

Title	Name	Dr. Swati Dubey	Photograph
Designation	Reader		
Address	School of Studies in Physics Vikram University, Ujjain		
Phone- Office	0734-2512022		
Residence	Mob. 9893007305		
E-Mail	swati_dubey201@yahoo.com		
Educational Qualifications			
Degree	Institution	Year	
Ph.D.	School of Studies in Physics, Vikram University, UJJAIN	(1996)	
PG	School of Studies in Physics, Vikram University, UJJAIN	(1991)	
UG	Govt. Girls Degree College, Vikram University, UJJAIN	(1989)	
M. Phil.(Physics)	School of Studies in Physics, Vikram University, UJJAIN	(1992)	
Area of Interest/ Specialization			
➤ Study of tunable Lasers characteristics. ➤ Single Resonant Parametric oscillations. ➤ Studies on utilizing III-V semiconductors for various optoelectronic applications. ➤ Quantum effect on nonlinear optical phenomena ➤ Polaron induced nonlinear optical effects in semiconductor plasmas			
Subjects Taught			
Mathematical Physics, Atomic & Molecular Physics, Nuclear & Particle Physics, Condensed Matter Physics, Quantum Mechanics, Engineering Physics, Material Science, Solid State Devices and Components, Electronic Engineering Materials and Components.			
Publication Profile			
Research Papers:			
(A). Journal Papers:			
<u>Foreign:</u>			
Authors name(s), Title of the paper, name of the Journal, year, volume, issue, page numbers			

1. **Swati Dubey** and S. Ghosh, Stimulated Brillouin Scattering of Electromagnetic Waves Propagating obliquely in a Magnetoactive Centrosymmetric Semiconductor Plasma, Phys. Stat. Sol. (b), (1993), 180, 275-88.
[Impact factor – 1.166 API – 12.5]
2. **Swati Dubey** and S. Ghosh, Nonlinear absorption and refractive index of a Brillouin-scattered mode in magnetoactive centrosymmetric semiconductor plasmas, Phys. Rev. B (1994) 49, 5246-52.
[Impact factor – 3.475 API - 15]
3. **Swati Dubey** and S. Ghosh, Nonlinear absorption and refractive index of a Raman Scattered mode in magnetoactive centrosymmetric semiconductor plasmas, Physica B (1995) 210, 95-103.
[Impact factor – 1.056 API – 12.5]
4. **Swati Dubey** and S. Ghosh, Stimulated Raman and Brillouin Scattering Processes in a centrosymmetric semiconductor plasmas, J.de Physique (1997), 7, 1445-53.
[Impact factor – 1.420 API – 12.5]
5. **Swati Dubey** and S. Ghosh, Stimulated Raman Scattering of an hybrid pump wave propagating obliquely in a magnetoactive centrosymmetric semiconductor plasma, Phys. Stat. Sol. (b) (1998), 205, 657-66.
[Impact factor – 1.166 API – 12.5]
6. **Swati Dubey** and S. Ghosh, Parametric oscillations of polaron modes in magnetized semiconductor plasmas, New J. of Phys. (2009),11, 093030.
[Impact factor – 4.063 API - 15]
7. Nilesh Nimje, **Swati Dubey** and S. Ghosh, Diffusion-induced modulational instability in magnetized semiconductor plasmas: effect of carrier heating Eur. Phys. J. D. (2010), 59, 223-231.
[Impact factor – 1.42 API – 5.25]
8. S. Ghosh, **Swati Dubey** and R. Vanshpal, Quantum effect on parametric amplification characteristics in piezoelectric semiconductors, Phys. Lett. A (2010), 375, 43–47.
[Impact factor – 2.009 API – 6]
9. Nilesh Nimje, **Swati Dubey** and S. Ghosh, Parametric Interaction in Acousto-Optical Semiconductor Plasmas in the Presence of Hot Carriers, Chinese J. Phys. (2011), 49,901-916.

[Impact factor – 0.477 API - 4]

10. Nilesh Nimje, N. Yadav, **Swati Dubey** and S. Ghosh, Parametric Interaction in Magnetised Diffusive Semiconductor Plasmas: Effects of Carrier Heating, J. Int. Acad. Phys. Sci. (2011) 15, 223-227.

[API-2]

11. Nilesh Nimje, **Swati Dubey** and S. Ghosh, Stimulated Brillouin Scattering via Migration of Hot Carriers in Transversely Magnetised Diffusive Semiconductors, Int. J. Appl. Phys. (2011) 1, 101-118.

[API-3]

12. Nilesh Nimje, **Swati Dubey** and S. Ghosh, Amplitude modulation and demodulation of an electromagnetic wave in magnetised acousto-optic diffusive semiconductor plasmas: Hot carrier effects, J. Optics & Laser Technology (2012) 44, 744-748.

[Impact factor – 1.636, API -5]

13. Ratna Agrawal, **Swati Dubey** and S. Ghosh, Reflectivity of III-V polar semiconductor due to electron: LO phonon interaction, IJESR (2013) 2, 1886.

[API -3]

14. S. Ghosh, **Swati Dubey** and R. Vanshpal, Quantum effect on phase conjugation in semiconductors by stimulated Brillouin scattering, Chin. J. Phys. (accepted).

[Impact factor –0.477, API - 5]

15. Ratna Agrawal, **Swati Dubey** and S. Ghosh, Modulational amplification of polaron mode in a magnetised semiconductor, Chin. Journal of Physics (accepted).

[Impact factor –0.477, API - 4]

16. Ratna Agrawal, **Swati Dubey** and S. Ghosh, Acoustical phonon induced and polaron induced modulational amplification in polar semiconductors: a comparative study, Phys. Scr. (2013) 88, 045701.

[Impact factor –1.032, API -5]

17. S. Ghosh, **Swati Dubey** and R. Vanshpal, Quantum effect on steady state and transient gain characteristics of stimulated Brillouin scattered mode in semiconductor plasmas, Res. J. Phys. Sci. (2013) 1(5), 1-8.

[API - 3]

Indian:

Authors name(s), Title of the paper, name of the Journal, year, volume, issue, page numbers

1. Nilesh Nimje, **Swati Dubey** and S. Ghosh, Effect of carrier heating on diffusion induced modulational instability in semiconductor plasmas, Indian. J. Phys. (2010) 84, 1569-1587.
[Impact factor – 1.785 API - 5]
2. Nilesh Nimje, **Swati Dubey** and S. Ghosh, Indian. J. Phys. (2012) 86 (8).749-754.
[Impact factor – 1.785, API - 5]

(B). Conference Papers:

Foreign:

Authors name(s), Title of the paper, name of the conference, place, dates & year, page numbers

- **Swati Dubey** & S. Ghosh, The First International Symposium on Lasers and optoelectronics & Applications, Singapore, 11-13 Nov.93.
[API - 10]
- Nilesh Nimje, N. Yadav, **Swati Dubey** and S. Ghosh, 12th International Conference of International academy of Physical Sciences, India (CONIAPS XII) on Emerging Interfaces of Physical Sciences, University of Rajasthan, Jaipur, 2010 December 22-24,.
[API - 10]
- Ratna Agarwal, **Swati Dubey** and S. Ghosh “Polaron induced parametric interaction in magnetized semiconductors” IC RTP-2012, Devi Ahilya university, Indore.
[API - 10]
- R. Vanshpal, Swati Dubey, S. Ghosh “Quantum effect on parametric dispersion in presence of nonuniform size colloids in semiconductors” IC RTP-2012, Devi Ahilya university, Indore.
[API - 10]
- Ratna Agarwal, **Swati Dubey** and S. Ghosh “Infra red active modes due to coupling of cyclotron excitation and LO phonons in polar semiconductor” RAM-2013, Bikaner.
[API - 10]
- R. Vanshpal, Swati Dubey, S. Ghosh , “Stimulated Brillouin scattering in semiconductors: Quantum effects” , RAM-2013, Bikaner.
[API - 10]

Indian:

Authors name(s), Title of the paper, name of the conference, place, dates & year, page numbers

1. Stimulated Brillouin.....Plasmas” Saha Centenary Symposium on Plasma Science & Technology, “PLASMA-93”, Allahabad University, Allahabad, Oct. 11-14, 1993.

[API – 7.5]

2. “Nonlinear Refractive ...Brillouin Plasmas” 9th National Symposium on Plasma Science & Technology, “PLASMA- 94”, Institute of Science, Guwahati, Nov. 14-17,1994.

[API – 7.5]

3. “Nonlinear Refractive ...Raman Plasmas” XI PSSI National Symposium on Plasma Science & Technology, “PLASMA-96”, Bhopal, Oct. 28-31, 1996

. [API – 7.5]

4. “Stimulated Raman & Brillouin...Plasmas”, National Seminar on Photonics Instrumentation, Dr. H. S. G. University, SAGAR, March 25-27, 1996.

[API – 7.5]

5. “TQM- a must in Engineering Education” “Technologia –02” National Level Technical Paper Contest, M.P.C.C.E.T., Bhilai, March 2002.

[API – 7.5]

6. “Steady state & Transient.....Plasmas” First Chhattisgarh Young Scientist Congress 2002, Pt. R.S. S. University Raipur, March 2-3, 2002.

[API – 7.5]

7. “Holography - a Miracle in Image Processing”, “Technologia-03” National Level Technical Paper Contest, M.P.C.C.E.T., Bhilai, March 2003.

[API – 7.5]

8. “Emerging Technology of Optical Computing” All India Seminar 2004 “Role of Information & Communication Technology in Overall Development” Organized by The Institution of Engineers (I), Raipur, Jan 24-25, 2004.

[API – 7.5]

9. “Modulational InteractionsPlasmas”, Third Chhattisgarh Young Scientist Congress, Pt. R.S. S. University Raipur, 28th Feb – March, 2005.

[API – 7.5]

10. “Promotion of Entrepreneurship- a must in Engineering Institutions” National Seminar

on Technology Management For Innovation & Entrepreneurship R.C.E.T. Bhilai, March 13-14, 2005.

[API – 7.5]

11. “Nanotechnology, The Transformation of Micro to Nano” National Workshop on Nanotechnology at Chhattisgarh Swami Vivekanand Technical University, Bhilai, Aug.27-28, 2005.

[API – 7.5]

12. “Quantum Dot : a Miracle in Nanotechnology” National Workshop on Nanotechnology, Chhattisgarh Swami Vivekanand Technical University, Bhilai, Aug.27-28, 2005.

[API – 7.5]

13. “Plasmonics – Optics at Nano Scale”, National Conference on Emerging Trends in Computer & Electronics Engineering for Rural Development, C.S.I.T., Durg, March 4-5, 2006.

[API – 7.5]

14. “Steady state & TransientPlasmas” Advances in Electronic Materials & Devices-2006, Guru Ghasidas University, Bilaspur, March 5-6, 2006.

[API – 7.5]

15. “Surface Plasmon Resonance Methods & their applications”, National Conference on Advancements & Futuristic Trends in Mechanical & Materials Engineering (AFTMME’06), Gyani Zail Singh College of Engg. & Tech. Bhatinda, Oct.13-14, 2006.

[API – 7.5]

16. “Modulational Amplification Characteristics of Magnetized diffusive Semiconductor Plasmas” “BITCON – 07” Bhilai Institute of Technology, Bhilai March, 2007.

[API – 7.5]

17. “Influence of Magnetic Field on Stimulated Brillouin Scattering in Semiconductor Plasmas, National Conference on Horizons of Electrolytic, Electronic & Photonic Material Physics, SSCET, Bhilai, Oct.26-27, 2007.

[API – 7.5]

18. “SBS of E.M. Waves in an Obliquely Magnetized Diffusive Semiconductors Plasma”, National Conference on Advanced Materials & Nanotechnology, NCAMN-08, RCET,

Bhilai, March 30-31, 2008.

[API – 7.5]

19. “Optical parametric amplification in semiconductor plasmas” All India Level Tech. Conference on Engg. and Sc.(AICON-09) Feb.6 – 8, 2009, CSIT, Bhilai.

[API – 7.5]

20. “Parametric amplification in collision dominated magnetized diffusive semiconductor Plasmas”. National Symposium on Advances in Lasers and Spectroscopy-2009, February 27-28, 2009. Shri Hari Singh Gaur University, Sagar.

[API – 7.5]

21. “Optical parametric oscillations in piezoelectric semiconductor plasmas” All India Level Tech. Conference on Engg. and Sc.(AICON-10) Feb.-2010, CSIT, Bhilai.

[API – 7.5]

22. “Influence of quantum effects on parametric interaction in piezoelectric semiconductors” DAE-BRNS National Laser (NLS-19) December 1-4, 2010, RRCAT Indore.

[API – 7.5]

23. “Growth of Si Nanoparticles using Pulsed Laser Deposition Technique and its Optical and Structural Characterization” National Conference, EIPT 2011, S.S. in Physics Vikram University, Ujjain.

[API – 7.5]

24. “Quantum effect on Phase conjugation characteristics via stimulated Brillouin scattering in semiconductor plasma” National Conference, EIPT 2011, S.S. in Physics, Vikram University, Ujjain [M.P].

[API – 7.5]

25. “Brillouin gain characteristics in Diffusive semiconductors in presence of Hot carriers” EIPT 2011, National Conference, S.S. in Physics, Vikram University, Ujjain [M.P].

[API – 7.5]

26. “Stimulated Brillouin scattering in semiconductor plasmas: effects of carrier heating” 25th National Symposium on Plasma Science & Technology (Plasma-2010), IASST, Paschim Boragaon, Garchuk, Guwahati – 781035, Assam, India, December 8-11, 2010.

[API – 7.5]

27. R. Vanshpal and Swati Dubey “Stimulated Brillouin Scattering in Semiconductors:

Quantum Effects”, AICON-11, C.S.I.T., Durg (CG).

[API – 7.5]

- 28.** “Parametric Amplification of Polaron Mode in a Doped Semiconductor”, All India Conference on Phys. Of Emerging Functional Materials of 21st Century (AICON-12) Jan.-2012, CSIT, Bhilai.

[API – 7.5]

- 29.** Ratna Agrawal, Swati dubey and S. Ghosh “Effect of doping on modulationally amplified polaron mode in compound semiconductor” CMMP- 2011, Govt. M.L.B. Girls P. G. Autonomous College, Bhopal (M.P.).

[API – 7.5]

- 30.** R. Vanshpal, Swati Dubey, S. Ghosh “Optical phase conjugation by stimulated Brillouin scattering in semiconductors: Effect of quantum correction” CMMP- 2011, Govt. M.L.B. Girls P. G. Autonomous College, Bhopal (M.P.).

[API – 7.5]

- 31.** Ratna Agrawal, Swati dubey and S. Ghosh, “Competition between acoustical phonon induced and polaron induced modulational interactions in polar semiconductors”, MPWSC-13, Jiwaji University, Gwalior (M.P.)

[API – 7.5]

Books Published:

Authors name(s), Title of the book, name of the publisher, year

N. Yadav, **Swati Dubey**, S.K. Ghosh, Emerging Interfaces of Science and Technology, *Excel India Publishers, New Delhi, INDIA, 2011.*

Research Guidance

Supervision of awarded Doctoral Thesis:

Scholar's name, year, Title of dissertation

1. **Nilesh Nimje**, 2011, Effect of carrier heating in nonlinear interaction in diffusive semiconductor plasmas (as Co-Supervisor).
2. **Ravi Vanshpal**, 2012, *Optical nonlinear instabilities in semiconductor plasmas: Quantum effects.*

3. Kirti Sontakke, 2013, Band Structure effects on propagation characteristics of Nonlinear Waves in Semiconductor Plasmas (as Co-Supervisor). Supervision of Doctoral Thesis, under progress: <i>Scholar's name, Title of dissertation</i> 1. Ratna agrawal, Wave interactions in polar semiconductors. 2. Kamal Jain, Classical and quantum aspects in nonlinear optical phenomena. 3. Ayushi paliwal, Wave particle interactions in semiconductor plasma. 4. Sukhdev Bairagi, Optical nonlinearities in solid state plasmas. Supervision of M.Phil dissertations: <i>Scholar's name, year, Title of dissertation</i> 1. Sumita Sengupta, 2008, Effect of magnetic field on Nonlinear Optical effects. 2. Priyanka Pandey, 2008, Studies on the stimulated Brillouin Scattering in Semi Conductor Plasma. 3. Ravi Vanshpal, 2009, Optical Parametric Devices in semiconductor plasmas. 4. Shashi Shukla, 2009, Stimulated Brillouin Scattering In a Centrosymmetric Semiconductor Plasma. 5. Madhvi Trivedi, 2010, Crystal Growth , Optical imaging & characterization of tri Glycine sulphate single crystal 6. Sandhya Choudhary, 2011, Effect of crystal structure on modulational instability in third nitrate semiconductor Plasmas 7. Hemlata Joshi, 2012, Microhardness studies on micro wave treated & untreated HDPE Polymer. 8. Sukhdev Bairagi, 2012, Growth & thermoluminescence studies on Mn doped Lithium tetraborate Crystals 9. Ayushi Paliwal, 2012, Fabrication of transparent Y_2O_3 & Yb , Nd doped Y_2O_3 ceramics:A study on laser host materials 10. Geeta Bhatia, 2012, Comparative study of gain characteristics of semiconductor optical amplifiers 11. Kapil Vaishnav, 2012, Polaron Formation Effect on normal state optical conductivity of iron based superconductor Conferences Organized
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Organization of a Conference

National conference on Emerging Interfaces of Physics & Technology (EIPT-2011), Feb28 March01,2011, School of Studies in Physics, Vikram University, Ujjain..

Conferences / Seminars etc. Attended

1. Saha Centenary Symposium on Plasma Science & Technology, “PLASMA-93”, Allahabad University, Allahabad, Oct. 11-14, 1993.
2. XI PSSSI National Symposium on Plasma Science & Technology, “PLASMA-96”, Bhopal, Oct. 28-31, 1996.
3. National Seminar on Photonics Instrumentation, Dr. H. S. G. University, SAGAR, March 25-27, 1996.
4. National Level Technical Paper Contest “Technologia –02”, M.P.C.C.E.T., Bhilai, March 2002.
5. First Chhattisgarh Young Scientist Congress 2002, Pt. R.S. S. University Raipur, March 2-3, 2002.
6. National Level Technical Paper Contest, “Technologia-03”, M.P.C.C.E.T., Bhilai, March 2003.
7. All India Seminar 2004 “Role of Information & Communication Technology in Overall Development” Organized by The Institution of Engineers (I), Raipur, Jan 24-25, 2004.
8. Third Chhattisgarh Young Scientist Congress, Pt. R.S. S. University Raipur, Feb 28 – March 01, 2005.
9. National Seminar on Technology Management for Innovation & Entrepreneurship R.C.E.T. Bhilai, March 13-14, 2005.
10. National Workshop on Nanotechnology, Chhattisgarh Swami Vivekanand Technical University, Bhilai, Aug.27-28, 2005.
11. National Conference on Emerging Trends in Computer & Electronics Engineering for Rural Development, C.S.I.T., Durg, March 4-5, 2006.
12. National Conference “BITCON – 07” Bhilai Institute of Technology, Bhilai March, 2007.
National Conference on Horizons of Electrolytic, Electronic & Photonic Material Physics, SSCET, Bhilai, Oct.26-27, 2007.
13. National Conference on Advanced Materials & Nanotechnology, NCAMN-08, RCET,

Bhilai, March 30-31, 2008. 14. All India Level Tech. Conference on Engg. and Sc.(AICON-09), CSIT, Bhilai, Feb.6 – 8, 2009. 15. National Symposium on Advances in Lasers and Spectroscopy-2009, Shri Hari Singh Gaur University, Sagar, Feb.27-28, 2009. 16. All India Level Tech. Conference on Engg. & Sc.(AICON-10), CSIT, Bhilai Feb.-2010. 17. National conference on Emerging Interfaces of Physics & Technology(EIPT-2011), School of Studies in Physics, Vikram University, Ujjain Feb28-March01,2011. 18. R. Vanshpal and Swati Dubey “Stimulated Brillouin Scattering in Semiconductors: Quantum Effects”, AICON-11, C.S.I.T., Durg. 19. Condensed Matter & Material Physics (CMMP- 2011), Govt. M.L.B. Girls P. G. Autonomous College, Bhopal Oct. 13-14,2011. 20. Int. Conf. on Recent Trends in Physics (ICRTP-2012), Devi Ahilya University, Indore Feb.4-5, 2012. 21. National Conference on New Frontiers for Women in Science and Technology (MPWSC-13),Jiwaji University, Gwalior 20-21 March 2013.
Research Projects Name of Project: "Nonlinear interactions in Ion-Implanted semiconductor plasmas" Position in Project: Principal Investigator Period: April 2010 - March 2013 Grant: MP Council of Science & Technology, Bhopal(No. 4086)
Awards and Distinctions ➤ II prize in National Level Technical Paper Contest, Technologia2002, MPCCET, Bhilai (C.G.) ➤ Best Scientific Research Publication Award 2009-10 for the best publication in the scientific Journal (New J. Physics) by M.P. Council of Science & Technology 2009.
Association with Professional Bodies <i>Committees and Boards</i> ➤ Member – Core Group, Nano Technology Materials Research Centre, Chhattisgarh Swami Vivekanand Technical University, Bhilai (2007-08).

- **Member** - Board of Studies of Applied Physics, Chhattisgarh Swami Vivekanand Technical University, Bhilai (2006).
- **Member** - Board of Studies of Physics, Vikram University, Ujjain (2009-till date).
- **Member** - Board of Studies of Physics, Christian Eminent College, Indore (2012)
- **Warden**- Vidyottama Girls Hostel, Vikram University, Ujjain (2011-2013).
- **Asst. Superintendent, Examination**, Vikram University, Ujjain(2010-11).
- **Member**- Grievances cell for Working Women Exploitation (2013).
- **Member**- admission committee, counseling committee, anti ragging committee.
- **Member**- Organizing Committee of Youth Festival, National seminars, University Convocations etc.
- **President**- Physics Club, School of Studies in Physics, Vikram University, Ujjain.

Memberships

Life Member – The Indian Society for Technical Education (LM-43626).

Other Activities

Research Interests

Semiconductor Optical Amplifiers, Slow light propagation in semiconductors, Nano technology.

Survey Articles

Popular Article

Delivered Lectures

Resource Person in National Conference on New Frontiers for Women in Science and Technology (MPWSC-13), 20-21 March 2013, Jiwaji University, Gwalior (M.P.)

Forthcoming Research

Relativistic Effects on nonlinear optical phenomena, Role of phase matching conditions.