

## Dr. Jaspal Parganram Bange

01. Full Name : Dr. Jaspal Parganram Bange



02. Contact Information : Department of Electronics,  
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03. Education Qualification :

Examination	University/ Board	Month & Year of Passing	Subjects SPL/Gen	% of Marks	Class/Div/ Grade awarded
Ph.D.	NMU*, Jalgaon	April 2008	Electronics	----	Awarded
Master's Degree	NMU*, Jalgaon	December 1999	Electronics	66.30	Ist
Bachelor's Degree	NMU*, Jalgaon	June 1997	Electronics	64.16	Ist
Higher Secondary	Pune	March 1993	Science	58.67	IIInd
Matriculation SSC	Pune	March 1991	General	61.71	Ist

\* NMU: North Maharashtra University

04. Teaching Experience :

Sr. No.	Post	Organization	Period
01	Assistant Professor	Department of Electronics, North Maharashtra University, Jalgaon, India	09 <sup>th</sup> Aug. 2012 to Date

05. **Area of Research/Expertise** : Optoelectronic, Dielectric, Semiconductor materials, Polymer waveguides.

06. **Awards/Fellowships/prizes received** :

Sr. No.	Post	Organization	Period
01	<b>Post-doc Fellow</b>	Advanced Technology Research Center (GU-A TEC), Gunma University, Kiryu, JAPAN	16 <sup>th</sup> Feb. 2009 to 31 <sup>st</sup> March 2011
02	<b>Research Associate</b> In Council for Scientific and Industrial Research (CSIR) Sponsored project	Department of Electronics, North Maharashtra University, Jalgaon	20 <sup>th</sup> Feb. 2008 to 30 <sup>th</sup> June 2008
03	<b>Research Scientist</b> In Instrument Research and Development Establishment (IRDE) – Defence Research and Development Organization (DRDO) Sponsored project	Department of Electronics, North Maharashtra University, Jalgaon	1 <sup>st</sup> March 2005 to 28 <sup>th</sup> Feb. 2006
04	<b>Project Associate</b> In Department of Science and Technology (DST) Sponsored project Phase-II-E	Department of Electronics, North Maharashtra University, Jalgaon	2 <sup>nd</sup> May 2002 to 1 <sup>st</sup> May 2004
05	<b>Project Associate</b> In Department of Science and Technology (DST) Sponsored project Phase-II	Department of Electronics, North Maharashtra University, Jalgaon	1 <sup>st</sup> Sept. 2001 to 28 <sup>th</sup> Feb. 2002
06	<b>Project Assistant</b> In Council for Scientific and Industrial Research (CSIR) Sponsored project	Department of Electronics, North Maharashtra University, Jalgaon	5 <sup>th</sup> July 2001 to 30 <sup>th</sup> Aug. 2001
07	<b>Junior Research Fellow</b> In All India Council for Technical Education (AICTE) Sponsored project	Department of Electronics, North Maharashtra University, Jalgaon	1 <sup>st</sup> Feb. 2000 to 31 <sup>st</sup> Jan. 2001

07. **Number of Post Doc Students** : Nil

08. Number of Ph.D. Students Completed : Nil
09. Number of Ph.D. students on going : Nil
10. Number of M. Phil. Students completed : Nil
11. Number of M. Phil. Students on going : Nil
12. Number of Books Written : Nil
13. Number of Patents : Nil

14. Research Publications :

**Articles in Journals:**

1. **Jaspal Parganram Bange**, Mayank Kumar Singh, Kazusa Kano, Kenta Miura and Osamu Hanaizumi, "Structural analysis of RF sputtered Er doped Ta<sub>2</sub>O<sub>5</sub> films", **Journal of Key Engineering Materials, Vol. 459, 2011, 32-37 (Impact Factor 0.340)**.
2. **J. P. Bange**, Lalit S. Patil and D. K. Gautam, "Effect of OMCTS flow rate on SiO<sub>2</sub> films grown by flame Hydrolysis deposition", **Journal of Optoelectronics and Advanced Materials Rapid Communication, Vol. 4(4), 2010, 584-587 (Impact Factor 0.304)**.
3. **Jaspal P. Bange**, Lalit S. Patil and D. K. Gautam, "Influence of Titanium-tetra-isopropoxide flow in TiO<sub>2</sub> doped SiO<sub>2</sub> films for waveguide applications", **Journal of Optoelectronics & Biomedical Materials, Vol. 6, No.4, 2009, 319-324 (Impact Factor 0.0)**.
4. Mayank Kumar Singh, Genjoh Fusegi, Kazusa Kano, **Jaspal Parganram Bange**, Kenta Miura and Osamu Hanaizumi, "Intense Photoluminescence from erbium-doped tantalum oxide thin films deposited by sputtering", **IEICE Electronics Express, Vol. 6, No. 23, 2009, 1676-1382 (Impact Factor 0.46)**.
5. Deepak R. Patil, Lalit S. Patil, **Jaspal P. Bange**, D. K. Gautam, "Deposition of oriented nanocrystalline TiO<sub>2</sub> films", **Optoelectronics And Advanced Materials, Vol. 10, No. 12, 2008, 3251-3256 (Impact Factor 0.457)**.
6. **J. P. Bange**, L. S. Patil and D. K. Gautam, "Growth and characterization of SiO<sub>2</sub> films deposited by flame hydrolysis deposition system for photonics device application", **Progress In Electromagnetics Research M, Vol. 3, 2008, 165-175 (Impact Factor 0.0)**.
7. R. S. Dubey, L. S. Patil, **J. P. Bange**, D. K. Gautam, "Fabrication of one-dimensional photonic crystals using porous silicon layers", **Optoelectronics And Advanced Materials – Rapid Communications, Vol. 1, No. 12, 2007, 655-658 (Impact Factor 0.304)**.

8. A.M. Mahajan, L.S. Patil, **J. P. Bange** and D.K. Gautam, "TEOS-PECVD System for high growth rate deposition of SiO<sub>2</sub> films", '*Vacuum*', **Vol. 79, 2005, 194-202 (Impact Factor 1.317)**.
9. L. S. Patil, R. K. Pandey, **Jaspal P. Bange**, S. A. Gaikwad and D. K. Gautam, "Effect of deposition temperature on the chemical properties of thermally deposited Silicon Nitride Films", **Optical Material, Vol. 27, 2005, 663-670 (Impact Factor 2.023)**.
10. R. K. Pandey, L. S. Patil, **J. P. Bange**, D. K. Gautam, "Growth and Characterization of Silicon Nitride films for optoelectronics application", **Optical Material, Vol. 27, 2004, 139-146, (Impact Factor 2.023)**.
11. A. M. Mahajan, L. S. Patil, **J. P. Bange**, D. K. Gautam, "Growth of SiO<sub>2</sub> films by TEOS\_PECVD system for microelectronics applications", *Journal of Surface Coatings & Technology*, **Vol. 183, No. 2, 2004, 295-300 (Impact Factor 1.867)**.
12. R. K. Pandey, L. S. Patil, **J. P. Bange**, D. R. Patil, A. M. Mahajan D. S. Patil, D. K. Gautam, "Growth and Characterization of SiON thin films by using thermal-CVD machine", **Optical Materials, Vol. 25, 2004, 1-7 (Impact Factor 2.023)**.
13. A. M. Mahajan, L.S. Patil, **J. P. Bange**, and D. K. Gautam, "Growth and Characterization of SiO<sub>2</sub> films for the fabrication of Optical Waveguides", *Journal of Optics*, **Vol.31, No.2, 2002, 53-58 (Impact Factor 0.0)**.

#### **Articles in Books:**

1. **Jaspal P. Bange**, Lalit S. Patil and D. K. Gautam, "Growth of SiO<sub>2</sub> films by Flame Hydrolysis Deposition System for Biosensor Application", *Frontiers of Microwave and Optoelectronics*, **ISBN 978-81-89927-19-6, 2008, 168-176**.
2. R. K. Pandey, L. S. Patil, **J. P. Bange**, R. S. Dubey, S. A. Gaikwad and D. K. Gautam, "Effect of deposition temperature on the properties of Silicon nitride films grown by thermal CVD system", *Frontiers of Microwave and Optoelectronics*, **ISBN 81-88342-44-0, 2004, 298-302**.

#### **Articles in National / International Conference Proceedings:**

1. **Jaspal Parganram Bange**, Yuki Machida, Masato Uehara, Amarachukwu Valentine Umenyi, Kenta Miura and Osamu Hanaizumi, "Design and analysis of single mode polymer waveguide using PBW technique", *Proceedings of International Conference on Advanced Micro-Device Engineering*, **AMDE-2010, Japan, 2P37**.
2. **Jaspal P. Bange**, L.S. Patil and D. K. Gautam, "Comparison of TiO<sub>2</sub>-Doped SiO<sub>2</sub> Films from Two Organosilicon Precursors", *Asia Communications and Photonics Conference and Exhibition*, **ACP2010, Shanghai, China, P62**.

3. **Jaspal P. Bange**, L.S. Patil and D. K. Gautam, "Effect of substrate temperature on properties of SiO<sub>2</sub> films by Flame Hydrolysis", Proceedings of International conference on MEMS and Optoelectronics Technologies, **ICMOT-2010**, India, **50-52**.
4. **Jaspal P. Bange**, L.S. Patil and D. K. Gautam, "Synthesis of TiO<sub>2</sub> Films by Flame Hydrolysis Deposition System", Proceedings of International Conference on Nanotechnology and Biosensors, **ICNB-2010**, India, **82**.
5. Mayank Kumar Singh, Genjoh Fusegi, Kazusa Kano, **Jaspal P. Bange**, Kenta Miura and Osamu Hanaizumi, "Fabrication and optimization of green light emitting Er-Ta<sub>2</sub>O<sub>5</sub> films", International conference on Advanced Micro-Device Engineering, **AMDE-2009**, Japan, **2P25, PP 103**.
6. **Jaspal P. Bange**, O. Hanaizumi, Lalit S. Patil and D. K. Gautam, "TiO<sub>2</sub>-doped SiO<sub>2</sub> films deposited by Flame Hydrolysis Deposition system for waveguide applications", International Conference on Optics and Photonics-**ICOP 2009**, Chandigarh, India, **B3.6**.
7. **Jaspal P. Bange**, L. S. Patil and D. K. Gautam, "SiO<sub>2</sub>-TiO<sub>2</sub> Nano Composite Film by Flame Hydrolysis Deposition", Asia Communications and Photonics Conference and Exhibition, **ACP2009**, Shanghai, China **ISBN: 978-1-55752-877-3, THG3**.
8. **Jaspal P. Bange**, L. S. Patil and D. K. Gautam, "Effect of titanium tetra-isopropoxide flow rate on SiO<sub>2</sub>-TiO<sub>2</sub> composite films by FHD", International Conf. on Advanced Materials, **ICAM2009**, Rio de Janeiro, Brazil, **A576**.
9. **Jaspal P. Bange**, Lalit S. Patil and D. K. Gautam, "Effect of annealing on the films grown by Flame Hydrolysis Deposition system", Proceeding of International Conference on Electronics and Photonics Materials, Devices and System **EPMDS – 2006**, India, **B39-B41**.
10. **Jaspal P. Bange**, L. S. Patil and D. K. Gautam, "Automation of Flame Hydrolysis Deposition system for optical device fabrication", Proceeding of National Symposium on Instrumentation **NSI – 30**, India, **885-894**.
11. V. P. Chavan, E. R. Khan, Rajdeep Gautam, M. P. Bhole, **Jaspal P. Bange**, D. S. Patil and D. K. Gautam, "Monitoring and control of gas flow for the effective deposition of films in MOCVD for quantum well devices", Proceeding of International Conference on Optoelectronics Technology, **ICOT – 2004**, India, **472-480**.
12. **Jaspal P. Bange**, Lalit S. Patil, Vinod Patil, D. Bhavar, Suchita Bhangale and D. K. Gautam, "Automation of process parameters of indigenously developed FHD system", Proceeding of International Conference on Optoelectronics Technology, **ICOT – 2004**, India, **453-461**.
13. A. M. Mahajan, L. S. Patil, **J. P. Bange** and D. K. Gautam, "Effect of variation in O<sub>2</sub> / TEOS flow ration on properties of SiO<sub>2</sub> films deposited by PECVD", Proc. of Int. Conf. on Optoelectronics, Fiber optics and Photonics, **PHOTONICS – 2002**, Mumbai, India, **OMDP-17, PP 286**.

14. A. M. Mahajan, L. S. Patil, **J. P. Bange** and D. K. Gautam, "Effect of Chamber Pressure Variation on Refractive Index of SiO<sub>2</sub> Films Developed by PECVD", Proc. of int. conference on Broad Band Optical Fiber Communication Technology, **BBOFCT – 2001**, India, **283-286**.

15. Chitrarekha Chaudhari, Dnyaneshwar S. Patil, L. S. Patil, **J. P. Bange** and D. K. Gautam, "Technology development for the optical rib waveguide structures on silicon substrate", Proc. of international conference on fiber optics and photonics, **PHOTONICS 2000**, India, **786-788**.

15. **Research project completed** : Nil

16. **Research project on going** : Nil

17. **Consultancy Projects** : Nil

18. **Research project submitted** : Nil

19. **Scientific collaborators** : Nil

20. **Memberships** : Nil

21. **Administrative Work experience** :

Sr. No.	Post	Organization	Period
01	<b>Senior Project Officer</b>	Lovely Professional University, Jalandhar - Delhi G.T. Road (NH-1), Phagwara, Punjab (India) - 144411	16 <sup>th</sup> Jan. 2012 to 02 <sup>nd</sup> Aug. 2012

22. **Working experience with national bodies/national exposures** : Nil

23. **Working experience with international bodies/international exposures** : Nil

24. **Leadership experience** : Nil

25. **Serving on Editorial Boards** : Nil

26. **Technology Transferred** : Nil

27. **Any other activity done/going on** :

Organised the following activities at the Department of Electronics, North Maharashtra University, Jalgaon

- 1) Workshop on "Programmable Logic Controllers" during 25-26<sup>th</sup> January 2013.
- 2) Science day celebration on 28<sup>th</sup> February 2013.

**28. Contribution to University/School/Department :**

During the period 1<sup>st</sup> Feb. 2000 to 30<sup>th</sup> June 2008 I have been actively engaged in the development of Research Laboratory at the department of Electronics along with successful completion of the government funded research projects. The facilities developed indigenously includes the following

- 1) Class 10000 clean room for semiconductor material processing.
- 2) Design and fabrication of Spin coating machine.
- 3) Design and fabrication of Thermal Chemical Vapour Deposition (CVD) system for SiO<sub>2</sub> films.
- 4) Design and fabrication of Thermal Chemical Vapour Deposition (CVD) system for Silicon Nitride and Silicon oxynitride films.
- 5) Design and fabrication of vertical Thermal Chemical Vapour Deposition (CVD) system.
- 6) Design and fabrication of Liquid Phase Epitaxy system (LPE).
- 7) Design and fabrication of Plasma Enhanced Chemical Vapour Deposition system (PECVD).
- 8) Design and fabrication of Flame Hydrolysis Deposition (FHD) system.