UNIVERSITY OF MARYLAND

Department of Physics
College Park, Maryland

CURRICULUM VITAE

S. M. Bhagat
Professor

I. Education:

I. Sc.	Panjab University	1948
B. A.	Jammu & Kashmnir Univ.	1950
M. Sc.	University of Delhi	1953
Ph.D.	University of Delhi	1956

II. Experience in Higher Education:

1954-57	University of Delhi	Lecturer
1960-62	Carnegie Inst. of Tech.	Research Associate
1962-67	University of Maryland	Assistant Professor
1968-69	Indian Institute of Tech. Kanpur, India	Visiting Professor
1967-73	University of Maryland	Associate Professor
1973	University of Maryland	Professor
1975-76	University of Uppsala, Uppsala, Sweden	Visiting Professor

III. Experience Other than Higher Education:

1957-60	Research Physicist :	Clarendon Lab., Oxford, England
Fall 85	Phys. Interview Program:	Interviewed prospective grad students in 11 South Asian countries,
Fall 87	TOKTEN Visitor:	Visited six laboratories and institutes in India
Fall 89	Visitor, Acad. of Sci.:	Visited Peking University, China Nanking University, Shanghai Univ. of Sci. and Technology
Fall 89	Visiting Professor:	Inst. of Mining & Metallurgy, Krakow, Poland Inst. of Physics, Warsaw, Poland

Fall 92	Visiting Professor:	T.I.F.R., Bombay, India
Spring 93	Visiting Professor:	School of Physics, Univ. of Hyderabad, India
Spring 93	Visiting Professor:	I.I.T., Kharagpur, India

IV. Publications

See attached

V. Professional Activities:

Life member, Oxford Union Society
American Physical Society
President, Greater Washington Solid State Physics Colloquium
Fellow, Washington Academy of Science

VI. Honors and Awards:

J and K University Gold Medal, 1950
Overseas Scholar Grant, 1957-60

VII. Contracts Past 10 years

Maryland Procurement with R. Glover
MDA-904-80-C-0480
1/4/80 - 2/14/83
$341,711

Maryland Procurement with R. Glover
MDA-904-83-C-0466
2/24/83 - 12/30/85
$857,348

Naval Research Laboratory
NOOO14-84-K-2010
9/30/84 - 11/30/85
$27,080

Maryland Procurement with R. Glover, D. Drew, and E. Williams
MDA-904-85-C-6092
10/1/85 - 9/30/90
$2 Meg.

Maryland Procurement with R. Glover and D. Drew
10/1/91 - 9/30/94
$2.4 Meg.

MIPS
2/88 - 4/89
$40,000

MD Procurement (with D. Drew) 94-Present
~300K/yr

Navy (with R. Ramesh)
$236,800

Publications

Papers Published

1. **Vapor Pressure of Liquid He3 and Liquid Helium II**, S. M. Bhagat and P. K. Katti, Sci. and Cult. (India) 19, 461 (1954).

2. **Vapor Pressure of He3-He4 Mixtures**, S. M. Bhagat and P. K. Katti, Sci. and Cult. (India) 20, 43 (1954); Prog. Theor. Phys. (Japan) 12, 380 (1954).

3. **Statistical Thermodynamics of Mixtures of Bose-Einstein and Fermi-Dirac "Liquids",** S. M. Bhagat and P. K. Katti, Proc. Nat. Ins. Sci. (India) 21A, 21 (1955).

4. **Variation of Configurational Energy of Binary Solutions**, S. M. Bhagat and P. K. Katti, J. Chem. Phys. 22, 1951 (1954).

5. **Effect of Van Der Walls Corrections on the Lambda-Temperature of He3-He4 Solutions**, S. M. Bhagat, Proc. Nat. Ins. Sci. (India) 21A, 165 (1955).

6. **Further Considerations Regarding He3-He4 Mixtures**, S. M. Bhagat, Proc. Nat. Ins. Sci. (India) 22A, 273 (1956).

7. **Specific Heat and Entropy of Liquid Helium II**, S. M. Bhagat, Proc. Phys. Soc. (London) 69B, 1117 (1956).

8. **Rotation of Liquid Helium II**, S. M. Bhagat and P. K. Pathria, Phys. Rev. 106, 3 (1957).

9. **Hydrodynamic Resistance in Liquid Helium II and Determination of the Normal C Concentration**, S. M. Bhagat and P. K. Pathria, Phys. Rev. 106, 199 (1957).

10. **Eddy Viscosity in Liquid Helium II**, S. M. Bhagat, Proc. Phys. Soc. (London) 75, 303 (1960).

11. **Isothermal Flow of Liquid Helium II in Wide Capillaries**, S. M. Bhagat and K. Mendelssohn, Cryogenics Journal 2, 134 (1961).

12. **Thermomechanical Pressure Measurements in Liquid Helium II**, S. M. Bhagat, Cryogenics J. 2, 139 (1961).

13. **Growth of Mutual Friction in Liquid Helium II**, S. M. Bhagat, P. R. Critchlow and K. Mendelssohn, Cryogenics J. 5, 166 (1964).

14. **Ferromagnetic Resonance in Iron and Nickel**, S. M. Bhagat, L. L. Hirst and J. R. Anderson, J. Appl. Phys. 37, 194 (1965).

15. **Ferromagnetic Resonance in Nickel at Low Temperatures**, S. M. Bhagat and L. L. Hirst, Phys. Rev. 151, 401 (1966).

16. **Ferromagnetic Resonance in Pure Iron at Low Temperatures**, S. M. Bhagat, J. R. Anderson and L. L. Hirst, Phys. Rev. Letters 16, 1009 (1966).

17. **Thermal Conduction in Bismuth at Liquid Helium Temperatures**, S. M. Bhagat and D. D. Manchon Jr., Phys. Letters 24A, 147 (1967).

18. **Influence of the Anomalous Skin Effect on the Ferromagnetic Resonance Line-Width in Iron**, S. M. Bhagat, Phys. Rev. 155, 510 (1967).

19. **Ferromagnetic Resonance in Pure Iron at High Temperatures**, S. M. Bhagat and H. 0. Stevens Jr., J. of Appl. Phys. 39, 1067 (1968).

20. **New Technique for Measurement of the Temperature Dependence of the Saturation Magnetization-Nickel**, S. M. Bhagat and C. W. Lucas Jr., Review of Sci. Inst. 39, 255 (1968)

21. **Heat Transport in Bi at Liquid Helium Temperatures**, S. M. Bhagat and D. Manchon, Phys. Rev. 164, 966 (1968).

22. **Investigations of Relaxation Processes in Yig with Propagating Magnetostatic Spin Waves**, S. M. Bhagat and E. Burke, J. of Appl. Phys. 40, 1189 (1969).

23. **Critical Heat Flux in Liquid Helium II in the Neighborhood of the h-Transition**, S. M. Bhagat and B. M. Winer, Phys. Lett. 27A, 537 (1968).

24. **Ferromagnetic Resonance in Nickel at High Temperatures**, S. M. Bhagat and E. P. Chicklis, Phys. Rev. 178, 178 (1969).

25. **Ferromagnetic Resonance in Ni-Cu Alloys**, S. M. Bhagat and J. N. Lloyd, Solid State Comm. 8, 2029 (1970).

26. **Low Temperature Resistivity of Bi and its Alloys**, S. M. Bhagat, V. Chopra and R. K. Ray, Physica Status Solidi 4, 205 (1971).

27. **HeII-HeI Transition in the Presence of a Heat Current**, S. M. Bhagat and R. A. Lasken, Phys. Rev. A3, 340 (1971).

28. **The Velocity of Second Sound in a Heat Current**, S. M. Bhagat and R. S. Davis, Phys. Lett. 34A, 233 (1971).

29. **HeII-HeI Transition in a Heat Current: Model Calculations**, S. M. Bhagat and R. A. Lasken, Phys. Rev. 4A, 264 (1971).

30. **Ferromagnetic Resonance in Single Crystal Nickel Disks: Angular Dependence of Linewidth**, S. M. Bhagat, J. R. Anderson and F. L. Cheng, Physica Status Solidi 45B, 357 (1971).

31. **Influence of a D.C. Heat Flux on the Velocity of Second Sound Near Th**, S. M. Bhagat and R. S. Davis, J. Low Temp. Phys. 7, 157 (1972).

32. **Depression of Th by a Heat Current**, S. M. Bhagat and R. A. Lasken, Phys. Rev. A3, 22979 (1972).

33. **F.M.R. in Iron at High Temperatures**, S. M. Bhagat and M. Rothstein, Solid State Comm., Vol. 11, 1535, (1972).

34. **Effects of Deposition Conditions on the Properties of Amorphous Silicon**, S. M. Bhagat, S. K. Bahl and R. Glosser, Solid State Comm. 13, 1159 (1973).

35. **SWR in Yig**, S. M. Bhagat, Vittoria, Lassoff, and Guenzer, Physics Status Solidi 20(a), 731 (1973).

36. **Temperature Variation of Ferromagnetic Relaxation in the 3-d Transition Metals**, S. M. Bhagat and P. Lubitz, Phys. Rev. B10, 179 (1974).

37. **Resonance Methods - Magnetic Materials, Chapter in Vol. VI pt. 2 of Techniques in Metals Research**, S. M. Bhagat and John Wiley (New York), (1973).

38. **Effect of Exchange Field on the Damping of Spin-Wave Resonance Modes**, S. M. Bhagat, P. Lubitz, G. C. Bailey and C. Vittoria, Phys. Rev. B11, 3585 (1975).

39. **Properties of Amorphous Silicon Films -Dependence on Deposition Conditions**, S. M. Bhagat and S. K. Bahl, Journ. Non. Cryst. Solids 17, 409 (1975).

40. **Temperature Dependence of Thin Film Ferromagnetic Resonance Linewidths**, S. M. Bhagat, Ponce and Lubitz, Sol. State Comm. 18, 521 (1976).

41. **Magnetic Resonance in a-TbFe2 and a-GdFe2**, S. M. Bhagat and D. K. Paul, Phys. Rev. Lett. 35, 1459 (1975).

42. **Time Variation of the Thickness and Electrical Resistivity of Ultra Thin Films of a-Si**, S. M. Bhagat and S. K. Bahl, Journ. Non-Crys. Solids 21, 279 (1976).

43. **Hall Effect in Amorphous Magnetic Materials -Metglas 2826 and 2826B**, S. M. Bhagat, K. V. Rao, R. Malmhall, and G. Backstrom, SoI. State Comm. 19, 193 (1976).

44. **Anamolous Magnetization of Metglas 2826A**, S. M. Bhagat, E. Figueroa, L. Lundgen, and 0. Beckman, Solid State Comm. 20, 961 (1976).

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46. **Measurements of the Electrical Resistivity of Amorphous Ferromagnets**, S. M. Bhagat, O. Rapp and Johannesson, Sol. State Comm. 21, 83 (1977).

47. **Hall Resistivity of a Magnetic Amorphous Alloy -Effects of Thermal Cycling and Annealing**, S. M. Bhagat, R. Malmhall, G. Backstrom and K. V. Rao, Jour. Non-Crys. Solids 28, 159 (1978).

48. **Spin Resonances in Amorphous Alloy Films**, S. M. Bhagat, J. N. Lloyd and N. Heiman, J. Appl. Phys. 49(3), 1683 (1978).

49. **Frequency and Temperature Dependence of Spin Resonances in Cubic FeGe**, S. M. Bhagat, S. Haraldson and L. Pettersson, Journ. Mag. Res. 32, 115 (1978).

50. **Temperature Dependence of the Magnetization in Amorphous Alloys**, S. M. Bhagat, M. L. Spano and K. V. Rao, J. Appl. Phys. 50, 1580 (1979).

51. **Evidence for a Surface Ferromagnetic Layer in Amorphous YFe_2**, S. M. Bhagat, J. N. Lloyd, A. R. Knudson and C. R. Gossett, J. Appl. Phys. 50, 1614,(1979).

52. **Metglas 2826B -Transport, Magnetic and Thermal Properties**, S. M. Bhagat, R. Malmhall, G. Backstrom, K. V. Rao, M. Meichle and M. B. Salamon, J. of Appl. Phys. 49, 1727 (1978).

53. **Hall Resistivity of a Two-Phase Magnetic Material - Crystallized Metglas 2826**, S. M. Bhagat, R. Malmhall, G. Backstrom and K. V. Rao, J. of Phys. F9, 317 (1979).

54. **Spin Resonances in Amorphous Y-Fe Alloys**, S. M. Bhagat, J. N. Lloyd and D. K. Paul, J. of Magnetism and Magnetic Materials 10, 65 (1979).

55. **Transport Properties of Amorphous Ferromagnetic-Hall and Ohimic Resistivities**, S. M. Bhagat, R. Malmhall, K. V. Rao and G. Backstrom, Phys. Stat. Solidi 53a, 641 (1979).

56. **Magnetization of Amorphous Alloys -Deviations from Spin Wave Theory at Low Temperatures**, S. M. Bhagat, M. L. Spano, H. S. Chen, and K. V. Rao, Solid State Comm. 33, 303 (1980).

57. **Magnetic Phase Diagram of (FEXNIl-X)75P16B6A!3 Alloys**, S. M. Bhagat, J. A. Geohegan and H. S. Chen, Sol. State Comm. 36, 1 (1980).

58. **Magnetic and Transport Properties of Transition-Metal Based Glassy Rubbibs**, S. M. Bhagat, K. V. Rao, R. Malmhall, G. Backstrom and H.S. Chen, IEEE Trans. on Magnetics, Mag. 16, 896 (1980).

60. **Unified Description of the Effect of Spin Freezing on ESR Linewidth**, S. M. Bhagat, M. L. Spano and J. N. Lloyd, Sol. State Comm. 38, 261 (1981).

61. **Ferromagnetic vs. Spin Glass Behavior in Amorphous Fe-Ni Based Alloys**, S. M. Bhagat, J. A. Geohegan, M. L. Spano and H. S. Chen, J. Appl. Phys. 52, 1741 (1981)

62. **Ferromagnetic Surface Layer in Amorphous YFe Thin Films**, S. M. Bhagat and J. N. Lloyd, J. Appl. Phys. 52, 1838 (1981).

63. **Ferromagnetic Resonance on Amorphous Alloys**, M. L. Spano and S. M. Bhagat, Jour. Mag. and Mag. Mat. 24, 143 (1981).

64. **Magnetic Phases of Amorphous Transition Metal-Metalloid Alloys**, J.A. Geohegan and S. M. Bhagat, Jour. Mag. and Mag. Mat. 25, 17 (1981).

65. **An Electron Spin Resonance Study of $Fe_yNi_{80-y}P_{l4}B_6$ Alloys in the Re-Entrant Regime**, M. A. Manheimer, S. M. Bhagat, L.M. Kistler and K. V. Rao, Jour. Appl. Phys. 53, 2220 (1982).

66. **Low Temperature Electrical Resistance of Disorder Metals**, 0. Rapp, S. M. Bhagat and H. Gudurundsson, Sol. St. Comm. 42, 741 (1982).

67. **Spin Glass Behavior and Non-Ergodicity in Amorphous Iron-Boron Alloys**, D. J. Webb, S. M. Bhagat, K. Moorjani, T. 0. Poehler and F. G. Satkiewicz, Sol. St. Comm. 43, 239 (1982).

68. **Collapse of Ferromagnetism in Amorphous Fe0 65 Mn 35)75 P16 B6 A3**, M. A. Manheimer, S. M. Bhagat and H. S. Chen, Phys. Rev. B26, 456 (1982).

69. **Magnetic Phases of Amorphous Fey Ni80-y P14 B6 Alloys**, L. M. Kistler and S. M. Bhagat, J. Phys. C15, L929 (1982).

70. **On the use of Ferromagnetic Resonance to Determine the Ferromagnetic-Spin Glass Transition Line-Temperature Dependence of Linewidths**, S. M. Bhagat, Sol. St. Comm. 43, 813 (1982).

71. **Disappearance of Ferromagnetism in Amorphous Fe_{1-x} $Mn_x)_{1.5}$ P_{16} B_6 AC_3 Ribbons**, M. A. Manheimer, S. M. Bhagat and H. S. Chen, J. Appl. Phys. 53, 7737 (1982).

72. **Electron Paramagnetic Resonance Linewidths in Diluted Magnetic Semi-conductors: $Cd_{1-x}Mn_xTe$**, D. J. Webb, S. M. Bhagat and J. K. Furdyna, J. Appl. Phys. 55, 2310 (1984).

73. **Magnetic Resonance in Amorphous Fe_xB_{100-x} Sputtered Films**, D. J. Webb, S. M. Bhagat, K. Moorjani, T. 0. Poehler and F. G. Satkiewicz, Proc. I.E.E.E. Mag. 19, 1892 (1983).

74. **Study of Magnetic Regimes in a-Fe_xB_{100-x} by dc Magnetization Measurements**, D. J. Webb, S. M. Bhagat, K. Moorjani, F. G. Satkiewicz, T. 0. Poehler and M. A. Manheimer, J. Non-Cryst. Solids 61, 1377 (1984).

75. **Low Field Magnetization Studies on (Fe_xNi_{1-x})75Pl6B6A!3 Ribbons**, P. Mazumdar, S. M. Bhagat, M. A. Manheimer and H. S. Chen, J. Appl. Phys. 55, 1685 (1984).

76. **Magnetic Resonance in Amorphous $Fe_xNi_{80-x}P_{l4}B_6$ II. Spin Glass Alloys**, D. J. Webb and S. M. Bhagat, J. Mag. & Mag. Mat. 42, 1121 (1984).

77. **Magnetic Resonance in Amorphous $Fe_xNi_{80-x}P_{14}B_6$ I. Ferromagnetic and Reentrant Alloys**, D. J. Webb and S. M. Bhagat, J. Mag. & Mag. Mat. 42, 109 (1984).

78. **Reentrant Magnetism-A Low Field Study**, M. A. Manheimer, S. M. Bhagat and H. S. Chen, J. of Mag. & Mag. Mat. 38 (1983).

79. **Re-Entrant Magnetism**, S. M. Bhagat, Physics News (Bombay) 14, 63 (1983).

80. **Magnetism in Amorphous Fe-B Alloys**, D. J. Webb, S. M. Bhagat, K. Moorjani, T. 0. Poehler and F. G. Satkiewicz, Jour. Mag. and Mag. Mat. 44, 158 (1984).

81. **Dynamic Random Fields in Diluted Magnetic Semiconductors**, H. A. Sayad and S. M. Bhagat, Phys. Rev. B31, 591 (1985).

82. **Two Level Systems and FMR Near the FM-SG Transition**, M. A. Manheimer, S. M. Bhagat and D J. Webb, Jour. Appl. Phys. 57 3476, (1985).

83. **Macroscopic Dynamic Effects in an Amorphous Ferromagnet**, L. Yan, S. M. Bhagat, P. Mazumdar, K. Moorjani and T. Kistenmacher, Jour. Appl. Phys. 57, 3730, (1985).

84. **Influence of Topology Near the MCP of a-$(Fe_x$ $Ni_{100-x})_{0.75}P_{16}B_6A_3$**, P. Mazumdar, S. M. Bhagat and M. A. Manheimer, Jour. Appl. Phys. 57, 3479 (1985).

85. **Dynamics of a Concentrated Spin Glass a-FeB2**, K. Moorjani, T. O. Poehler, F. G. Satkiewicz, M. A. Manheimer, D. J. Webb and S. M. Bhagat, Jour. Appl. Phys. 57, 3444 (1985).

86. **Frequency Dependence of FMR in Amorphous Magnets: Ferromagnetic and Reentrant Alloys**, S. M. Bhagat, D. J. Webb and M. A. Manheimer, Jour. Mag. and Mag. Mat. 53, 209 (1985).

87. **Resonant Frequency Dependence of Spin Relaxation in Concentrated Metallic Spin Glasses**, M. J. Park, S. M. Bhagat, M. A. Manheimer, K. Moorjani, Phys. Rev. B33, 2070 (1986).

88. **Simultaneous Excitation of Magnetostatic and Exchange Modes in Thin Circular Yig Films**, J. Barak, S. M. Bhagat and C. Vittoria, Jour. Appl. Phys. 59, 2521 (1986).

89. **Frequency Dependence of Magnetic Resonance in Concentrated Metallic Spin Glasses**, M. J. Park, S. M. Bhagat, M. A. Manheimer, K. Moorjami, Jour. Mag. and Mag. Mat. 59, 287 (1986).

90. **Onset of Ferromagnetism at the Multicritical Point of Amorphous Alloys**, P. Mazumdar and S. M. Bhagat, Jour. Mag. & Mag. Mat. 54-57, 271 (1986).

91. **ESR in Concentrated Spin Glasses Frequency/Temperature Dependence**, M. J. Pack, S. M. Bhagat, M. A. Manheimer and K. Moorjani, Jour. Mag. & Mag. Mat. 54-57, 109 (1986).

92. **Spin Relaxation in Random Magnets**, K. Moorjani, S. M. Bhagat, and M. A. Manheimer, IEEE Trans. Mag. MAG-22, 550 (1986).

93. **Magnetic Resonance in Random Spin Systems**, S. M. Bhagat and H. A. Sayad, Jour. Mag. & Mag. Mat. 61, 151 (1986).

94. **Amorphous Mag. Alloys Near Critical Concentration**, P. Mazumdar and S. M. Bhagat, Jour. Mag. & Mag. Mat. 66, 263 (1987).

95. **Magnetic Response Near the Critical Concentration for Ferromagnetism**, P. Mazumdar and S. M. Bhagat, Jour. Appl. Phys. 61, 3633 (1987).

96. **Magnetism in the Amorphous Mn_xB_{100-x} System**, S.B. Liao, S. M. Bhagat, M.J. Park, M. A. Manheimer and K. Moorjani, Jour. Appl. Phys. 61, 3636 (1987).

97. **Determination of Coordination Number by Magnetic Resonance in Reentrant Magnets**, M. A. Manheimer, S.B. Liao, S. M. Bhagat and K. Moorjani, Sol. St. Comm. 63, 21 (1987).

98. **Anomalous Freq. Dependence of Spin Relaxation in the Conc. Spin Glass ay-(Fe.16Ni.84)75G25**, S. B. Liao, S. M. Bhagat, M. A. Manheimer and M. J. Park, Sol. St. Comm. 63, 119 (1987).

99. **Elementary Excitations in Reentrant Magnets and Conc. Spin Glasses**, S. B. Liao and S. M. Bhagat, Sol. St. Comm. 64, 1005 (1987).

100. **Energy Gap in Conc. Spin Glasses**, S.B. Liao, S. M. Bhagat, M. A. Manheimer and K. Moorjani, Jour. Appl. Phys. 63, 4354 (1988).

101. **"Zero" Frequency Spin Relaxation in Reentrant Magnets**, E.M. Jackson, S. M. Bhagat, S. B. Liao and M. A. Manheimer, Jour. Appl. Phys. 63, 4089 (1988).

102. **Spin Dynamics in Randomized Spin Systems**, S. M. Bhagat, M. A. Manheimer and K. Moorjani, Proc. of Int'l. Conf. of Metallic and Semiconducting Glasses, Trans. Tech. Publications, p. 641 (1987).

103. **Initial Susceptibility and Microwave Absorption in Powder Samples of $Y_1Ba_2Cu_3O_{6.9}$**, E. M. Jackson, S. B. Liao, J. Silvis, A. H. Swihart, S. M. Bhagat and R. E. Glover III, Physica C152, 125 (1988).

104. **Field Induced Magnetization and Energy Gap in Concentrated Spin Glasses**, P. L. Paulose, V. Nagarajan, S. M. Bhagat and R. Uijayaraghavan, Sol. St. Comm. 67, 685 (1988).

105. **HTSC Studies at University of Maryland**, S. M. Bhagat, in Rev. of Sol. State Sci. 2, 239 (1988).

106. **Grain Size Dependence of Microwave Abs. in 1-2-3**, A. Gould, E. Jackson, K. Renouard, R. Crittendan, S. Bhagat, N. Spencer, L. Dolhert and R. Wormsbecher, Physica C156, 555 (1988).

107. **Far Infrared Absorption in Bulk $Y_1Ba_2Cu_3O_{7-x}$ Superconductor**, M.-W. Lee, T. Pham, H. D. Drew, and S. M. Bhagat, R. E. Glover III, Moseley, A. Stewart and Lisse, Sol. St. Comm. 65, 1135 (1988).

108. **AC Susceptibility of High T_c Sintered Cylinder**, S. D. Murphy, K. Renouard, R. Crittenden and S. M. Bhagat, Sol. St. Comm. 69, 367 (1989).

109. **Kink Point Method and Bi Based HTSC**, G. Shaw, R. Crittenden, Y. Moon and S. M. Bhagat, Jour. Mag. & Mag. Mat. 78, L13 (1989).

110. **FMR**, S. M. Bhagat, Mat. Handbook, Ast. M. Vol. 10, p. 267 (1986).

111. **Study of Microwave Power Absorption in Y-Ba-Cu based HTSC and Allied Compounds**, E. M. Jackson, G. J. Shaw, R. E. Crittenden, Z. Y. Li, A. M. Stewart, S. M. Bhagat and R. E. Glover III, Supercond. Sci. & Tech. 2, 29 (1989).

112. **Frequency Dependence of Magnetic Hysteresis in the Field Induced Microwave Absorption in HTSC at $T << T_c$**, S. D. Tyagi, A. Gould, G. Shaw, S. M. Bhagat and M. A. Manheimer, Phys. Lett. A136, 499 (1989).

113. **Field Induced Parameters of Reentrant Magnets and Concentrated Spin Glasses**, S. M. Bhagat, Jour. Mag. and Mag. Mat. 80, 229 (1989).

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116. **Grain Size Dependence of Low Field Microwave Absorption in 1-2-3 Powders**, A. Gould, S. D. Tyagi, S. M. Bhagat and M. A. Manheimer, IEEE Trans. on Magnetics 25, 3224 (1989).

117. **Low Field Investigations of Single Crystal Bi 2212 - Magnetization**, G. Shaw, S. D. Murphy and S. M. Bhagat, Physica C162-164, 341 (1989).

118. **Field Induced Microwave Absorption Bi 2212**, S. D. Tyagi, A. Gould and S. M. Bhagat, Physica C162-164, 1569 (1989).

119. **Field Induced Microwave Absorption in High T_c Powders**, A. Gould, S. M. Bhagat, M. A. Manheimer and S. D. Tyagi, Jour. Appl. Phys. 67, 5020 (1990).

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122. **Equation of State for TRM In Micron-Size Powders of Copper Oxide SCRS**, G. Shaw G. Agrawala and S. M. Bhagat, Physica C175, 27 (1991).

123. **Effective Zero Field Splitting in the Ground Doublet in $ErBa_2Cu_3O_x$**, M.X. Huang, E. M. Jackson, S. M. Bhagat, L.C. Gupta, A. K. Rajarajan and Vijayaragharan, Jour. Mag. & Mag. Mat. 97 297 (1991).

124. **Enhanced Microwave Absorption near T_c in Micron-Size Powders of Cuprate SCRS**, M. A. Manheimer, S. Lofland, A. Gould, S. M. Bhagat, B. Halsey, S. M. Green and S. D. Tyagi, Physica C183, 324 (1991).

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Contributed Papers (International Meetings)

1. **Vorticity in Superflow**, S. M. Bhagat and K. Mendelssohn, Proc. Kammerlingh Onnes Conf. on Low Temperature Physics, Leiden (Holland), p. S147 (1958).

2. **Eddy Viscosity in Liquid Helium II**, S. M. Bhagat and K. Mendelssohn, proc. of VIIth Int'l. Conf. of Low Temperature Physics, Toronto (Canada), p. 566 (1960).

3. **Ferromagnetic Resonance in Iron at High Temperatures**, S. M. Bhagat, Int'l. Conf. on Magnetism, Boston (1967).

4. **Ferromagnetic Resonance in Ni Near the Curie Temperature**, S. M. Bhagat, Int'l. Conf. on Magnetism, Grenoble (France), 1970.

5. **Critical Heat Currents in Liquid Helium II Near T!**, S. M. Bhagat, 12th Int'l. Conf. on Low Temperature Physics, Kyoto (Japan), 1970.

6. **Thermal conduction in Mercury at Liquid Helium Temperatures**, S. M. Bhagat and A. . Serlemitsos, 8th Conf. on Thermal Conductivity, Ames (Iowa), Sept. 1968.

7. **Thermal Conduction in Bi at Liquid Helium Temperatures-Effects At Intermediate Fields**, S. M. Bhagat and B. Winer, 7th Int'l. Conf. on Thermal Conductivity, NBS. (Gaithersburg, Md.), Nov. 1967.

8. **HeII-HeI Transition in a Heat Current, LT 13 Int'l. Low Temperature Conf**., S. M. Bhagat, Boulder, Colorado, 1972, Vol. 1, p. 328.

9. **FMR in hcp Co at Low Temperatures**, S. M. Bhagat and P. Lubitz, AIP Proc. No. 10, Part I, 125 (1972).

10. **FMR in hcp Co,** S. M. Bhagat and P. Lubitz, Int'l. Conf. on Magnetism, (1973), Moscow, Vol. V, p. 119.

11. **FMR in a-$TbFe_2$ a-$GdFe_2$ and a-YFe_2**, S. M. Bhagat and D. K. Paul, AIP Proc. No. 29, 176 (1975).

12. **Temperature and Pressure Variation of Hall Effects**, S. M. Bhagat, K. V. Rao, R. Malmhall and G. Backstrom, Int'l. Conf. on Magnetism, Amsterdam, August 1976, Physics 86-88B, 796 (1977).

13. **Critical Behavior of an Amorphous Ferromagnet -Effects of Thermal Cycling and Annealing**, S. M. Bhagat, K. V. Rao, R. Malmhall and G. Backstrom, 13th IUPAP Conf. on Statistical Physics, Haifa, Israel, August 1977.

14. **Frequency and Temperature Dependence of Spin Resonances in Cubic FeGe**, S. M. Bhagat, Haraldson and Patterson, Vth Int'l. Magn. Res. Symposium, Barff, Canada, June 1977.

15. **ESR in Concentrated Spin Glasses**, S. M. Bhagat, Frequency/Temperature Dependence ICM85, San Francisco, Aug. 1985, Paper #4Pj11.

16. **Low Field Magnetic Response in Alloys Wear Conc. Critical for Ferromagnetism**, P. Mazumdar, S. M. Bhagat, ICM85, San Francisco, August, 1985, Paper #2Pk/3.

17. **HTSC in Micron Size Powders**, G. Shaw, A. Gould, S. M. Bhagat, S. D. Tyagi, and M. A. Manheimer, Beijing HTSC Conf., September 1989.

Contributed Papers (A.P.S.)

We typically present 5 to 6 papers per year at APS Meetings.

Ph. D.'s awarded under my supervision

L. Hirst	(1965)	M. L. Spano	(1980)
D. Manchon	(1967)	J. A. Geohegan	(1981)
A. Serlemitsos	(1969)	D. J. Webb	(1983)
B. Winer	(1970)	H. A. Sayad	(1985)
R. Lasken	(1973)	P. Mazumdar	(1986)
R. Davis	(1973)	E. M. Jackson	(1990)
M. Rothstein	(1974)	G. J. Shaw	(1990)
E. Burke	(1975)	M. X. Huang	(1993)
P. Lubitz	(1975)	J. Ramachandran	(1995)
B. Romenesko	(1977)	S. Lofland	(1995)

Invited Papers

1. **Isothermal Flow in Liquid Helium II, First International Conference on Quantum Liquids**, Oxford (England), March 1960.

2. **Ferromagnetic Relaxation in Metals -Phenomenology, Symposium on Solid State Physics**, Dept. of Atomic Energy, Govt. of India, December 1968.

3. **Ferromagnetic Resonance, Solid State Symposium**, Indian Inst. of Technology, Kanpur (India), March 1969.

4. **Resonance Phenomena in Metals, Czechoslovakian Academy of Science**, Prague (Czechoslovakia), June 1969.

5. **Magnetic and Transport Properties of Transition Metal Based Glassy Ribbons**, IEEE Trans. on Magnetics, Sept. 1980.

6. **Spin Dynamics in Concentrated Spin Glasses**, Conf. on Transport and Relaxation Processes in Random Materials, Oct. 1985.

7. **Spin Relaxation in Random Magnets**, Inter. Mag. '86, April 1986.

8. **Spin Dynamics in Randomized Systems**, Dec. 1986, MSG 86, Hyderabad, India.

9. **Spin Dynamics in Randomized Systems**, APS, March 1987.

10. **Microwaves and HTSE**, Winter School on Superconductivity, T.I.F.R. Bombay, 1989.

11. **Microwaves and HTSE**, Winter School on Superconductivity, T.I.F.R. Bombay, 1989.

12. **Microwave Magnetoabsorption**, Ampere Workshop, Poland, April 1994.

Colloquia and Special Lectures

1. **F.M.R. in Amorphous Materials**, NSWC, White Oak, Md., June 1975.

2. **"Amorphous Silicon" Colloquium**, Univ. of Uppsala, Sweden, Oct. 1976.

3. Course of Ten Special Lectures (2 per week) on **ESR in Magnetic Metals**, Uppsala University, Uppsala, Sweden, Nov.-Dec. 1975.

4. **Spin Resonances in a-TbFe2 and a-GdFe2**, Ind. Inst. of Tech., Delhi, India, Dec. 1976.

5. **Spin Resonances in Amorphous Materials**, Ind. Inst. of Tech., Kanpur, India, Jan. 1976.

6. **Amorphous Metglasses**, Colloquium at Sandvik Research, Sweden, March 1976.

7. Course of Eight Special Lectures (2 per week) on **Amorphous Materials- Metals and Semi-Conductors**, April-May 1976, Royal Inst. of Tech., Stockholm, Sweden.

8. **Amorphous Si**, Munich Tech. Univ., Munich, Germany, July 1976.

9. **Metglas -Electrical and Magnetic Properties**, Univ. of Frankfurt, Frankfurt, July 1976.

10. **Electrical and Magnetic Properties of Metallic Glasses**, NRL, Washington D.C. Sept. 1976.

11. **Amorphous Magnetism**, University of Maryland, Oct. 1976.

12. **Amorphous Magnetic Materials**, Laboratory for Physics Sciences, College Park, Md., Nov. 1976.

13. **Magnetic Glasses**, Catholic University of America, Washington D.C., April 1977.

14. **Surface Ferromagnetism in Yfe**, Johns Hopkins Univ., Apr. 1978.
15. **Amorphous Magnetism**, UMBC, Oct. 1979.
16. **Amorphous Magnetic Materials**, Univ. of Cincinatti, Feb. 1980.
17. **Rare-Earth Based Amorphous Ferromagnets**, 3M Company, May 1981.
18. **Spin Resonance in Metallic Glasses**, Univ. of Minnesota, May 1981.
19. **Reentrant Magnetism Colloquium**, Univ. of Maryland, Dec. 1982.
20. **FMR in Amorphous Materials Seminar**, Univ. of Maryland, May 1984.
21. **Spin Glasses**, Mahidol University, Bangkok, Thailand, Dec. 1985.
22. **Reentrant Magnetism**, Kansas, April 1986.
23. **REEM - Statics**, TIFR, Bombay, Dec. 1986.
24. **REEM - Dynamics**, TIFR, Bombay, Dec. 1986.
25. **New Directions in REEM**, University of Poona, Dec. 1986.
26. **Diluted Magnets**, IIT, Kanpur, Jan. 1987.
27. **Resonance in Spin Glasses**, University of Maryland, March 1986.
28. **High T_c Superconductivity**, University of Maryland, September 1987.
29. **High T_c Superconductivity**, Mat. Res. Soc.; Baltimore, October 6, 1987.
30. **High T_c Oxide Powders**, University of Pennsylvania; Philadelphia, October 30, 1987.
31. **High T_c**, N.P.L., New Delhi, November 1987.
32. **High T_c**, University of Delhi, November 1987.
33. **Spin Glasses**, 6th Int'l. Sem. on Phys. of Mat., Delhi, November 1987.
34. **High T_c**, 6th Int'l. Sem. on Phys. of Mat., Delhi, November 1987.
35. **Spin glasses - Statics**, Ind. Assoc. for Cult. of Sci., Calcutta, December 1987.
36. **Spin glasses - Dynamics**, Ind. Assoc. for Cult. of Sci., Calcutta, December 1987.
37. **High T_c**, Ind. Assoc. for Cult. of Sci., Calcutta, December 1987.
38. **Superconductors**, Calcutta University, December 1987.
39. **Spin glasses - Statics**, I.I.T., Madras, December 1987.
40. **Spin glasses - Dynamics**, I.I.T., Madras, December 1987.

41. **High T_c Superconductors**, I.I.T., Madras, December 1987.

42. **Spin glasses**, I.I.Sc., Bangalore, December 18, 1987.

43. **High T_c**, I.I.Sc., Bangalore, December 17, 1987.

44. **High T_c**, TATA Inst. of Fund. Res., Bombay, December 22, 1987./

45. **Spin glasses**, TATA Inst. of Fund Res., Bombay, December 24, 1987.

46. **High T_c**, I.I.T., Bombay, December 23, 1987.

47. **High T_c Superconductors**, Univ. of Oklahoma, March 1988.

48. **High T_c Superconductors**, Univ. of Maryland, September 1988.

49. **Spin glasses and reentrants**, Dept. of Physics, Peking Univ., September 6, 1989.

50. **HTSC**, Inst. of Computer Physics, Beijing, China, September 1989.

51. **Spin glasses**, Nanjung Univ., September 1989.

52. **HTSC**, Nanjing Univ., September 1989.

53. **Spin Glasses**, Shanghai Univ. of Sci. and Tech., September 1989.

54. **HTSC**, Shanghai Univ. of Sci. and Tech., September 1989.

55. **Dilute Magnets**, Inst. of Mining and Metallurgy, Krakow, Poland, October 6, 1989.

56. **HTSC**, Inst. of Mining and Metallurgy, October 1989.

57. **Microwave Absorption in HTSC**, Inst. of Physics, Warsaw, Poland, November 6, 1989.

58. **High Temperature Superconductivity**, Tata Institute of Fundamental Research, Bombay, India, October 1992.

59. **High Temperature Superconductivity**, Tata Institute of Fundamental Research, Bombay, India, October 1992.

60. **High Temperature Superconductivity**, Tata Institute of Fundamental Research, Bombay, India, October 1992.

61. **Spin Glasses**, Tata Institute of Fundamental Research, Bombay, India, October 1992.

62. **High Temperature Superconductivity**, Tata Institute of Fundamental Research, Bombay, India, November 1992.

63. **High Temperature Superconductivity**, Tata Institute of Fundamental Research, Bombay, India, November 1992.

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67. **Spin Glasses**, Tata Institute of Fundamental Research, Bombay, India, December 1992.

68. **Dc Magnetization**, Center of Advanced Study, University of Panjab, Chandigarh, India, December 1992.

69. **Microwave Absorption in Micron-Size Powders of Superconducting Cuprates**, Center of Advanced Study, University of Panjab, Chandigarh, India, December 1992.

70. **High Temperature Superconductivity**, School of Physics, University of Hyderabad, India, January 1993.

71. **Spin Glasses**, School of Physics, University of Hyderabad, India, January 1993.

72. **What is a Bar Magnet**, School of Physics, University of Hyderabad, India, January 1993.

73. **High Temperature Superconductivity**, School of Physics, University of Hyderabad, India, January 1993.

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78. **High Temperature Superconductivity**, School of Physics, University of Hyderabad, India, March 1993.

79. **What is Bar Magnet**, School of Physics, University of Hyderabad, India, March 1993.

80. **Superconductivity**, Indian Institute of Technology, Kharagpur, April 1993.

81. **Superconductivity**, Indian Institute of Technology, Kharagpur, April 1993.

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83. **Spin Glasses**, Indian Institute of Technology, Kharagpur, April 1993.

84. **Spin Glasses**, Indian Institute of Technology, Kharagpur, April 1993.

85. **High Temperature Superconductors**, Mehta Institute of Physics, Allahabad,

April 1993.

86. **High T_c Materials**, National Physical Laboratory, New Delhi, India, April 1993.

87. **High T_c Materials**, National Science Center, New Delhi, India, April 1993.

88. **Spin Glasses**, National Physical Laboratory, New Delhi, India, May 1993.

89. **Spin Glasses**, National Science Center, New Delhi, India, May 1993.

90. **High T_c Materials**, Indian Inst. of Technology, India, May 1993.

91. **High T_c Materials**, University of Delhi, India, May 1993.

92. **High T_c Materials**, Jawahar Lal Nehru University, India, June 1993.

93. **Superconductivity**, Osmania University, Hyderabad, India, June 1993.

94. **Superconductivity**, University of Poona, Pune, India, June 1993.

95. **High Temperature Superconductivity**, Marathwada University, Aurangabad, India, June 1993.

96. **Superconductivity**, C.N.R.S., Bellevue, France, July 1993.

97. **High Temperature Superconductivity**, Czechoslovakian Academy of Science, Prague, Czech. Republic, July 1993.

98. **Superconductivity**, Academy of Mining and Metallurgy, Krakow, Poland, July 1993.

99. **Superconductivity**, Institute of Physics, Polish Academy of Science, Warsaw, Poland, July 1993.

100. **Spin Glasses**, University of Frankfurt, Frankfurt, Germany, July 1993.

Technical Reports (partial listing)

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