



Title	Prof./Dr.	First Name	DEVKI NANDAN	Last Name	GUPTA	Photograph
Designation	Assistant Professor					
Address (Office)	Department of Physics & Astrophysics University of Delhi (North Campus), Delhi – 110007, India Ph.: +91 - 11 – 27667793 (O)					
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Email	dngupta@physics.du.ac.in , dngupta2001@gmail.com					
Educational Qualifications						
Degree	Institution				Year	
Ph.D. (Physics)	Rajasthan University, Jaipur/Indian Institute of Technology Delhi, India <u>Thesis Topic</u> : Nonlinear Interaction of Electromagnetic Waves and Electron Beams with Plasmas				March 2004	
M. Sc. (Physics)	Rajasthan University, Jaipur, Rajasthan				2000	
B. Sc.	Rajasthan University, Jaipur, Rajasthan				1998	
Career Profile						
<ol style="list-style-type: none"> 1. Assistant Professor (July 2010-todate), Department of Physics and Astrophysics, University of Delhi (North Campus), Delhi-110007, India. 2. Manager-Technology (Oct. 2007-June2010), Corporate R&D Centre, Crompton Greaves Ltd., Mumbai-42, India. 3. Research Scientist (June 2005-Aug. 2007), Centre for Advanced Accelerators, Korea Electro-Technology Research Institute, Changwon City, South Korea. 4. Postdoctoral Research Scientist (April 2004-May 2005), Department of Physics, Pohang University of Science and Technology, Pohang City, South Korea. 5. Project Associate (Dec. 2002-March 2004), Department of Physics, Indian Institute of Technology, New Delhi-16, India 						
Administrative/Management Assignments						
<ol style="list-style-type: none"> 1. Member, Executive Committee of the Department of Physics and Astrophysics, University of Delhi (Year 2011-12). 						

2. Member, Workshop Committee of the Department of Physics and Astrophysics, University of Delhi (Year 2011-12 & 2012-13 & 2013-14).
3. Member, Computer Committee of the Department of Physics and Astrophysics, University of Delhi (2014-15, 2016-17, 2017-18, 2018-19).
4. Member, Examination Committee of the Department of Physics and Astrophysics, University of Delhi (2014-15, 2015-16, 2017-18, 2018-2019).
5. Member, Local Organizing Committee, International Conference on Physics of Dusty Plasmas (ICPDP-2014), 3-7 March 2014, New Delhi, India.
6. Member, Screening Committee, International Symposium on Discharges and Electrical Insulation in Vacuum (ISDEIV-2014), Sept 28-October 3, 2014 at Nehru Centre, Worli, Mumbai, India
7. Member, Conference Advisory Committee, International Conference on Photonics, Metamaterials and Plasmonics (PMP-2019), February 14-16, 2019, Jaypee Institute of Information Technology (JIIT), Noida, India.
8. Conference Co-convenor and Chairman, Local Organizing Committee, 33rd National Symposium on Plasma Science and Technology "Plasma 2018" (Dec.04-Dec. 07, 2018), Department of Physics and Astrophysics, University of Delhi, Delhi-7, India.

Areas of Interest / Specialization

Laser-Plasma Interactions (Theory and Simulation):

- Laser-Plasma based Particle Accelerators
- Laser interactions with matter/materials/X-ray/THz radiation Generation
- Nonlinear Plasma Dynamics and Arc Modeling
- Laser Pulse Amplification and PIC Simulations

Subjects Taught

@ Delhi University, Delhi (M.Sc. and M.Tech)

1. Plasma Physics and Nuclear Fusion Reactors -I (Theory course)
2. Plasma Physics and Nuclear Fusion Reactors -II (Theory course)
3. Applied Thermodynamics (Theory Course)
4. Plasma Physics and Nuclear Measurement Lab.-I (Lab.)
5. Plasma Physics and Nuclear Measurement Lab.-II (Lab.)
6. Wave and Optics Lab. (Lab.)
7. Computer Lab. (Lab.)

Research Guidance

- 4 student have completed Ph.D. thesis
- 5 students are working for Ph.D. program
- 1 Postdoc (DST-NPDF) –Completed (Feb. 2019)
- 2 M. Sc. thesis completed
- 2 M. Tech. thesis completed

Research Projects

1. "Ultrafast laser interactions with plasmas by particle-in-cell simulations", Department of Science and Technology (DST), Govt. of India, Cost: 23.76 Lakh for three years, Aug. 2012-March 2016 (Completed).

2. "Investigation on ultra-short pulse petawatt laser interaction with plasmas and its applications for particle acceleration and generation of terahertz radiation", Department of Science and Technology (DST), Govt. of India and Russian Foundation of Basic Research (RFBR), Govt. of Russia (Indo-Russian International Joint Proposal), **Cost of 7.9 Lakh** for two years from Nov. 2012 (Completed).
3. "Electron and ion accelerations from laser-plasma interactions" under Indo-German (DST-DAAD) PPP-2015 scheme of Department of Science and Technology (DST), **Cost of 9.8 Lakh** for two year from April 2015 (Completed).
4. "Tunable radiation source from laser-plasma based nonlinearities" Department of Science and Technology (DST), Govt. of India and Russian Foundation of Basic Research (RFBR), Govt. of Russia (Indo-Russian International Joint Proposal), **Cost of 16.80 Lakh** for two years from June. 2015 (Completed).
5. Laser-plasma interactions in strongly coupled regime, Department of Atomic Energy, BRNS, Govt. of India, **Cost of 21 Lakh** for three year (Completed)
6. Completed three R&D minor projects supported by Delhi University.

Research Collaboration

1. Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, South Korea
2. Centre for Excellence in Basic Science, University of Mumbai-Department of Atomic Energy (UM-DAE), Mumbai, India
3. Institute of Radiation Physics, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Dresden, Germany.
4. Department of Applied Physics, University of Strathclyde, Glasgow, Scotland
5. Centre de Physique Theorique, Ecole Polytechnique, Palaiseau Cedex, France
6. Sternberg Astronomical Institute of Moscow State University, Moscow, Russia

Awards and Distinctions

1. RSE (Royal Society of Edinburgh)-INSA Visiting Fellowship under bilateral exchange program to visit University of Strathclyde, Glasgow, Scotland (July 2012).
2. Active referee of leading scientific research journals published from American Physical Society, American Institute of Physics, Cambridge Press, Institute of Physics, and Elsevier, Springers Publications.
3. Biography inclusion in "Who's Who in Science and Engineering" (2007), Marquis Who's Who, NJ 07974, USA.
4. One of my research paper has been reviewed by a US news papers entitled "Research from University of Delhi Provide New Insights into Physics Research" (<http://electronics.verticalnews.com/articles/6828674.html>)
5. Participated in Fourth School of Beam Physics, (Dec.27, 1999-Jan.7, 2000), Center for Advanced Technology, Indore, India
6. Participated in ICTP Summer School of Theoretical Physics, (July 5, -July 21, 2004), Abdul Salam International Center for Theoretical Physics (ICTP), Trieste, Italy.

International Visits

1. Visiting Faculty, June-2018, School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, South Korea.

2. **Visiting Faculty, June, 2017**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
3. **Visiting Faculty, June, 2016**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
4. **Visiting Faculty, June, 2015**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
5. **Visiting Research Faculty, Dec. 2014**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
6. **Academic Visitor (under DAAD project), 31st May-27th June 2015**, Helmholtz-Zentrum Dresden-Rossendorf (HZDR), Dresden, **Germany**.
7. **Visiting Research Faculty, June 28th-July 18th, 2015**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
8. **International Research Project Investigator (Under RFBR project), July 2014**, Sternberg Astronomical Institute of Moscow State University, Universitetsky prosp. 13, Moscow, 119992, **Russia**
9. **International Research Project Investigator (Under RFBR project), July 2013**, Sternberg Astronomical Institute of Moscow State University, Universitetsky prosp. 13, Moscow, 119992, **Russia**
10. **Visiting Research Faculty, May 24th-June 24th, 2014**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
11. **Visiting Research Faculty, May 16th-July 1st, 2013**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
12. **Academic Visitor, July 2012**, Department of Applied Physics, University of Strathclyde, Glasgow, **Scotland**.
13. **Visiting Scientist, Feb. 2012**, Department of Physics, Australian National University, **Australia**.
14. **Visiting Research Faculty, May 22th-June 20th, 2012**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
15. **Visiting Scientist, Sept. 17th, 2011 - Sept. 19th, 2011**, Centre de Physique Theorique, Ecole Polytechnique, Palaiseau Cedex, **France**
16. **Visiting Research Faculty, May 17th-July 18th, 2011**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.
17. **Visiting Scientist, Nov. 13th-24th, 2009**, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, **South Korea**.

18. **Visiting Scientist, Oct. 4th, 2008 - Oct. 16th, 2008, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City-500712, South Korea.**
19. **Visiting Scientist, Sept 1st-15th, 2007, Advanced Photonics Research Institute and School of Photon Science and Technology, Gwangju Institute of Science and Technology, Gwangju City- 500712, South Korea.**

Association With Professional Bodies

1. **Plasma Science Society of India (PSSI)-Life-time Member**
2. **IEEE Society, Annual Member**
3. **Association of Asia Pacific Physical Societies (APPPS)- Division of Plasma Physics (DPP), Life-time Member**
4. **Indian Science Congress Association, Life-time Member**
5. **Optical Society of India, Regular Fellow Member**

Books

1. **D. N. Gupta, Interaction of Electromagnetic Waves and Electron Beams with Plasmas, Lambert Academic Publishing, Germany, Year 2012.**

Publications

In Indexed / Peer Reviewed Journals (Total: 90, Citations: 1000)

1. **S. Kumar, K. Gopal and D. N. Gupta, Proton acceleration from overdense plasma target interacting with shaped laser pulses in the presence of preplasmas, Plasma Physics and Controlled Fusion, In press, May 2019.**
2. **P. Yadav and D. N. Gupta, Temporal characteristics of relativistic stimulated Brillouin scattering of a laser in plasmas, Laser Physics Letters 16, 056005 (2019).**
3. **D.N. Gupta, N. Kant, and K. P. Singh, Electron acceleration by a radially polarized laser pulse in the presence of an intense pulsed magnetic field, Laser Phys. 29 015301 (2019).**
4. **R. Goyal, R. P. Sharma and D.N. Gupta, Whistler mode localization and turbulence implicating particle acceleration in radiation belts, Phys. Plasmas 25, 122903 (2018).**
5. **P. Sharma, K. Avinash, and D.N. Gupta, Oscillating two-stream instability in strongly coupled plasma, Laser and Particle Beams 36(3), 376 (2018).**
6. **M. Kaur and D. N. Gupta, Electron energy optimization by plasma density ramp in laser wakefield acceleration in bubble regime, Laser and Particle Beams 36 (2), 195 (2018).**
7. **M. Yadav, S. C. Sharma, and D. N. Gupta, Electron acceleration by a relativistic electron plasma wave in inverse-free-electron laser mechanism, IEEE Trans. Plasma Science 46 (7), 2521 (2018).**
8. **M. Kaur and D. N. Gupta, Excitation of plasma wave by lasers beating in a collisional and mild-relativistic plasma, J. Phys.: Conf. Ser. 1067, 052014 (2018).**
9. **K. Gopal, M. A. Raja, D. N. Gupta, K. Avinash and S.C. Sharma, Laser-pulse shape effects**

- on magnetic field generation in underdense plasmas, *Indian J. Phys.* 92 (7), 919 (2018).
10. R. Goyal, R. P. Sharma, [D.N. Gupta](#), and N. Gaur, The proton whistler wave energization by finite frequency kinetic Alfvén wave: A numerical approach, *Proceedings of the Jangjeon Mathematical Society* 21 (4), 733 (2018).
 11. M. Yadav, S. C. Sharma, M. Kaur, and [D. N. Gupta](#), Electron acceleration by a plasma wave in the presence of a transversely propagated laser with magnetic field, 9th International Particle Accelerator Conference, Vancouver, Canada, April 29- May 4, 2018, *Proceedings of IPAC2018*, 4749-4751, ISBN: 978-3-95450-184-7, 2018.
 12. A.T. Valkunde, S.D. Patil, M.V. Takale, B.D. Vhanmore, T.U. Urunkar, K.M. Gavade, [D.N. Gupta](#), Exponential density transition based self-focusing of Gaussian laser beam in collisional plasma, *Optik* 158, 1034–1039 (2018).
 13. B.D. Vhanmore, S.D. Patil, A.T. Valkunde, T.U. Urunkar, K.M. Gavade, M.V. Takale, [D.N. Gupta](#), Effect of q-parameter on relativistic self-focusing of q-Gaussian laser beam in plasma, *Optik* 158, 574–579 (2018).
 14. M. Singh and [D. N. Gupta](#), Laser-absorption effect on pulse-compression under Ohmic and weak-relativistic ponderomotive nonlinearity in plasmas, *Laser Phys. Lett.* 15, 016001 (2018).
 15. M. Kaur and [D. N. Gupta](#), Electron Acceleration by a Radially Polarized Laser Pulse in an Ion Channel, *IEEE Trans. Plasma Science* 45 (10), 2841 (2017).
 16. V.V. Kulagin, V. N. Kornienko, V.A. Cherepenin, and [D.N. Gupta](#), Generation of powerful pulses of terahertz and infrared range in interaction multiwatt laser fields with targets limited dimensions, *Journal of Radio Electronics*, ISSN 1684-1719, N1, 2017.
 17. K. Gopal and [D. N. Gupta](#), Optimization and control of electron beams from laser wakefield accelerations using asymmetric laser pulses, *Physics of Plasmas* 24, 103101 (2017).
 18. P. Yadav, [D. N. Gupta](#) and K. Avinash, Relativistic electron-beam assisted growth of oscillating two-stream instability of a plasma wave, *Physics of Plasmas* 24, 062107 (2017).
 19. [D. N. Gupta](#), V. V. Kulagin and H. Suk, Terahertz radiation emission from plasma beat-wave interactions with a relativistic electron beam, *Optics Communications* 401, 71 (2017).
 20. M. Kaur and [D. N. Gupta](#), Evolution of laser pulse shape in a parabolic plasma channel, *Laser Physics* 27, 015401 (2017).
 21. P. Sharma, K. Avinash, and [D. N. Gupta](#), Parametric instabilities in strongly correlated plasma, *Phys. Plasmas* 23, 102704 (2016).
 22. M. Kaur, [D. N. Gupta](#), K. Gopal, and H. Suk, Space-charge field assisted electron acceleration by plasma wave in magnetic plasma channel, *IEEE Trans. Plasma Science* 44, 2867 (2016).
 23. Maninder Kaur and [D. N. Gupta](#), Simulation of laser-driven plasma beat-wave propagation in collisional weakly relativistic plasmas, *Euro Physics Letters* 116, 35001 (2016).
 24. Mamta Singh and [D. N. Gupta](#), Laser-pulse compression in a collisional plasma under

- weak-relativistic ponderomotive nonlinearity, *Physics of Plasmas* 23, 053119 (2016).
25. K. Gopal, [D. N. Gupta](#), Y. K. Kim, M. S. Hur, and H. Suk, Large-scale magnetic field generation by asymmetric laser-pulse interactions with a plasma in low-intensity regime *Journal of Applied Physics* 119, 123101 (2016).
(Editorial Focus, Published in AIP newsletters)
 26. M. Singh, K. Gopal, and [D. N. Gupta](#), Temporally asymmetric laser pulse for magnetic-field generation in plasmas, *Physics Letter A* 380, 1437 (2016).
 27. P. Yadav, [D. N. Gupta](#), and K. Avinash, Suppression of stimulated Brillouin instability of beat-wave of two lasers in multiple-ion-species plasmas, *Physics of Plasmas* 23, 0121 (2016).
 28. R. Gupta V. Prakash, S. C. Sharma, Vijayshri and [D.N. Gupta](#), Resonant ion beam interaction with whistler waves in a magnetized dusty plasma, *J. Atomic, Molecular Condensate and Nano Physics* 3, 45 (2016).
 29. M. Singh and [D. N. Gupta](#), Plasma based optical guiding of an amplitude-modulated electromagnetic beam, *Proc. SPIE* 9654, International Conference on Optics and Photonics 2015, 96541R (2015).
 30. M. Singh, [D. N. Gupta](#), and H. Suk, Efficient second- and third-harmonic radiation generation from relativistic laser-plasma interactions, *Physics of Plasmas*, 22, 063303 (2015).
 31. [D. N. Gupta](#), Pinki yadav, D. G. Jang, M. S. Hur, H. Suk, and K. Avinash, Onset of stimulated Raman scattering of a laser in a plasma in the presence of hot drifting electrons, *Physics of Plasmas*, 22, 052101 (2015).
 32. S. Lee, T. H. Lee, [D. N. Gupta](#), H. S. Uhm, and H. Suk, Enhanced betatron oscillations in laser wakefield acceleration by off-axis laser alignment to a capillary plasma waveguide, *Plasma Physics and Controlled Fusion*, 57, 075002 (2015).
 33. [D. N. Gupta](#), M. Singh, and H. Suk, Amplitude saturation effects of a laser-driven plasma beat-wave on electron accelerations, *Journal of Plasma Physics*, 81, 905810324 (2015).
 34. [D. N. Gupta](#), K. Gopal, V. V. Kulagin and H. Suk, Mode-coupling assisted electron acceleration by a plasma wave, *Current Applied Physics (Elsevier)*, 15, 174 (2015).
 35. [D. N. Gupta](#), K. Gopal, I. H. Nam, V. V. Kulagin, and H. Suk, Laser wakefield acceleration of electrons from a density-modulated plasma, *Lasers and Particle Beams (Cambridge Press)*, 32, 449 (2014).
 36. M. Singh and [D. N. Gupta](#), Relativistic third-harmonic generation of a laser in a self-sustained magnetized plasma channel, *IEEE J. Quantum Electronics*, 50, 491(2014).
 37. [D. N. Gupta](#), J. Kim, V. V. Kulagin and H. Suk, Laser pulse distortion in a plasma of the weakly relativistic regime, *Laser Physics Letters (Institute of Physics, UK)* 11, 056003 (2014).
 38. P. Yadav, [D. N. Gupta](#), and K. Avinash, Interaction physics for the stimulated Brillouin scattering of a laser in laser driven fusion, *IEEE proceeding of XXVI Int. Symp. on Discharges and Electrical Insulation in Vacuum-Mumbai (India)*, p. 657 (2014): ISBN:

978-1-4799-6750-6.

39. [D. N. Gupta](#), M. Singh, B. S. Sharma, D. G. Jang, and H. Suk, Simulation on laser wakefield generation in a parabolic magnetic-plasma channel, Proceedings of IPAC2014, Dresden, Germany (JACoW), p. 1528 (2014): ISBN 978-3-95450-132-8.
40. M. Singh and [D. N. Gupta](#), Effect of laser-plasma channeling on third-harmonic radiation generation, Proceedings of IPAC2014, Dresden, Germany (JACoW), p. 3023 (2014): ISBN 978-3-95450-132-8.
41. B. S. Sharma, [D. N. Gupta](#), A. Sharma and A. Jain, Modulation instabilities and group velocity dispersion in partially stripped magnetoplasma channels, Plasma Phys. Control. Fusion (Institute of Physics, UK) 56, 075011 (2014).
42. B. S. Sharma, Archana Jain, N. K. Jaiman, [D. N. Gupta](#), D. G. Jang, H. Suk, and V. V. Kulagin, Laser pulse propagation in inhomogeneous magnetoplasma channels and wakefield acceleration, Phys. Plasmas (American Institute of Physics) 21, 023108 (2014).
43. [D. N. Gupta](#), M. R. Islam, D. G. Jang, H. Suk, and D. Jaroszynski, Self-focusing of a high-intensity laser in a collisional plasma under weak relativistic-ponderomotive nonlinearity, Physics of Plasmas (American Institute of Physics) 20, 123103 (2013).
44. [D. N. Gupta](#), K. Avinash, and H. Suk, Transient self-focusing of an intense laser pulse in magnetized plasmas under non-paraxial approximation, Lasers and Particle Beams (Cambridge Press) 31, 307 (2013).
45. S. D. Patil, M. V. Takale, V. J. Fulari, [D. N. Gupta](#), H. Suk, Combined effect of ponderomotive and relativistic self-focusing on laser beam propagation in a plasma, Applied Phys. B (Springer) 111, 1(2013).
46. [D. N. Gupta](#), Double ionization effect in electron accelerations by high-intensity laser pulse interaction with a neutral gas, The European Physical Journal (EPJ) Web Conference Series (EDP Science, France) 59,17003 (2013).
47. [D. N. Gupta](#), K. P. Singh, and H. Suk, Cyclotron resonance effects on electron acceleration by two lasers of different wavelengths, Lasers and Particle Beams (Cambridge Press) 30, 275 (2012).
48. [D. N. Gupta](#), K. P. Singh, and H. Suk, Optical field-ionization of a neutral gas with inhomogeneous density for electron acceleration by a high-intensity laser, Phys. Plasmas (American Institute of Physics) 19, 023103 (2012).
49. N. Kant, [D. N. Gupta](#), and H. Suk, Resonant third-harmonic generation of a short-pulse laser from electron-hole plasmas, Phys. Plasmas (American Institute of Physics) 19, 013101 (2012).
50. [D. N. Gupta](#) and H. Suk, Enhanced thermal self-focusing of a Gaussian laser beam in a collisionless plasma, Phys. Plasmas (American Institute of Physics) 18, 124501 (2011).
51. [D. N. Gupta](#), I. H. Nam, and H. Suk, Laser-driven plasma beat-wave propagation in a density-modulated plasma, Phys. Rev. E (American Physical Society) 84, 056403 (2011).
52. N. Kant, [D. N. Gupta](#), and H. Suk, Generation of Second-harmonic Radiations of a Self-focusing Laser from a Plasma with Density-Transition, Physics Letters A, 375, 3134 (2011).
53. [D. N. Gupta](#), Laser-plasma acceleration based neutron source for subcritical nuclear fission reactors, Proceedings of International Conference on Advances in Energy

Research (ICAER-2011), IIT Bombay, 9-11 Dec. 2011, Mumbai, India.

54. K. P Singh, [D. N. Gupta](#), and V. Sajal, Electron energy enhancement by a circularly polarized laser pulse in vacuum, *Lasers and Particle Beams* (Cambridge Press), 27, 635 (2010).
55. [D. N. Gupta](#), G. N. Patil, D. Srinivas, S. S. Kale, and S. B. Potnis, Numerical Simulation for Plasma-Arc dynamics during Contact Opening Process in Electrical Circuit-breakers, *Journal of Physics Conference Series*, 208, 012046 (2010).
56. [D. N. Gupta](#), H. J. Jang, and H. Suk, Combined Effect of Tight-focusing and Frequency-chirping on Laser Acceleration of an Electron in Vacuum, *Journal of Applied Physics*, 105, 106119 (2009).
57. [D. N. Gupta](#) and H. Suk, Efficient High -Harmonic Radiation Generation during Laser-electron Acceleration in Vacuum, *Journal of Applied Physics*, 108, 083308 (2009).
58. [D. N. Gupta](#), H. Jang, and H. Suk, Effect of Double-step Ionization of a Gas on Laser Electron Acceleration in Vacuum, *Applied Physics Letters* 94, 021502 (2009).
59. [D. N. Gupta](#), M. S. Hur, and H. Suk, Laser Electron Acceleration: Additional Effect of a Long Wavelength Electromagnetic Wave and a Magnetic Field, *Journal of Korean Physical Society*, 54, 376 (2009).
60. M. S. Hur, [D. N. Gupta](#), and H. Suk, Beam Charge Enhancement by Magnetic Field in Laser Wakefield Accelerators, *Physics Letters A*, 372, 2684 (2008).
61. K. P. Singh, [D. N. Gupta](#), and H. K. Malik, Effect of Laser Parameters on Electron Acceleration in Vacuum, *Physica Scripta*, 77, 045041 (2008).
62. K. P. Singh, V. Sajal, and [D. N. Gupta](#), Quasi-monoenergetic GeV electrons from the interaction of two laser pulses with a gas, *Lasers and Particle Beams*, 26, 597 (2008).
63. [D. N. Gupta](#), M. S. Hur, and H. Suk, Realistic Laser Focusing Effect on Electron Acceleration in the Presence of a Pulsed Magnetic Field, *Applied Physics Letters* 91, 211101 (2007).
64. M. S. Hur, J. H. Kim, [D. N. Gupta](#), H. J. Jang, and H. Suk, Simulation for Generation of 15 Femto-Second Laser Pulse by Raman Backscatter in Plasmas, *Applied Physics Letters* , 91, 101501 (2007).
65. [D. N. Gupta](#), M. S. Hur, and H. Suk, Additional Focusing of a High-intensity Laser Beam in a Plasma with a Density Ramp and a Magnetic Field, *Applied Physics Letters* , 91, 081505 (2007).
66. [D. N. Gupta](#), S. Kumar, M. Yoon, M. S. Hur, and H. Suk, Electron Acceleration by a Short Laser Beam in the presence of a Long Wavelength Electromagnetic Wave, *Journal of Applied Physics*, 102, 056106 (2007).
67. M. S. Hur, [D. N. Gupta](#), and H. Suk, Pulse Width Effects on Raman Backward

Amplification, Journal of Physics D: Applied Physics, 40, 5155 (2007).

68. **D. N. Gupta** and H. Suk, Energetic Electron Beam Generation by Laser-Plasma Interaction and its Application for Neutron Production, **Journal of Applied Physics, 101, 114908 (2007).**
69. **D. N. Gupta**, N. Kant, D. E. Kim, and H. Suk, GeV Electron Acceleration by a Radially Polarized Laser, **Physics Letter A, 368, 402 (2007).**
70. **D. N. Gupta**, M. S. Hur, I. Hwang, H. Suk, and A.K. Sharma, Plasma Density Ramp for Relativistic Self-focusing of an Intense Laser, **Journal of Optical Society of America B, 24, 1155 (2007).**
71. **D. N. Gupta** and H. Suk, Enhanced Focusing of Laser beams in Semiconductor Plasmas, **Journal of Applied Physics, 101, 043109 (2007).**
72. **D. N. Gupta**, K. P. Singh, and H. Suk, Influence of Electromagnetic Oscillating Two-stream Instability on the Evolution of Laser-driven Plasma Beat-Wave, **Physics of Plasmas (American Institute of Physics), 14, 013101 (2007).**
73. **D. N. Gupta** and H. Suk Electron Acceleration to High Energy by using Two Chirped Lasers, **Laser and Particle Beams, 25, 31 (2007).**
74. **D. N. Gupta** and H. Suk, Numerical Investigation on Self-Focusing during Laser Electron Acceleration in a Plasma, **Journal of Korean Physical Society, 50, 1406 (2007).**
75. **D. N. Gupta** and H. Suk, Comment on “ Electron Acceleration by a Gaussian Chirped Laser Pulse in Vacuum, **Physics of Plasmas, 14, 044701 (2007).**
76. **D. N. Gupta**, M. S. Hur, and H. Suk, Energy Exchange during Stimulated Raman Scattering of a Relativistic Laser in a Plasma, **Journal of Applied Physics, 100, 103101 (2006).**
77. **D. N. Gupta** and H. Suk, Frequency chirping for Resonance Enhanced Electron Energy during Laser Acceleration, **Physics of Plasmas 13, 044507 (2006).**
78. **D. N. Gupta** and H. Suk, Combined Role of Frequency Variation and Magnetic Field on Laser Electron Acceleration, **Physics of Plasmas 13, 013105 (2006).**
79. **D. N. Gupta**, S. Yadav, V. K. Tripathi, and H. Suk, Relativistic Effect on Stimulated Raman Scattering of a Laser in Plasma, **Physica Scripta, 73, 284 (2006).**
80. **D. N. Gupta**, H. Suk, A. K. Sharma, N. K. Jaiman, Laser-Produced Plasma Diffusion Across a Transverse Magnetic Field, **Journal of Korean Physical Society, 47, 982 (2005).**
81. **D. N. Gupta**, H. Suk, and C. M. Ryu, Electron Acceleration and Electron-Positron Pair Production by Laser in Tunnel Ionized Inhomogeneous Plasma, **Physics of Plasmas, 12, 093110 (2005).**
82. **D. N. Gupta** and C. M. Ryu, Electron Acceleration by a Circularly Polarized Laser in the Presence of an Obliquely Incident Magnetic Field in Vacuum, **Physics of Plasmas, 12, 053103 (2005).**
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Signature of Faculty Member