

# CURRICULUM VITAE

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**Dr. Munish Aggarwal**  
**Male, 38 Year, Married**

## Correpondence Adress

# 76, Nav Nirmaan Janta colony, Jalandhar,  
(Punjab)

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## **CARRER OBJECTIVE:**

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Seeking an academic position as a researcher and Assistant Professor in the field of Physical Science. Perform research, including teaching courses and supervising students in their academic assignment and research work. A place where I can demonstrate my theoretical, technical, experimental skills and contribute to the development and better understanding of education in science for benefit.

## **ACADEMIC QUALIFICATION:**

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- **Year 2011** Ph.D. (Physics) from National Institute of Technology, Jalandhar with 7.25 CGPA.
- **Year 2003** M.Sc.(Physics) from Guru Nanak Dev University, Amritsar with 61.8% marks.
- **Year 1999** B.Sc.(Physics) from SRPAAB College Pathankot, under Guru Nanak Dev University with 57% marks.
- **Year 1996** **10+2** ( Comp sc.) from Maharaja Agrasen Model School, CD Block Pitam Pura, New Delhi.
- **Year 1994** **10<sup>th</sup>** from Maharaja Agrasen Model School, with 70 % Marks from CD Block, Pitam Pura, New Delhi

## **COURSE WORK STUDIED DURING PH.D.**

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- Magnetohydrodynamics and Plasma Physics
- Physics of Laser Plasma Interactions
- Research Methodology
- Advanced Computational Techniques

## **MATHEMATICAL TOOLS KNOWN:**

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- Fortran 77, Mathematica
- Origin 8.0, Latex

## AREAS OF INTERESTS:

1. Electrodynamics
2. Quantum Mechanics
3. Plasma Physics

## WORK EXPERIENCE

- Worked as a lecturer on Ad-hoc basis in **S.S.M College Dinanagar** w.e.f 15- July-2003 to 28-Feb-2004.
- Worked as a part time lecturer in **Govt. Polytechnic College** for Women in Amritsar.
- Worked as a part time lecturer in **Department of Electronics in Guru Nanak Dev University** w.e.f July-2005 to Nov-2005.
- Worked as a contract lecturer in **Department of Physics in Guru Nanak Dev University** w.e.f 27-Feb-2006 to 30-April-2006.
- Worked as Research Fellow along with TA/Ship in Department of Physics, **NIT Jalandhar under the project of Ministry of Human Resources and Development of India** w.e.f 18-Sep-2006 till 3-Dec-2010.
- Worked as Assistant Professor in Department of Physics on Adhoc basis, National Institute of Technology Jalandhar, w.e.f. 27-Jan-2011 to 3-June-2011.
- Working as Assistant Professor in Department of Applied Science, College of Engineering and Management, Kapurthala, on regular basis w.e.f 2- Aug – 2011 till 9/05/2013.
- *Working as Assistant Professor and Head of Department in Department of Applied Science, Lyallpur Khalsa College of Engineering, Jalandhar on regular basis w.e.f 3-June – 2013 till 1 May 2016 and Associate Professor w.e.f. 1 May 2016.*

## LIST OF SUBJECTS TAUGHT:

1. Quantum Mechanics	B.Sc.	July 2003 - Feb 2004
2. Nuclear Physics	B.Sc.	July 2003 - Feb 2004
3. Physics	Polytechnic	Oct 2004 - Jan 2005
4. Engg. Physics	B.Tech. (ECE)	July 2005- Nov. 2005
5. Radiation Physics	M.SC. Phy.(Hon)	Feb 2006- April 2006
6. Engg. Physics & Labs	B.Tech.	Sep 2006- Dec 2010

## LIST OF SUBJECTS TAUGHT:

7. Numerical Methods	M.Sc. (Phy)	Sep 2006-Dec 2010
8. Engg. Physics	B.Tech.	Jan 2011- June 2011
9. EMFT	B.Tech.	Jan 2011- June 2011
10. Optical Fiber Comm.	B.Tech.	Sep 2011-Dec 2012
11. EDAIC	B.Tech.	Sep 2011-Dec 2012
12. EMFT	B.Tech.	Jan 2012- June 2012
13. EDAIC	B.Tech.	Aug 2012- Dec 2012
14. Optical Fiber Comm.	B.Tech.	Jan 2013 -May 2013
15. Engineering Physics	B.Tech.	June 2013 –Till date

## SHORT TERM COURSE ATTENDED :

1. Attended five days short term course on Recent Trends in Advanced Materials and computing Technique jointly organized by Department of Physics and Department of Computer Science and Engg. In **National Institute of Technology Jalandhar w.e.f. 11 March 2013 - 15 March-2013.**

## INTERNATIONAL CONFERENCE /WORK SHOP ATTENDED:

1. Attended International Conference on Physics of Dusty Plasma **ICDP5 held at Ponta Delgada, Portugal** from 18May - 24 May 2008.
2. Presented paper entitled “ **Effect of Ponderomotive and relativistic nonlinearity on the Dynamics of Gaussian spikes on Gaussian laser beam in plasma**”, in the International symposium on waves, coherent structures and turbulence in plasmas, **IPR, Ahmedabad w.e.f 12 -15 Jan 2010.**
3. Presented paper entitled” **Guiding of Intense laser beam under the combined effect of Relativistic and Ponderomotive nonlinearity**” in the **37<sup>th</sup> EPS Conference on Plasma Physics, 21<sup>st</sup> to 25<sup>th</sup> June 2010 at Dublin City University, Ireland.**
4. Presented paper entitled “**Growth of Gaussian spike on Gaussian laser beam in relativistic magnetoplasma**” as **Oral** presentation in the **International Conference and School on Plasma Physics and Controlled Fusion**, held in period of September 17-22, 2012 in **Alushta (Crimea), Ukraine.**
5. Presented paper entitled "**Self focusing of laser beam under plasma density ramp in collisionless magnetoplasma**" as **Poster** presentation in the **Adjoint International Workshop on "Nano and micro-sized structures in plasmas"** held in period of September 17-22, 2012 in **Alushta (Crimea), Ukraine.**

## INTERNATIONAL CONFERENCE PROCEEDINGS

1. Guiding of intense laser beam under the combined effect of Ponderomotive and Relativistic nonlinearity. **Munish Aggarwal, Arvinder Singh, Tarsem Singh Gill.**  
**37<sup>th</sup> EPS Conference on Plasma Physics, Ireland 2010.**

## MEMBER OF NATIONAL/INTERNATIONAL BODIES

1. Member of Plasma Science Society of India, member ship number LM-611.

## NATIONAL CONFERENCE /WORK SHOP ATTENDED:

1. Paper presented entitled “**Optical guiding of elliptical laser beam in non-uniform plasma**” in 20th National Symposium on Plasma Science and Technology, **PLASMA 2005 International School of Photonics, Cochin University of Science and Technology, Kochi India, 5 - 7 Dec 2005.**
2. Paper presented entitled “**Dynamics of filament formation in magnetized laser produced plasma.**” in 21st National Symposium on Plasma Science and Technology, **B.A.R.C, Mumbai, 19-22 Dec 2006.**
3. Paper presented entitled “**Optical guiding of elliptical laser beam in Relativistic plasma**” in 22nd National Symposium on Plasma Science and Technology, **IPR, Ahmedabad, 10-13 Dec 2007.**
4. Paper presented entitled “**Optical guiding of cylindrical laser beam in Relativistic plasma**” in 23rd National Symposium on Plasma Science and Technology, **B.A.R.C, Mumbai, 10-13 Dec 2008.**
5. Attended 24th National Symposium on Plasma Science and Technology, **NIT Hamirpur, H.P, 08-11 Dec 2009.**
6. Paper presented entitled “**Guiding of elliptical laser beam in Collisionless plasma**” in 26th National Symposium on Plasma Science and Technology, **BITS Mesra, Patna, 20-23 Dec 2011.**
7. Attended Workshop on Laser and its Applications Sponsored by Technical education quality improvement Programme (TEQIP) organized by **Department of Physics Dr. B R Ambedkar National Institute of Technology Jalandhar, Sep-8, 2007. (India).**
8. Attended Seventh Biennial DAE-BRNS symposium on Nuclear and Radiochemistry (**NUCAR 2005**) held at **Guru Nanak Dev University, Amritsar, India during 15-18 March, 2005.**
9. Attended and presented the paper entitled “Self-focusing of Quadruple Gaussian laser beam in collisionless magnetoplasma” in the **QIP/CEP Topical conference on laser driven charged particle acceleration and Applications held on April 5-7, 2013 at Department of Physics, IIT Delhi.**
10. Attended and presented the paper entitled “Self-focusing of Cosh Gaussian Laser beam in plasma with density ripple at DAV National Congress on Science and Technology held at **DAV Engineering and Technology, Jalandhar (Punjab) on May 30-31, 2013.**
11. Attended and presented a paper on Self focusing of Cosh Gaussian laser beam in Relativistic Ponderomotive plasma in cold quantum plasma under plasma density ramp in the **29<sup>th</sup> National Symposium on plasma science and Technology, held at Mahatama Gandhi University, from 8-11 December, 2014 Kottiyam, Kerela, India.**
12. Attended and presented a paper on Self focusing of Gaussian laser beam in Relativistic Ponderomotive nonlinearity in cold quantum plasma in the **30<sup>th</sup> National Symposium on plasma science and Technology, held at Saha Institute of Nuclear Physics, from 1-4 December, 2015 Kolkatta, , India.**

## LIST OF PUBLICATIONS IN INTERNATIONAL JOURNAL

1. Optical Guiding of elliptical laser beam in nonuniform plasma  
Arvinder Singh, **Munish Aggarwal**, Tarsem Singh Gill.  
International Journal of Light and Electron optics, 73 (2008), 921-932, Elsevier.
2. Dynamics of filament formation in magnetized laser produced plasma.  
Arvinder Singh, **Munish Aggarwal**, Tarsem Singh Gill  
Phys. Scr. 80, (2009), 015502 (5pp), Royal Swedish Academy of Sciences.
3. Dynamics of Gaussian spikes on Gaussian laser beam in relativistic plasma.  
Arvinder Singh, **Munish Aggarwal**, Tarsem Singh Gill  
Laser and Particle Beams, Vol. 27, Issue 4, Dec 2009, 579-585  
Cambridge University Press, USA.
4. Dynamics of filament formation in Laser produced Collisional Magnetoplasma.  
Arvinder Singh, **Munish Aggarwal**, Tarsem Singh Gill  
Contrib. Plasma Phys., 50, No. 2, 156 – 165, (2010), Wiley-VCH.
5. Propagation of Cosh Gaussian laser beam in plasma with density ripple in relativistic – ponderomotive regime  
**Munish Aggarwal**, Shivani Vij, Niti Kant  
Optik 125 (2014) 5081–5084
6. Resonant third harmonic generation in clusters with density ripple: Effect of pulse slippage  
Shivani Vij, Niti Kant, **Munish Aggarwal**  
Laser and Particle Beams (2015) **In press**
7. Wiggler magnetic field assisted second harmonic generation in clusters  
**Munish Aggarwal**, Shivani Vij, Niti Kant  
Eur. Phys. J. D. (2015) 69:149
8. Propagation of circularly polarized quadruple Gaussian laser beam in magnetoplasma  
**Munish Aggarwal**, Shivani Vij, Niti Kant  
Optik, 5710-5714 (2015)
9. Self focusing of Quadruple Gaussian laser beam in an in homogeneous magnetized plasma with ponderomotive nonlinearity: Effect of Linear absorption.  
**Munish Aggarwal**, Shivani Vij, Niti Kant
10. Propagation of Gaussian laser beam through magnetized cold plasma with increasing density ramp.  
Munish Aggarwal, Harish Kumar, Niti Kant
11. Combined effect of relativistic and ponderomotive nonlinearity on self-focusing of Gaussian laser beam in a cold quantum plasma  
Harish Kumar, **Munish Aggarwal**, Richa, T.S. Gill

## MAJOR AREA OF RESEARCH WORK

1. Laser Plasma Interactions
2. Dusty Plasma
3. Tera-Hertz Generations
4. Cluster Plasma

## STUDENTS ENROLLED IN PH.D.

1. Harish Kalia, enrolled under Punjab Technical University, Enrollment Number – 1213018.
2. Vimmy Goyal, enrolled under Punjab Technical University, Enrollment Number – 1311016.
3. Shivani Vij, enrolled under Punjab Technical University, Enrollment Number- 1311028.
4. Gagandeep Kaur, Asst Proff, North West Institute Moga, enrolled under Punjab Technical University, enrollment number PTU, enrollment number yet to come.
5. Sona Bansal, Asst Proff, Sikh National College Banga enrolled under Punjab Technical University, enrollment number PTU, enrollment number yet to come.

## EXTRA CURRICULAR ACTIVITIES:

- Played Table Tennis in Inter College 2001-2003, under GNDU, during M.Sc.
- Ex. Director of Physical science society of NITJ in Department of Physics in 2009-2010.
- Student Member of Campus Amenities in National Institute of Technology Jalandhar from 2008-2010.
- Student Member of Disciplinary committee in National Institute of Technology Jalandhar from 2008-2010.
- Participated two Ten days camps of NSS Scheme organized by **SRPAAB** College Pathankot from 1997-1998.

## PERSONAL PROFILE:

Father's Name : Sh. Balraj Aggarwal  
Mother's Name : Smt. Meena Aggarwal  
Date of Birth : 27-Dec-1977  
Marital status : Married  
Languages Known : English, Hindi and Punjabi  
Nationality : Indian

## HOBBIES:

- Playing Cricket, watching and Following, Table Tennis, Badminton
- Listening Music, Watching Movies
- Travelling

## REFERENCES:

- ❖ Dr. Arvinder Singh, Professor in Department of Physics  
Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab  
GT Road Bye Pass, 144011 INDIA  
**Mob-** +91 9988803134, **Tel:** 0181-2690301-3 Extn 225, **FAX:** 0181-2690320  
**Website:** [www.nitj.ac.in](http://www.nitj.ac.in), **Email:** [arvinder6@lycos.com](mailto:arvinder6@lycos.com).
- ❖ Dr Tarsem Singh Gill, Professor Emeritus, Department of Physics,  
Guru Nanak Dev University, Amritsar, Punjab, India  
**Mob :** +91-9417273243, **Email:** [gillsema@yahoo.co.in](mailto:gillsema@yahoo.co.in).
- ❖ Dr Kuldeep Singh, Retd. Reader, Department of Physics  
Guru Nanak Dev University, Amritsar, Punjab, India  
**Mob :** +91- 9914141749, **Email:** [kdsingh50@yahoo.com](mailto:kdsingh50@yahoo.com), [kuldipsingh50@gmail.com](mailto:kuldipsingh50@gmail.com)

**DECLARATION:**

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I hereby declare that all the information stated above is true to my knowledge and belief.

**Date: 09 January 2016**

**Place: Jalandhar**

**Dr. Munish Aggarwal**