / AlGa <sub>N</sub> 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	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	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	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	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	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	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/AlGaN 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		-
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	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	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	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	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	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.	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	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	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>	Accepted in Journal of Material Science, Vol. 4, No. 2, 2007		----
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	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	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	1395	1402
115	Computer Simulation of Group Velocity of Propagating Photons in One-Dimensional Photonic	R. S. Dubey and <b>D. K. Gautam</b>	Accepted in Journal of Optics A: Pure and Applied Optics		----

	Crystals				
116	Spectroscopic Analysis of Si-rich Silicon oxide Films deposited by Thermal-CVD using organosilicon compounds	V. K. Tomar and <b>D. K. Gautam</b>	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	V. K. Tomar and <b>D. K.</b>	Presented in National	PO-09	

	Photonic Band Gap Material For Optoelectronics Devices Applications	<b>Gautam</b>	Conference on Nano, Bio and Information Technology Integration, at Sanjay Institute of Engineering and Management, Mathura, held on 23 <sup>rd</sup> to 25 <sup>th</sup> March, 2007		
120	Deposition and Characterization of Si-rich Silicon oxide Films using HMDS for Integrated Photonics	V. K. Tomar and <b>D. K. Gautam</b>	Journal of Material science and semiconductor processing, Vol. 10, 2007	200	205
121	Deposition and Characterization of Silicon nitride films using HMDS for Photonics Wave-guides	V. K. Tomar, L. S. Patil, and <b>D. K. Gautam*</b>	Submitted to International "Journal of Optoelectronics and Advanced Materials		
122	Analysis of Group Velocity at 1D Photonic Band Edges	R. S. Dubey and <b>D. K. 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 <b>and D. K. 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 <b>D. K. 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 <b>D.K. 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 <b>D.K. 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	<b>D.K. Gautam</b> (Invited Talk)	Proceedings of International Conference on Microwaves and Optoelectronics (ICMO-2007)	427	438
128	Investigation of Optical	R. S. Dubey and	Presented in National		

	Properties of Photons in One-Dimensional Photonic Crystals	<b>D. K. Gautam</b>	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		
<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).				