


<b>Title</b>	Dr.	<b>Name</b>	Sanjay Kumar Ghosh	<b>Photograph</b> 
<b>Designation</b>	Professor and Head			
<b>Address</b>	School of Studies in Physics, Vikram University, Ujjain 456 010			
<b>Phone- Office</b>	0734-2512022			
<b>Residence</b>	0734-2511571			
<b>E-Mail</b>	drsanjayghosh.ssp@gmail.com			

### Educational Qualifications

Degree	Institution	Year
Ph.D.	Vikram University, Ujjain	1979
PG	Jabalpur University, Jabalpur	1975
UG	Jabalpur University, Jabalpur	1973
Other		

### Area of Interest/ Specialization

Nonlinear Optics, Semiconductor Plasma, Electrodynamics, Material Science

### Subjects Taught

Electrodynamics, Mathematical Physics, Material Science, Plasma Physics

### Publication Profile

#### Research Papers:

#### (A). Journal Papers:

##### Foreign:

1. S. Guha & S. Ghosh, *Phys. Stat. Sol. (a)* **41**, 249-54 (1977).  
"Convective instability in n-InSb in the presence of crossed electric and magnetic fields."
2. S. Guha & S. Ghosh, *J. Phys. Chem. Solids* **38**, 1377-82 (1977).  
"Propagation of high power helicons in n-InSb crystal."
3. S. Guha & S. Ghosh, *Phys. Stat. Sol. (b)* **87**, K9-12 (1978).  
"Hybrid mode interaction in inhomogeneous semiconductor plasmas."
4. S. Guha & S. Ghosh, *Phys. Stat. Sol. (a)* **49**, 363-70 (1978).  
"Effect of a density gradient on the EM-wave instability in semiconductor plasmas."
5. S. Guha & S. Ghosh, *Japanese J. Appl. Phys.* **17**, 1835-37 (1978).  
"Temporal instability in crossed electric and magnetic fields."

6. S. Guha & S. Ghosh, *Phys. Stat. Sol. (b)* **89**, K171-74 (1978).  
“Drift wave instability in solid state plasmas.”
7. S. Guha, P. K. Sen & S. Ghosh, *Phys. Letters* **69A**, 442-44 (1979).  
“Parametric excitation of acoustohelicon waves in piezoelectric semiconductors.”
8. S. Guha & S. Ghosh, *J. Phys. Chem. Solids* **40**, 775-80 (1979).  
“Instability of EM-wave in transversely magnetised semiconductor plasmas.”
9. S. Guha, P. K. Sen & S. Ghosh, *Phys. Stat. Sol. (b)* **91**, K135-38 (1979).  
“Modulational instability of a finite amplitude Alfvén waves in semimetals.”
10. S. Guha, P. K. Sen & S. Ghosh, *Phys. Stat. Sol. (a)* **52**, 407-14 (1979).  
“Parametric instability of acoustic waves in transversely magnetised piezoelectric semiconductors.”
11. S. Guha & S. Ghosh, *J. Phys. Chem. Solids* **40**, 1143-44 (1979).  
“Harmonic generation of high power helicons in n-InSb crystal.”
12. S. Guha & S. Ghosh, *Phys. Stat. Sol. (b)* **92**, K95-97 (1979).  
“Longitudinal phonon-plasmon interaction in inhomogeneous semiconductors.”
13. S. Guha, P. K. Sen & S. Ghosh, *Phys. Letters* **71A**, 149-52 (1979).  
“Modulational instability of a laser beam in a longitudinally magnetised piezoelectric semiconductor.”
14. S. Guha, S. Ghosh & N Apte, *Phys. Letters* **71A**, 382-84 (1979).  
“Amplification of an acoustic wave in inhomogeneous piezoelectric semiconductor.”
15. S. Ghosh & V. K. Agrawal, *Phys. Stat. Sol. (b)* **102**, K107-11 (1980).  
“Excitation of ultrasonic waves due to modulation of a laser in a magnetised semiconductor.”
16. S. Ghosh, *J Appl. Phys* **52**, 4557-71 (1981).  
“Brillouin instability in longitudinally magnetised n-type piezoelectric semiconductors.”
17. S. Ghosh & V. K. Agrawal, *Acustica* **49**, 159-63 (1981).  
“Parametric excitation of ultrasonic waves in magnetised semiconductors.”
18. S. Ghosh, N.Apte & V.K.Agrawal, *Phys.Stat.Sol.(b)* **107**, 75-81 (1981).  
“Excitation of hybrid mode due to modulation of an intense laser beam in a transversely magnetised semiconductor plasma.”
19. S. Ghosh & N. Apte, *J. Appl. Phys.* **53**, 1037-44 (1982).  
“Stimulated Raman scattering in magnetoactive piezoelectric semiconductors.”
20. S. Ghosh & V. K. Agrawal, *Acustica* **52**, 31-35 (1982).  
“Parametric decay of a laser beam into ultrasonic and helicon waves in longitudinally magnetised semiconductors.”
21. S. Ghosh & V. K. Agrawal, *Phys. Stat. Sol. (b)* **110**, K37-40 (1982).  
“Excitation of acoustohelicon waves due to modulation of a laser beam in longitudinally magnetised semiconductors.”
22. S. Ghosh & V. K. Agrawal, *Phys. Stat. Sol. (b)* **112**, 119-31 (1982).  
“Effect of magnetostatic field on the stimulated Raman scattering of transversely polarised EM waves and Raman instability in semiconductor plasmas.”
23. S. Ghosh & V. K. Agrawal, *Acta Physica Polonica* **63A**, 587-94 (1983).  
“Parametrically excited instability of hybrid mode in magnetised semiconductors.”
24. S. Ghosh & V. K. Agrawal, *Acustica* **53**, 47-52 (1983).

- “Effects of transverse magnetostatic field on Brillouin instability in semiconductor plasmas.”
25. S. Ghosh & S. Khan, *Phys. Stat. Sol. (b)* **116**, 323-34 (1983).
- “Stimulated Brillouin scattering of transversely polarised EM waves in magnetoactive moderately piezoelectric semiconductor plasmas.”
26. S. Ghosh & S. Khan, *J. Appl. Phys.* **54**, 7005-11(1983).
- “Raman instability in longitudinally magnetised n-type piezoelectric semiconductors.”
27. S. Ghosh & S. Khan, *Phys. Stat. Sol. (b)* **119**, 363-73 (1983).
- “Parametric conversion of an electron plasma wave into an EM wave in longitudinally magnetised n-type piezoelectric semiconductor plasmas.”
28. S. Ghosh & V. K. Agrawal, *Acta Physica Polonica* **65A**, 15-24 (1984).
- “Stimulated Brillouin scattering and Raman instability of transverse EM wave in magnetoactive n-type semiconductors.”
29. S. Ghosh & R. B. Saxena, *Phys. Stat. Sol. (b)* **121**, 661-72 (1984).
- “Parametric conversion of an EM wave into an acoustic wave in magnetised cubic semiconducting plasmas.”
30. S. Ghosh & S. Dixit, *Acustica* **56**, 153-59 (1984).
- “Parametric decay of an electrostatic pump wave in magnetised piezoelectric semiconducting plasmas.”
31. S. Ghosh & S. Dixit, *Phys. Stat. Sol. (b)* **124**, 395-402 (1984).
- “Parametric decay of a high power helicon wave into a transverse acoustic and another helicon wave in longitudinally magnetised cubic piezoelectric semiconducting plasmas.”
32. M. S. Pathak, S. Khan & S. Ghosh, *Phys. Stat. Sol. (b)* **124**, 489-96 (1984).
- “Longitudinal phonon-plasmon interaction in semiconducting plasmas.”
33. S. Ghosh & S. Khan, *Phys. Stat. Sol. (a)* **85**, 535-41 (1984).
- “Amplitude modulation and demodulation of EM waves in magnetised semiconducting plasmas.”
34. S. Ghosh & S. Dixit, *Phys. Stat. Sol. (b)* **127**, 245-52 (1985).
- “Effect of relativistic mass variation of the electron on the parametric instability of acoustic waves in transversely magnetised piezoelectric semiconducting plasmas.”
35. S. Ghosh & R. B. Saxena, *Phys. Stat. Sol. (b)* **127**, 557-66 (1985).
- “Stimulated Brillouin scattering of high power helicon waves in longitudinally magnetised cubic piezoelectric semiconducting plasmas.”
36. S. Ghosh & M. S. Pathak, *Phys. Stat. Sol. (b)* **129**, 81-87 (1985).
- “Transverse phonon helicon interactions in semiconducting plasmas.”
37. S. Ghosh & R. B. Saxena, *Acustica* **58**, 91-97 (1985).
- “Amplification of acousto-helicon wave due to modulation of high power helicon wave in longitudinally magnetised cubic piezoelectric semiconducting plasmas.”
38. S. Ghosh & D. K. Sinha, *Acustica* **58**, 298-302 (1985).
- “Amplification of acoustic waves due to modulation of an intense laser beam in the presence of electrostrictive force in a piezoelectric semiconductor.”
39. S. Ghosh & D. K. Sinha, *Phys. Stat. Sol. (b)* **129**, K117-22 (1985).
- “Stimulated Brillouin scattering and Brillouin instability in dissipative piezoelectric semiconducting plasmas.”

40. S. Ghosh & S. Dixit, *Phys. Stat. Sol. (b)* **130**, 219-24 (1985).  
“Effect of relativistic mass variation of the electron on the modulational instability of laser beams in transversely magnetised piezoelectric semiconducting plasmas.”
41. S. Ghosh & S. Dixit, *Phys. Stat. Sol. (b)* **131**, 255-65 (1985).  
“Stimulated Raman scattering and Raman instability of an intense helicon wave in longitudinally magnetised n-type piezoelectric semiconducting plasmas.”
42. S. Ghosh & R. B. Saxena, *J. Appl. Phys* **58**, 3133-40 (1985).  
“Raman instability in n-type piezoelectric semiconducting plasmas.”
43. S. Ghosh & R. B. Saxena, *Acustica* **60**, 261-64 (1986).  
“Modulational instability of an EM wave in magnetised semiconducting plasmas.”
44. S. Ghosh & S. Khan, *Ultrasonics* **24**, 93-99 (1986).  
“Parametric instability in n-type piezoelectric semiconductor plasmas.”
45. S. Ghosh & D. K. Sinha, *J. Appl. Phys.* **60**, 267-71 (1986).  
“Amplification of acoustic waves in piezoelectric semiconductors: effect of nonlinearity in electron effective mass and collision frequency.”
46. S. Ghosh & S. Dixit, *Phys. Letters* **118A**, 350-54 (1986).  
“Modulational instability of a laser beam in a piezoelectric material with strain dependent dielectric constant.”
47. S. Ghosh & D. K. Sinha, *JIC on Acoustics* **12**, GI-4 (1986)  
“Amplification of acousto-helicon waves by application of electron density gradient in piezoelectric semiconductors.”
48. S. Ghosh & R. B. Saxena, *Phys. Stat. Sol. (a)* **96**, 111-19 (1986)  
“Parametric instabilities of laser beams in material with strain dependent dielectric constant.”
49. S. Ghosh & S. Dixit, *Ultrasonics* **25**, 175-79 (1987).  
“Laser driven acoustic instabilities in materials with strain dependent dielectric constant.”
50. S. Ghosh, R.B.Saxena & M.S.Pathak, *Phys.Stat.Sol.(a)* **104**, K53-56 (1987).  
“Modulation of a high power helicon wave in longitudinally magnetised semiconducting plasmas.”
51. S. Dixit, S.Ghosh & D.K.Sinha, *J. Pure & Appl. Ultrasonics*; 10, 53-58 (1988).  
“Laser driven acoustic instabilities in materials with strain dependent dielectric constant.”
52. M. Dey (Bose) & S. Ghosh, *Phys. Stat. Sol. (b)* **152**, 625-32 (1989).  
“Amplification of acoustic waves in magnetised piezoelectric semiconductors.”
53. A. Neogi & S. Ghosh, *Phys. Stat. Sol. (b)* **152**, 691-700 (1989).  
“Parametric amplification in magnetised piezoelectric semiconducting plasmas.”
54. A. Neogi & S. Ghosh, *Phys. Stat. Sol. (b)* **156**, 705-15 (1989).  
“Stimulated Brillouin scattering in a transversely magnetised doped centrosymmetric semiconductor.”
55. M. Dey (Bose) & S. Ghosh, *Phys. Stat. Sol. (b)* **157**, 159-66 (1990).  
“Amplification of acoustic waves in magnetised high resistivity piezoelectric semiconductors.”
56. R. Sanghvi & S. Ghosh, *Phys. Stat. Sol. (a)* **118**, 235-40 (1990).  
“Amplitude modulation and demodulation of EM waves in magnetised material with strain dependent dielectric constant.”

57. M. Dey (Bose) & S. Ghosh, *Phys. Stat. Sol. (b)* **159**, 817-25 (1990).  
“Amplification of acoustohelicon waves in piezoelectric semiconductors.”
58. M. Dey (Bose) & S. Ghosh, *Phys. Stat. Sol. (b)* **161**, 319-27 (1990).  
“Acoustic second harmonic generation in magnetised high resistivity piezoelectric semiconductors.”
59. A. Neogi & S. Ghosh, *J. Appl. Phys.* **69**, 61 - 66 (1991).  
“Parametric dispersion and amplification of acoustohelicon waves in piezoelectric semiconductors.”
60. K. L. Jat & S. Ghosh, *Phys. Stat. Sol.(b)* **165**, 583-90 (1991).  
“Parametric amplification of acoustohelicon waves in semiconductors.”
61. K. L. Jat, A. Neogi & S. Ghosh, *Acta Physica Polonica* **79A**, 829-41(1991).  
“Parametric amplification in magnetised non-degenerate semiconducting plasmas.”
62. K. L. Jat & S. Ghosh, *Phys. Stat. Sol.(b)* **167**, 363-72 (1991).  
“Scattering of laser by acoustic wave in magneto-active noncentrosymmetric semiconducting crystals.”
63. A. Neogi & S. Ghosh, *Phys. Stat. Sol.(b)* **167**, K82-84 (1991).  
“Modulational interaction in piezoelectric semiconductors.”
64. P. Gadkari & S. Ghosh, *J. Pure & Appl. Ultrasonics* **13**, 81-85 (1991).  
“Parametric excitation of acoustohelicon wave in a crystal with strain dependent dielectric constant.”
65. M.Dey(Bose) & S. Ghosh, *Phys. Stat. Sol.(b)* **168**, 565-70 (1991).  
“Acoustic second harmonic generation in magnetised piezoelectric semiconductors.”
66. A. Neogi & S. Ghosh, *Phys. Rev.* **B44**, 13094-97 (1991).  
“Stimulated Raman scattering in a magnetised centro-symmetric semiconductors.”
67. A. Neogi & S. Ghosh, *J. Phys. Chem. Solids* **53**, 941-47 (1992)  
“Modulational amplification in magnetoactive piezoelectric semiconductors.”
68. P. Gadkari & S. Ghosh, *Physica* **B179**, 76-83 (1992).  
“Modulation of a laser beam in longitudinally magnetised crystals with high dielectric constant.”
69. P. Gadkari & S. Ghosh, *Phys. Stat. Sol. (b)* **172**, 709-18 (1992).  
“Brillouin instability in longitudinally magnetised crystals with high dielectric constant.”
70. R. Sanghvi & S. Ghosh, *Acustica* **77**, 131-39 (1992).  
“Parametric excitation of acoustic waves in magnetoactive materials with strain dependent dielectric constant.”
71. R. Sanghvi & S. Ghosh, *Acustica* **77**, 491-98 (1992).  
“Modulational instability of large amplitude lasers in crystals with high dielectric constants.”
72. K. L.Jat & S. Ghosh, *J. Appl. Phys.* **72**, 1689-95 (1992).  
“Scattering of laser beam by acoustohelicon waves in magnetoactive non-centrosymmetric semiconducting crystals.”
73. A. Neogi, S. Ghosh & D. K. Sinha, *Physica* **B182**, 160-66 (1992).  
“On aspects of modulational amplification in non-centrosymmetric and centrosymmetric semiconducting crystals.”
74. A. Neogi, S. Ghosh & D. K. Sinha, *Phys. Rev* **B47**, 16590-93 (1993).  
“Stimulated scattering in magnetoactive semiconductors.”

75. R. Sanghvi & S. Ghosh, *J. Pure & Appl. Ultrason.* **15**, 18-28 (1993).  
“On the aspects of Brillouin instability in magnetoactive semiconductor plasmas with high dielectric constants.”
76. Swati Dubey & S. Ghosh, *Phys. Stat. Sol. (b)* **180**, 275-88 (1993).  
“Stimulated Brillouin scattering of electromagnetic waves propagating obliquely in a magnetoactive centrosymmetric semiconductor plasma.”
77. Swati Dubey & S. Ghosh, *Phys. Rev.* **B49**, 5246-52 (1994).  
“Nonlinear absorption and refractive index of a Brillouin-scattered mode in a magnetoactive centrosymmetric semiconductor plasmas.”
78. K. L. Jat, S. Mukherji & S. Ghosh, *Physica Scripta* **50**, 507-13 (1994).  
“Stimulated Brillouin scattering in a centrosymmetric semiconductor plasma.”
79. Pragya D. & S. Ghosh, *Phys. Stat. Sol. (b)* **186**, 277-88 (1994).  
“Deflection of a laser light by an acoustic wave in a magnetised semiconductor with high dielectric constant.”
80. Swati Dubey & S. Ghosh, *Physica* **B210**, 95-103 (1995).  
“Nonlinear absorption and refractive index of a Raman scattered mode in a magnetoactive centrosymmetric semiconductor plasmas.”
81. S. Ghosh, Md. Salimullah & A. R. Amin, *Physica scripta* **54**, 91-95 (1996).  
“Nonlinear optical parameters (refractive and absorptive) of a scattered mode in n-GaAs plasma.”
82. Swati Dubey & S. Ghosh, *J. de Physique* **7**, 1445-53 (1997).  
“Stimulated Raman and Brillouin scattering processes in centrosymmetric semiconductor plasma.”
83. Swati Dubey & S. Ghosh, *Phys. Stat. Sol. (b)* **205**, 657-66 (1998).  
“Stimulated Raman scattering of a hybrid pump wave propagating obliquely in a magnetoactive centrosymmetric semiconductor plasma.”
84. Giriraj Sharma & S. Ghosh, *European Phys. J.* **D11**, 301-307 (2000).  
“Modulational interactions in magnetised piezoelectric semiconductor plasmas.”
85. Giriraj Sharma & S. Ghosh, *Phys. Stat. Sol. (a)* **184**, 443-452 (2001).  
“Parametric excitation and amplification of an acoustic wave in magnetised piezoelectric semiconductor”.
86. Giriraj Sharma & S. Ghosh, *J. Appl. Phys.* **89**, 4741-4746 (2001).  
“Optical parameters of magnetized semiconductor plasma with nonparabolic band structure”.
87. Giriraj Sharma & S. Ghosh, *Euro. Phys. J.* **D15**, 79-86 (2001).  
"Convective amplification of parametrically generated acoustic wave in piezoelectric semiconductor plasma"
88. Giriraj Sharma & S. Ghosh, *J. Appl. Phys.* **91**, 4910-16 (2002).  
“Optical parameters of a magnetised space-charge neutral group IV semiconductors”.
89. Giriraj Sharma & S. Ghosh, *Physica B* **322**, 42-50 (2002).  
“Stimulated Brillouin scattering in a magnetoactive III – V semiconductor: effects of carrier heating”.
90. S. Ghosh & M. P. Rishi, *Euro. Phys. J.* **D19**, 223-30 (2002).  
“Acousto-optic modulation in magnetised diffusive semiconductors”
91. S. Ghosh & M. P. Rishi, *Euro. Phys. J.* **D20**, 275-79 (2002).  
“Acousto-optic amplitude modulation and demodulation of electromagnetic wave

- in magnetised diffusive semiconductor plasma
92. S. Ghosh and M. P. Rishi, *Physica B* **328**, 255-63 (2003)  
“Parametric amplification in magnetized diffusive semiconductor plasmas”
  93. M. Salimullah, P. K. Shukla, S. Ghosh, H. Nitta & Y. Hayashi, *J. Phys. D* **36**, 958-60 (2003)  
“Electron-phonon coupling effect on wake fields in piezoelectric semiconductors”
  94. S. Ghosh, G. R. Sharma, Pragati Khare & M. Salimullah, *Physica B* **351**, 163-70 (2004).  
“Modified interactions of longitudinal phonon-plasmon in magnetized piezoelectric semiconductor plasmas.”
  95. S. Ghosh & Preeti Thakur, *European Phys. J. D* **31**, 85-90 (2004).  
“Longitudinal electrokinetic waves in ion-implanted semiconductor plasmas.”
  96. S. Ghosh, Giriraj Sharma & M. Salimullah, *Physica B* **355**, 37-43 (2005).  
“Dispersion and absorption of Alfvén wave in ion-implanted group IV semiconductors”
  97. S. Ghosh & Pragati Khare, *European Phys J. D* **35**, 521-26 (2005).  
“Acousto-electric wave instability in ion-implanted semiconductor plasmas”.
  98. S. Ghosh & Preeti Thakur, *European Phys. J. D* **35**, 449-52 (2005).  
“Effect of drifting carriers on longitudinal electro-kinetic waves in ion-implanted semiconductor plasmas”.
  99. M. Salimullah, A. M. Rizwan, S. K. Ghosh, P. K. Shukla, N. Nambu, H. Nitta and Y. Hayashi, *J. Appl. Phys.* **97**, 124505-8 (2005).  
“Long ranged order formation of colloids of implanted ions in a dc biased piezoelectric semiconductor”.
  100. S. Ghosh and Preeti Thakur, *European Phys. J. D* **37**, 417-422 (2006)  
“Instability of circularly polarized electrokinetic wave in magnetized ion implanted semiconductor plasmas ”
  101. S. Ghosh & Pragati Khare, *Acta Physica polonica* **A109**, 187-97 (2006)  
“Effect of density gradient on acousto-electric wave instability in ion-implanted semiconductor plasma”
  102. S. Ghosh & Preeti Thakur, *Acta Physica Polonica*, **A111**, 247-56 (2007)  
“Dispersion and absorption of longitudinal electro-kinetic waves in magnetised ion-implanted semiconductor plasmas”
  103. S. Ghosh & Nishchhal Yadav, *Euro. Phys. J.* **B59**, 173-78 (2007).  
“Stimulated Brillouin scattering in magnetised diffusive semiconductor plasmas”
  104. S. Ghosh & N. Yadav, *Acta Phys. Pol.* **A112**, 29-40 (2007).  
“Amplitude modulation and demodulation in strain dependent diffusive semiconductor”
  105. S. Ghosh and Pragati Khare, *J. Pure & Appl. Ultrasonics* **29**, 7-16 (2007).  
“Acoustic wave amplification in magnetized piezoelectric ion-implanted inhomogeneous semiconductors”
  106. S. Ghosh, Preeti Thakur and Nishchhal Yadav, *Phys. Stat. Sol. (c)* **5**, 901-6 (2008).

- “Wave instabilities of longitudinal electro-kinetic waves in ion-implanted semiconductor plasmas
107. S. Ghosh & Nishchhal Yadav, *Arabian J. Sc. & Engg.*, **33**, 361-371 (2008).  
“Stimulated Brillouin scattering in diffusive semiconductor plasmas”
  108. S. Dubey & S. Ghosh, *New J. Phys.***11**, 093030 (2009).  
“Parametric oscillations of polaron modes in magnetised semiconductor plasmas”
  109. Nishchhal Yadav, S. Ghosh, Preeti Thakur, M. Jamil and M. Salimullah, *A.J.S.E.*, 231-240 (2010).  
“Parametric interactions in ion-implanted piezoelectric semiconductor plasmas”
  110. N. Nimje, S. Dubey and S.K. Ghosh, *Eur. Phys. J. D* **59**, 223-231 (2010).  
“Diffusion induced modulation instability in magnetised semiconductor plasmas: effect of carrier heating”
  111. S. Ghosh, Swati Dubey and R. Vanshpal, *Phys. Lett. A* **375**, 43-47 (2010).  
“Quantum effect on parametric amplification characteristics in piezoelectric semiconductors”
  112. Nilesh Nimje, Swati Dubey and S. Ghosh, *Chinese J. Phys.* **49**, 901-916 (2011).  
“Parametric interaction in acousto-optic semiconductor plasmas in presence of hot carrier”
  113. Nilesh Nimje, Swati Dubey and S. Ghosh, *Opt. Laser Tech.* **44**, 744-748 (2012).  
“Amplitude modulation and demodulation of an electromagnetic wave in magnetised acousto-optic diffusive semiconductor plasmas: hot carrier effects”
  114. Nilesh Nimje, Nishchhal Yadav and S. Ghosh, *Phys. Lett A* **376** 850-853 (2012).  
“Effects of material parameter on interaction length to occur optical phase conjugation via stimulated Brillouin scattering in semiconductors”
  115. S. Ghosh, Swati Dubey and R. Vanshpal, *Chinese J. Phys.* (Accepted)  
“Steady state and transient gain characteristics of stimulated Brillouin scattered mode in quantum semiconductor plasma”
  116. Daluram Yadav, Nishchhal Yadav and S. Ghosh, *J. Mat. Phys. Chem.* **1**, 9-18 (2013)  
“Electron-phonon pairing mechanism for superconductivity in  $K_3C_{60}$  fullerenes”
  117. Ratna Agrawal, Swati Dubey and S. Ghosh, *Phys. Scri.* **88**, 045701 (2013)  
“Acoustical phonon induced and polaron induced modulational amplification in polar semiconductors: a comparative study”
  118. Ratna Agrawal, Swati Dubey and S. Ghosh, *Chinese J. Phys.* (Accepted)  
“Modulational amplification of polaron mode in magnetised semiconductor”

**Indian:**

1. S. Guha & S. Ghosh, *Ind. J. Pure & Appl. Phys.* **16**, 884-87 (1978).  
“Interaction of high power helicon with semiconductor-free space interface.”
2. S. Ghosh, P. K. Sen & S. Guha, *Pramana* **13**, 599-606 (1979).  
“Parametric excitation of hybrid mode in magnetised piezoelectric semiconductors.”
3. S. Ghosh & V. K. Agrawal, *Nat. Acad. Sci. Letters* **3**, 123-25 (1980).  
“Carrier wave instability in inhomogeneous semiconductors.”
4. S. Ghosh, *Ind. J. Phys.* **55A**, 107-13 (1981).  
“Nonlinear interaction of an intense laser beam with a transverse acoustic wave in a magnetised piezoelectric semiconductor.”
5. S. Ghosh & V.K. Agrawal, “*Plasma 81*” Eds. M.S. Sodha et al; 119-22 (1981).  
“Raman instabilities in semiconductor plasmas.”



6. S. Ghosh & V. K. Agrawal, *Nat. Acad. Sci. Letters* **4**, 373-76 (1981).  
“Parametric instability of ultrasonic wave in semiconductors.”
7. S. Ghosh & V. K. Agrawal, *Ind. J. Phys.* **59A**, 55-58 (1985).  
“Contribution of the deformation potential to the transverse phonon-helicon interaction in piezoelectric semiconductors.”
8. S. Ghosh & S. Khan, *Nat. Acad. Sci. Letters* **8**, 87-90 (1985).  
“Modulational instability of large amplitude laser in semiconducting plasmas.”
9. S. Ghosh, *J. Acoustical Soc., India* **XIII**, 174-77 (1985).  
“Parametric instability of acoustic waves in dissipative semiconducting plasmas.”
10. M. S. Pathak & S. Ghosh, *J. Ind. Acad. Math* **8**, 49-57 (1986).  
“Some aspects of acoustohelicon wave propagation in magnetised semiconducting plasmas.”
11. M. S. Pathak & S. Ghosh, *J. Ind. Acad. Math.* **8**, 94-101 (1986).  
“Some aspects of acoustic wave propagation in semiconducting plasmas.”
12. S. Ghosh & S. Dixit, *Physics Teacher* 35-37 (Jan.-Mar.1987).  
“Modulational instability of a laser beam in a piezoelectric materials with strain dependent dielectric constant.”
13. K. L. Jat & S. Ghosh, *Ind. J. Environmental Health* **33**, 1-10 (1991).  
“Suppression of noise by solid state plasma shield.”
14. R. Sanghvi & S. Ghosh, *Ind. J. Pure & Appl. Phys.* **30**, 708-14 (1992).  
“Parametric conversion of an electron plasma wave into an EM wave in a longitudinally magnetised crystal with high dielectric constants.”
15. Pragya D. & S. Ghosh, *Indian J. Pure & Appl. Phys.* **32**, 803-10 (1994).  
“Parametric amplification of EM wave propagating obliquely in magnetoactive solid state plasmas with high dielectric constant.”
16. K. L. Jat & S. Ghosh, *Indian J. Pure & Appl. Phys.* **33**, 770-72 (1995).  
“Suppression of acoustic noise for oblique incidence by semiconductor plasma medium.”
17. K. L. Jat & S. Ghosh, *Indian J. Pure & Appl. Phys.* **34**, 49-51 (1996).  
“Study of phase and acoustic intensity for noise suppression in semiconducting plasma medium.”
18. Pragya D. & S. Ghosh, *Indian J. Pure & Appl. Phys.* **36**, 155-60 (1998).  
“Amplitude modulation and demodulation of EM waves in solid state plasmas with high dielectric constant in presence of magnetic field.”
19. Giriraj Sharma & S. Ghosh, *Indian J. Pure & Appl. Phys.* **38**, 139-145 (2000).  
“Nonlinear interactions in magnetised piezoelectric semiconductor plasmas.”
20. M. Salimullah, S. Ghosh & M. R. Amin, *Pramana* **54**, 785-789 (2000)  
“Possible lattice formation of new materials within a piezoelectric semiconductor plasma.”
21. S. Ghosh, Giriraj Sharma and M. P. Rishi, *Ind. J. Pure & Appl. Phys.* **40**, 561-68 (2002)  
“Diffusion induced parametric amplification in centrosymmetric semiconductor plasmas”
22. S. Ghosh and M. P. Rishi, *Ind. J. Phys.* **B77**, 215-19 (2003)  
“Amplitude modulation and demodulation of electromagnetic wave in magnetized diffusive semiconductors”
23. M. Salahuddin, M. K. Islam, A. K. Banerjee, M. Salimullah & S. Ghosh, *Pramana* **61**, 595-99 (2003).

- “Three-dimensional wake potential in a streaming dusty plasma”
24. M. Salimullah, A. K. Banerjee, M. Salahuddin, A. M. Rizwan & S. Ghosh, *Indian J. Phys* **78B**, 245-48 (2004)
- “Wake field in a magnetized dusty plasma with streaming ions”
25. S. Ghosh & Pragati Khare, *Ind. J. Pure & Appl. Phys.* **44**, 183-87 (2006)
- “Acoustic wave amplification in ion-implanted piezoelectric semiconductor”
26. S. Ghosh & Preeti Thakur, *Ind. J. Pure & Appl. Phys.* **44**, 188-91 (2006)
- “Electro-kinetic wave spectrum in group-IV semiconductors: Effect of streaming carriers”
27. S. Ghosh, Preeti Thakur & M. Salimullah, *Ind. J. Pure & Appl. Phys.* **44**, 235-242 (2006)
- “Dispersion and absorption of longitudinal electro-kinetic waves in ion-implanted semiconductor plasmas”.
28. N. Yadav & S. Ghosh, *Ind. J. Pure & Appl. Ultrasonics*, **28**, 169-177 (2006).
- “Diffusion induced Modulational interactions in semiconductor plasmas”
29. N. Yadav and S. Ghosh, *Pramana* **68**, 123-128 (2007).
- “Diffusion induced parametric dispersion and amplification in doped semiconductor plasmas”
30. Nilesh Nimje, Swati Dubey and S. Ghosh, *Ind. J. Phys.* **84**, 1567-1585 (2010).
- “Effects of carrier heating on diffusion induced modulational instability in semiconductor plasmas”
31. Nilesh Nimje, N. Yadav, Swati Dubey and S. Ghosh, *J. Int. Acad. Phys. Scie.* **15**, 223-227 (2011).
- “Parametric interaction in magnetised diffusive semiconductor plasmas: Effects of carrier heating”
32. Nilesh Nimje, Swati Dubey and S. Ghosh, *Int. J. Appl. Phys.* **1**, 101-118 (2011).
- “Stimulated Brillouin scattering via migration of hot carriers in transversely magnetised diffusive semiconductors”
33. Nilesh Nimje, Swati Dubey and S. Ghosh, *Ind. J. Phys* **86** 749-754 (2012).
- “Effect of hot carriers on amplitude modulation and demodulation of an electromagnetic wave in magnetised diffusive semiconductor plasmas”
34. Kirti Sontakke and S. Ghosh. *Int. J. Appl. Phys.* **2**, 235-248 (2012).
- “Stimulated Raman Scattering: Temperature and Band Structure Effects”
35. R. Agarwal, Swati Dubey and S. Ghosh, *International J. Engg. & Scien. Research* **2**, 1886-1894 (2012).
- “Reflectivity of III-V polar semiconductors due to electron-LO phonon interaction”
36. Nilesh Nimje and S. Ghosh, *J. Int. Acad. Phys. Scie.* **16**, 163-170 (2012).
- “Effect of carrier concentration on Stimulated Brillouin scattering in acousto-optic diffusive semiconductor plasmas”
37. Aartee Sharma, Nishchhal Yadav, S. Ghosh, *Int. J. Sci and Research Pub.* **3**, 1-7 (2013).
- “Modified Acousto-electric Interactions in Colloids laden Semiconductor Quantum Plasmas”
38. S. Chaudhary, Nishchhal Yadav and S. Ghosh, *Res. J. Phys. Sci.* **1**, 11-16 (2013).
- “Dispersion of Longitudinal electro-kinetic waves in Ion-Implanted Quantum Semiconductor Plasmas”

39. S. Chaudhary, Nilesh Nimje, Nishchhal Yadav and S. Ghosh, Int. J. Phys. and Math. Sciences (Accepted).  
Modified gain characteristics of longitudinal electrokinetic wave in colloid laden quantum semiconductor plasma”

**(B). Conference Papers:**

**International:**

1. Ratna Agarwal, Swati Dubey and S. Ghosh “Polaron induced parametric interaction in magnetized semiconductors” J. Phys.: Conf. Ser. **365**, 012046 (2012)
2. R. Vanspal, Swati Dubey, S. Ghosh “Quantum effect on parametric dispersion in presence of nonuniform size colloids in semiconductors” J. Phys.: Conf. Ser. **365**, 012045 (2012)
3. Nilesh Nimje and S. Ghosh, “Optical phase conjugation reflectivity via stimulated Brillouin scattering in acousto-optic diffusive semiconductor plasma crystal” J. Phys.: Conf. Ser. **365**, 012044 (2012)
4. Kirti Sontakke, Nishchhal Yadav and S. Ghosh “Transient Brillouin gain in direct gap semiconductors, J. Phys.: Conf. Ser. **365** 012043 (2012).

**Nationals:**

1. H. L. Viswanath, S. Ghosh and D. Ganesh Rao, Circular array antenna and its applications, Proceedings of APSYM, 57-60 (2010).
2. R. Vanspal, S. Dubey and S. Ghosh, “Quantum effect on Phase conjugation characteristics via stimulated Brillouin scattering in semiconductor plasma” Proceeding of National Conference on Emerging Interfaces of Physics and Technology (EIPT-2011), Published by Excel India Publishers, 243-247 (2011).
3. Kirti Sontakke, Nishchhal Yadav and S. Ghosh Coherent Brillouin Scattering in Direct Gap Semiconductors: Effects of Temperature and Band Structure, Proceeding of National Conference on Emerging Interfaces of Physics and Technology (EIPT-2011), Published by Excel India Publishers 248-252 (2011).
4. Nilesh Nimje, Nishchhal Yadav, Swati Dubey and S. Ghosh, “Brillouin Gain Characteristics in Diffusive semiconductors in presence of Hot carriers” Proceeding of National Conference on Emerging Interfaces of Physics and Technology (EIPT-2011), Published by Excel India Publishers, 219-224 (2011).
5. S. Ghosh, Nishchhal Yadav, Nilesh Nimje and P. Dubey, “Parametric Instability in Ion-

- implanted Piezoelectric Semiconductor plasmas” Proceeding of National Conference on Emerging Interfaces of Physics and Technology (EIPT-2011), Published by Excel India Publishers, 261-266 (2011).
6. Daluram Yadav, Nishchhal Yadav and S. Ghosh, “Superconducting sate of parameters of  $Rb_3C_{60}$  Fullerenes: Role of Coulomb pseudo potential” Proceeding of National Conference on Emerging Interfaces of Physics and Technology (EIPT-2011), Published by Excel India Publishers, 205-211 (2011)
7. H.L. Viswanath and S. Ghosh, “Design, analysis and applications of elliptical array antenna” Proceeding of National Conference on Emerging Interfaces of Physics and Technology (EIPT-2011), Published by Excel India Publishers, 225-2235 (2011)
8. H.L. Viswanath, S. Ghosh and D. Ganesh Rao, Curvilinear array as MIMO antennas, National conference on communication technologies for global connectivity, 1-6 (2011).

#### **Books Published:**

1. प्लाज्मा भौतिकी  
**Sanjay K. Ghosh**  
M.P. Hindi Granth Academy, Bhopal, 2004.
2. विद्युत-चुम्बकत्व एवं विद्युत गतिकी  
**Sanjay K. Ghosh**  
M.P. Hindi Granth Academy, Bhopal, 2004.
3. **Emerging Interfaces of Physics & Technology**  
Edited by N. Yadav, S. Dubey & **S.K. Ghosh**  
**ISBN No.: 978-93-81361-31-3**  
Excel India Publishers, New Delhi, 2011

4. **Nonlinear Interactions in Acousto-optic Diffusive Semiconductor Plasma**

**Sanjay K. Ghosh** and Nilesh Nimje

**ISBN No.: 978-3-8473-1712-8**

Lambert Academy Publishing, Germany, 2011.

5. **Electrokinetic Wave Interactions in Ion-implanted Semiconductors**

**Sanjay K Ghosh** and Preeti Thakur Wagh

**ISBN No.: 978-3-659-28854-8**

Lambert Academy Publishing, Germany, 2012

**Research Guidance**

1.	1986	Meena Gupta	Plasma effects in solids: Modulational amplification of acoustic modes in semiconductors.
2.	1986	Rashmi C. Sanghvi	Parametric instability in solid state plasmas.
3.	1987	Rajnish K. Trivedi	Studies of nonlinear effects in the problems of wave propagation in semiconductor with plasma stream.
4.	1987	Mohd. Amir Khan	Coherent nonlinear interactions of waves in solid state plasmas.
5.	1988	Nita Anand	Microwave conductivity of longitudinal electro-kinetic waves in solid state plasmas.
6.	1989	Sushil Phadke	Optical parametric dispersion and amplification in non-centrosymmetric crystal.
7.	1990	G.R.K. Sesha Sai	Stimulated Brillouin scattering and optical phase conjugation in III-IV compound semiconductors.
8.	1990	Mini Thomas	Optical self focusing in non-degenerate Germanium crystal having space charge neutrality.
9.	1991	Mukesh K. Bagadi	Study of third order susceptibility in centro-symmetric crystals.
10.	1991	Muzaffar Husain	Stimulated Brillouin scattering and Brillouin instability in centrosymmetric crystals.

11.	1992	Pragya Daultabadker	Second order optical susceptibility and optical parametric gain in Indium Antimonide and Cadmium Sulphide crystals.
12.	1993	Shriram Patel	Efficiency of Brillouin cell made up of centrosymmetric crystal.
13.	1993	Abdul Saud Khan	Enhanced Raman scattering in drifting semiconductor plasmas.
14.	1994	Ajay K. Saxena	Raman and Brillouin Amplification (Steady-state and transient) in weakly polar semiconductor plasmas.
15.	2008	Shehzana Syed	Diffusion induced parametric interactions indoped semiconductor plasma., (Madurai Kamaraj Univ, Madurai.)
16.	2010	Ajay Damke	Design and implementation of Zeeman Slower.
17.	2010	Khushboo Arora	Investigation of multiferroic properties of pure and doped $\text{ErMnO}_3$
18.	2011	Aartee Sharma	Parametric Processes in III-nitride Semiconductor Plasmas
19.	2012	Puravathan Linda Xavier	Simulation of the Ionic KeV X-ray line Emissions from plasma produced by the femtosecond, picoseconds and nanosecond duration laser pulses to support the experimental study.
20.	2012	Neetu Rathore	Synthesis of pure and doped Lithium Tetra Borate nano-particles by high energy ball mill and quenching techniques and their characterization.
21.	2012	Ramkanya Patidar	Effect of roughness and surface on the magnetic property of Co film.
<b>Conferences Organized</b>			
1.	<b><i>XII National Space Science Symposium</i></b>		
2.	<b><i>Workshop on Radio Chemistry</i></b>		
3.	<b><i>20<sup>th</sup> Young Scientists' Conference</i></b>		
4.	<b><i>National Seminar on Emerging Interfaces of Physics and Technology</i></b>		

## Conferences / Seminars etc. Attended

About 56

## Research Projects

### Projects Completed

- 1. Acoustic wave instabilities in solids**  
University Grants Commission, Delhi. Major research project  
19.08.1980 to 18.08.1982 Rs 3.00 Lakhs
- 2. Nonlinear wave interactions in solid state plasmas**  
University Grants Commission, Delhi. Major research project  
01.06.83 to 31.05.87 Rs 5.00 Lakhs
- 3. Plasma effects in semiconductors: waves and instabilities**  
Department of Science & Technology. Major project  
05.10.87 to 04.10.90 Rs 12.00 Lakhs
- 4. Propagation of ultrasound in solid state plasmas**  
M. P. Council of Science & Technology Major project  
15.07.88 to 14.07.90 Rs 3.00 Lakhs
- 5. Third order optical nonlinearities in semiconductors: Brillouin & Raman scattering**  
M. P. Council of Science & Technology Major project  
01.05.92 to 30.04.95 Rs 4.00 Lakhs
- 6. Wave interactions in non-degenerate semiconductors having space charge neutrality**  
M. P. Council of Science & Technology Major project  
01.11.96 to 30.10.98 Rs 4.00 Lakhs

### Project in Progress

- 1. Wave Interactions in ion-implanted semiconductor Quantum Plasmas**  
M. P. Council of Science & Technology Major Project Rs. 4.43 Lakhs  
01-06-2012 to 31-05-2013

## Awards and Distinctions

1. University gold medal for standing first in the faculty in the M.Sc. Examination.
2. National Associate (UGC) 1982-83.
3. Faculty member, Advanced level summer school on solid state physics, 1986
4. INSA Visiting Fellow 1991-92.
5. Radhakrishnan memorial award for Best Research paper in physics by Govt. of Madhya Pradesh, 1993
6. ICTP visiting professor 1994-1996.
7. South-South Fellowship of Third World Academy of Sciences, 1996- 2000.
8. Honorary member, The Research Board of Advisors, The American Biographical Institute, USA.
9. Best Research Paper Award by MPCST, Bhopal 2012

## Association with Professional Bodies

### **Committees and Boards**

1. Assistant Proctor : From 9.6.94 to 23.7.97  
Vikram University, Ujjain
2. In-charge Librarian : From 13.11.96 to 12.5.97  
Maharaja Jiwajirao Library  
Vikram University, Ujjain
3. Proctor : From 1.8.97 to 31.7.99  
Vikram University, Ujjain
4. Member : 1997-1999 sessions.  
Sambadhta Samiti  
of private colleges  
Vikram University, Ujjain
5. University Nominee : From 6.12.97 to 05.12.12000.  
Academic council  
Madhav Vigyan  
Mahavidyalaya, Ujjain
6. Expert Member : From July, 1998 to Nov., 2002.  
Board of studies in  
Applied Physics  
S.G.S.I.T.S, Indore
7. Member : From 2.7.98 to 1.7.2000.  
Salahkar samiti, Rojgar  
Suchana aur Margdarshan  
Centre, Ujjain
8. Member on several capacities : From Dec., 1987 continued.  
Board of Studies in Physics  
Vikram University, Ujjain
9. Member : From Dec., 1995 continued.  
faculty of sciences  
Vikram University, Ujjain
10. Chief co-ordinator : Semester Exam. 1999-2000  
Central Valuation
11. Chairman : Feb., 2000 to Jan., 2003:  
Board of Studies in Physics Oct., 2006 to Sept., 2009  
Vikram University, Ujjain
12. Co-ordinator : Main Exam. 2001.  
Confidential cell  
Vikram University, Ujjain
13. Member Organising Committee, : 25-28 Feb 2002  
XII National Space Science  
Symposium, Bhopal
14. Dean, Faculty of Sciences : 26 Oct 2002 to 25 Oct 2004  
Vikram University



15	Ujjain Member, Executive Council Vikram University Ujjain	: Since 2004 on several capacities
16	Director, Workshop on Radio Chemistry, Vikram University	
17	Director, 20 <sup>th</sup> Young Scientists' Conference, Vikram University	: 28/02/2005 to 2/3/2005
18	Chairman, Organising Committee National Conference on EIPT	: 28-30 March 2012
19	Editor, Ind J Appl Phys	: 2010-12
20	Editor-in –chief, Ind J Appl Phys	: 2013 contd

**Memberships**

1. Life fellow, Ultrasonic Society of India.
2. Life member, Indian Physics Association.
3. Member, Indian Science Congress Association.

**Other Activities**

**Research Interests**

**Survey Articles**

**Popular Article**

**Delivered Lectures**

**Forthcoming Research**