

List of Publications in Refereed Journals:

1. Structural and Magnetic Properties of Multiferroic Bulk TbMnO_3 , M. Staruch (GA), D. Violette, and **M. Jain**, *Materials Chemistry and Physics* (2013). (Accepted)
2. Effects of Holmium Substitution on Multiferroic Properties in $\text{Tb}_{0.67}\text{Ho}_{0.33}\text{MnO}_3$, M. Staruch (GA), G. Lawes, A. Kumarasiri (GA), L. F. Cotica, and **M. Jain**, *Applied Physics Letters*, 102 (2013) 062908.
3. Systematic Study of Magnetotransport Properties and Enhanced Low-field Magnetoresistance in thin films of $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3 + \text{Mg(O)}$, M. Staruch (GA), C. Cantoni, and **M. Jain**, *Applied Physics Letters*, 102 (2013) 062416.
4. Synthesis and Characterization of Iron Substituted Hydroxyapatite via a Simple Ion-Exchange Procedure, E. Kramer, A. Morey-Oppenheim, M. Staruch, S. Suib, **M. Jain**, J. Budnick, and M. Wei, *J. Materials Science*, 48 (2013) 665.
5. Effect of Mn Doping on the Properties of Sol-gel Derived $\text{Pb}_{0.3}\text{Sr}_{0.7}\text{TiO}_3$ Thin Films, M. Staruch, K. Cil, H. Silva, J. Xiong, Q.X. Jia, and **M. Jain**, *Integrated Ferroelectrics*, (2012) (accepted).
6. Surface contributions to the alternating current and direct current magnetic properties of oleic acid coated CoFe_2O_4 nanoparticles, A. McDannald (GA), M. Staruch (GA), and **M. Jain**, submitted to *J. Applied Physics*, 112 (2012) 123916.
7. Low-field Magnetoresistance in $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3:\text{ZnO}$ composite film, M. Staruch, H. Gao, Pu-Xian Gao, and **M. Jain**, *Advanced Functional Materials*, 22 (2012) 3591.
8. Hierarchically-structured free-standing hydrogels with liquid crystalline domains and magnetic nanoparticles as dual physical crosslinkers, Y. Zhou, N. Sharma, P. Deshmukh, R. K. Lakhman, **M. Jain**, and R. Kasi, *J. American Chemical Society*, 134, (2012) 1630.
9. Simple and facile approach to synthesize magnetite nanoparticles and assessment of their effects on blood cells, L. F. Cótica, V. F. Freitas, G. S. Dias, I. A. Santos, S. C. Vendrame, N. M. Khalil, R. M. Mainardes, M. Staruch, and **M. Jain**, *J. Magnetism and Magnetic Materials*, 324, (2012) 559.
10. Structural and magnetic properties of CoFe_2O_4 and $\text{Co}_{0.5}\text{Zn}_{0.5}\text{Fe}_2\text{O}_4$ nanoparticles for the magnetoelectric composite films, M. Staruch, D. Hires, D. Violette, D. Navarathne, G. A. Sotzing, and **M. Jain**, *Integrated Ferroelectrics*, 131, (2011) 102.
11. Enhanced Low-field Magnetoresistance in $\text{La}_{0.67}\text{Sr}_{0.33}\text{MnO}_3:\text{MgO}$ Composite Films by M. Staruch, D. Hires, A. Chen, Z. Bi, H. Wang, and **M. Jain**, *J. Applied Physics*, 110, (2011) 113913.
12. Magnetic study of the Co-MCM-41 catalyst: before and after reaction, A. M. Morey, N. Li, W. A. Hines, D. M. Perry, **M. Jain**, G. L. Haller, and S. L. Suib, *J. Applied Physics*, 110, (2011) 103904.
13. $\text{Pr}_{0.6}\text{Sr}_{0.4}\text{CoO}_{3-\delta}$ electrocatalyst for solid oxide fuel cell cathode introduced via infiltration, S. Lee, N. Miller, M. Staruch, K. Gerdes, **M. Jain**, and A. Manivannan, *Electrochimica Acta*, 56, (2011) 9904.
14. Structure and magnetic properties of three-dimensional $(\text{La,Sr})\text{MnO}_3$ nanofilms on ZnO nanorod arrays, H. Gao, M. Staruch, **M. Jain**, Pu-Xian Gao, P. Shimpi, Y. Guo, W. Cai, and Hui-jan Lin, *Applied Physics Letters*, 98, (2011) 123105.
15. Magnetotransport properties of $\text{Pr}_{0.5}\text{Ca}_{0.5}\text{MnO}_3$ thin films grown by a solution route, M. Staruch, L. Stan, J. H. Lee, H. Wang, J. I. Budnick, and **M. Jain**, *J. Applied Physics*, 110, (2011) 013921.
16. Fabrication of DNA-Magnetite Hybrid Nanofibers for Water Detoxification, D. Navarathne, Y. Ner, **M. Jain**, J. G. Grote, and G. A. Sotzing, *Materials Letters*, 65, (2011) 219.

17. Magnetotransport properties of epitaxial $\text{Pr}_{0.5}\text{Ca}_{0.5}\text{MnO}_3$ films grown by a solution technique, M. Staruch, L. Stan, F. Ronning, J. D. Thompson, Q. X. Jia, J. Yoon, H. Wang, and **M. Jain**, *J. Magnetism and Magnetic Materials*, 322, (2010) 2708.
18. Recycleable and electrically conducting carbon nanotube composite films, G. Zou, **M. Jain**, H. Yang, Y. Zhang, D. Williams, and Q. X. Jia, *Nanoscale*, 2, (2010) 418.
19. Tensile strain effect on the superconductivity in FeSe thin films, Y. Nie, E. Brahimi, J. I. Budnick, W. A. Hines, **M. Jain**, and B. O. Wells, *Applied Physics Letters*, 94, (2009) 242505.
20. Vertical interface effect on the physical properties of self-assembled nanocomposite epitaxial films, H. Yang, H. Wang, Y. Yoon, Y. Q. Wang, **M. Jain**, D. M. Feldmann, P. C. Dowden, J. L. MacManus-Driscoll, and Q. X. Jia, *Advanced Materials*, 21, (2009) 3798.
21. Vertical connection of carbon nanotubes to silicon at room temperature using a chemical route, G. Zou, H. Yang, **M. Jain**, H. Zhou, D. Williams, M. Zhou, T. McCleskey, A. Burrell, Q. X. Jia, *Carbon*, 47, (2009) 933.
22. Composite Carbon Nanotube/Silica Fibers with Improved Mechanical Strengths and Electrical Conductivities, H. Peng, **M. Jain**, D. E. Peterson, Y. Zhu, and Q. X. Jia, *Small*, 4, (2008) 1964.
23. Strong and ductile colossal carbon tubes with walls of rectangular macro-pores, H. Peng, D. Chen, J. Y. Huang, S. B. Chikkannanavar, J. Hänisch, **M. Jain**, D. E. Peterson, S. K. Doorn, Y. Lu, Y. T. Zhu, and Q. X. Jia, *Physical Rev. Lett.*, 101, (2008) 145501.
24. Ultrathin epitaxial superconducting niobium nitride films grown by a chemical solution technique, G. Zou, **M. Jain**, H. Zhou, H. Luo, S. A. Baily, L. Civale, E. Bauer, T. M. McCleskey, A. K. Burrell, and Q. X. Jia, *Chemical Communications*, 10, (2008) 6022.
25. BaTiO₃-related ferroelectric thin films by polymer assisted deposition, **M. Jain**, E. Bauer, Y. Lin, H. Wang, A. K. Burrell, T. M. McCleskey, and Q. X. Jia, *Integrated Ferroelectrics*, 100, (2008) 132. (by invitation)
26. Leakage mechanisms of self-assembled $(\text{BiFeO}_3)_{0.5}:(\text{Sm}_2\text{O}_3)_{0.5}$ nanocomposite films, H. Yang, H. Wang, G.F. Zou, **M. Jain**, N. A. Suvorova, D. M. Feldmann, P. C. Dowden, R. F. DePaula, J. L. MacManus-Driscoll, A. J. Taylor, and Q. X. Jia, *Applied Physics Letters*, 93, (2008) 142904.
27. Rectifying current-voltage characteristics of BiFeO₃/Nb-doped SrTiO₃ heterojunctions, H. Yang, H. M. Luo, H. Wang, I. O. Usov, N. A. Suvorova, **M. Jain**, D. M. Feldmann, P. C. Dowden, R. F. DePaula, and Q. X. Jia, *Applied Physics Letters*, 92, (2008) 102113.
28. Mixed-valence perovskite thin films by polymer assisted deposition, **M. Jain**, E. Bauer, F. Ronning, M. F. Hundley, L. Civale, H. Wang, B. Maiorov, A. K. Burrell, T. M. McCleskey, S. R. Foltyn, R. F. DePaula, and Q. X. Jia, *Special issue of the Journal of the American Ceramic Society*, 91, (2008) 1858. (Invited paper).
29. Vertically-aligned, pearl-like carbon nanotube arrays for fibre spinning, H. Peng, **M. Jain**, Q. Li, D. E. Peterson, Y. Zhu, and Q. X. Jia, *Journal of the American Chemical Society*, 130, (2007) 1130.
30. Self-assembled epitaxial nanocomposite BaTiO₃-NiFe₂O₄ films prepared by polymer-assisted deposition, H. M. Luo, H. Yang, S. A. Baily, O. Ugurlu, **M. Jain**, M. Hawley, T. M. McCleskey, A. K. Burrell, E. Bauer, L. Civale, T. G. Holesinger, and Q. X. Jia, *Journal of the American Chemical Society*, 129, (2007) 14132.
31. High tunability of lead strontium titanate thin films using conductive LaNiO₃ as electrodes, **M. Jain**, N. K. Karan, J. Yoon, H. Wang, I. Usov, A. S. Bhalla, R. S. Katiyar, and Q. X. Jia, *Applied Physics Letters*, 91, (2007) 072908.

32. Optical and structural properties of single-crystal epitaxial *p*-type transparent conductive oxide thin films, H. M. Luo, **M. Jain**, T. M. McCleskey, E. Bauer, A. K. Burrell, and Q. X. Jia, *Advanced Materials*, 19, (2007) 3604.
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35. Effective thickness and dielectric constant of interfacial layers at Pt/Bi_{3.25}Nd_{0.75}Ti₃O₁₂/SrRuO₃ capacitors, H. Yang, N. A. Suvorova, **M. Jain**, B. S. Kang, Y. Li, M. E. Hawley, P. C. Dowden, R. F. DePaula, and Q. X. Jia, *Applied Physics Letters*, 90, (2007) 232909.
36. Structural and ferromagnetic properties of epitaxial SrRuO₃ thin films grown by polymer-assisted deposition, H. M. Luo, **M. Jain**, S. A. Baily, R. F. DePaula, P. C. Dowden, L. Civale, Q. X. Jia, T. M. McCleskey, A. K. Burrell, and E. Bauer, *Journal of Physical Chemistry: B*, 111, (2007) 7497.
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39. Magnetoresistance in polymer-assisted deposited Sr- and Ca- doped lanthanum manganite films, **M. Jain**, Y. Li, M. F. Hundley, M. Hawley, B. Maiorov, I. H. Campbell, L. Civale, and Q. X. Jia, P. Shukla, A. K. Burrell, and T. M. McCleskey, *Applied Physics Letters*, 88, (2006) 232510.
40. Synthesis and characterization of lead strontium titanate thin films by chemical solution technique, **M. Jain**, N. K. Karan, R. S. Katiyar, and A. S. Bhalla, *Integrated Ferroelectrics*, 82, (2006) 55.
41. Local symmetry breaking in Pb_xSr_{1-x}TiO₃ ceramics and composites studied by Raman spectroscopy, **M. Jain**, Y. I. Yuzyuk, R. S. Katiyar, Y. Somiya, and A. S. Bhalla, *Journal of Applied Physics*, 98, (2005) 24116.
42. Comparative studies of ferroelectric thin films for high frequency phase shifter applications, R. S. Katiyar, **M. Jain**, N. K. Karan, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Integrated Ferroelectrics*, 71, (2005) 11.
43. Investigations on sol-gel derived highly (100) oriented Ba_{0.5}Sr_{0.5}TiO₃:MgO composite thin films for phase shifter applications, **M. Jain**, S. B. Majumder, R. S. Katiyar, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Applied Physics A*, A80, (2005) 645.
44. Pb_{0.3}Sr_{0.7}TiO₃ thin film for high frequency phase shifter applications, **M. Jain**, N. K. Karan, R. S. Katiyar, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Applied Physics Letters*, 85, (2004) 275.
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46. Raman studies of Pb_xSr_{1-x}TiO₃ ceramics and composites, **M. Jain**, Y. I. Yuzyuk, R. S. Katiyar, Y. Somiya, and A. S. Bhalla, *Ferroelectrics*, 303, (2004) 159.
47. Raman spectroscopy of bulk and thin layer (Ba,Sr)TiO₃ Ferroelectrics, R. S. Katiyar, **M. Jain**, and Y. I. Yuzyuk, *Ferroelectrics*, 303, (2004) 101.

48. Structural and dielectric properties of heterostructured BST thin films by sol-gel technique, **M. Jain**, S. B. Majumder, R. S. Katiyar, and A. S. Bhalla, *Thin Solid Films*, 447-448, (2004) 537.
49. Tailoring of BST and MgO layers for phase shifter applications, **M. Jain**, S. B. Majumder, R. S. Katiyar, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Integrated Ferroelectrics*, 60 (2004) 59.
50. Dielectric properties and leakage current characteristics of sol-gel derived $(\text{Ba}_{0.5}\text{Sr}_{0.5})\text{TiO}_3:\text{MgTiO}_3$ thin film composites, **M. Jain**, S. B. Majumder, R. S. Katiyar, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Ferroelectrics Letters*, 30, (2003) 99.
51. Phase transition behavior of highly (100) textured sol-gel derived $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{TiO}_3$ thin films, **M. Jain**, S. B. Majumder, R. S. Katiyar, and S. B. Desu, *Applied Physics A*, 77, (2003) 789.
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53. Novel barium strontium titanate $(\text{Ba}_{0.5}\text{Sr}_{0.5})\text{TiO}_3:\text{MgO}$ thin film composites for tunable microwave devices, **M. Jain**, S. B. Majumder, R. S. Katiyar, and A. S. Bhalla, *Materials Letters*, 57, (2003) 4232.
54. Improvement in electrical characteristics of graded manganese doped barium strontium titanate thin films, **M. Jain**, S. B. Majumder, R. S. Katiyar, F. A. Miranda, and F. W. Van Keuls, *Applied Physics Letters*, 82, (2003) 1911.
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58. Evaluation of chemical solution deposited $\text{Ba}_x\text{Sr}_{1-x}\text{TiO}_3$ thin films on LaAlO_3 for tunable microwave devices, F. W. Van Keuls, C. H. Mueller, R. R. Romanofsky, J. D. Warner, F. A. Miranda, S. B. Majumder, **M. Jain**, A. Martinez, R. S. Katiyar, and H. Jiang, *Integrated Ferroelectrics*, 42, (2002) 207.
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60. Investigations on the optical properties of sol-gel derived lanthanum doped lead titanate thin films, S. B. Majumder, **M. Jain**, and R. S. Katiyar, *Thin Solid Films*, 402, (2002) 90.
61. Sol-gel derived grain oriented BST thin films for phase shifter applications, S. B. Majumder, **M. Jain**, A. Martinez, F. W. Van Keuls, F. A. Miranda, and R. S. Katiyar, *Journal of Applied Physics*, 90, (2001) 896.
62. Studies on the structural, microstructural and optical properties of sol-gel derived lead lanthanum titanate thin films, S. Bhaskar, S. B. Majumder, **M. Jain**, and R. S. Katiyar, *Materials Science and Engineering (B)*, 87, (2001) 178.
63. Growth and properties of $\text{Sr}_{1-x}\text{Ba}_x\text{Bi}_2\text{TaNbO}_9$ materials and thin films, M. S. Tomar, R. E. Melgarejo, P. S. Dobal, **M. Jain**, and R. S. Katiyar, *Journal of Materials Science*, 36, (2001) 3919.

List of Publications in Conference Proceedings:

64. Temperature-dependent leakage mechanisms of BiFeO_3 films, H. Yang, **M. Jain**, H. Zhou, H. M. Luo, and Q. X. Jia, *IEEE International Symposium on Applications of Ferroelectrics*, 3, (2008) article number 4693776.

65. Tunable dielectric properties of lead strontium titanate thin films by sol-gel technique, **M. Jain**, N. K. Karan, J. Yoon, H. Wang, R. S. Katiyar, and Q. X. Jia, *IEEE International Symposium on Applications of Ferroelectrics*, 3, (2008) article number 4693842.
66. Sol-gel derived textured barium strontium titanate thin films for microwave dielectric applications, **M. Jain**, S. B. Majumder, R. S. Katiyar, and A. S. Bhalla, *Proceedings of the Electrochemical Society*, P2003-29, (2005) 131.
67. Investigations of $\text{Pb}_x\text{Sr}_{1-x}\text{TiO}_3$ thin films and ceramics for microelectronic applications, **M. Jain**, Y. I. Yuzyuk, R. S. Katiyar, Y. Somiya, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Proceedings of the Materials Research Society Spring Meeting*, 811, (2004) D3.36.1.
68. Structural and electrical investigations of ferroelectric lead strontium titanate thin films and ceramics, **M. Jain**, P. Bhattacharya, Y. I. Yuzyuk, R. S. Katiyar, and A. S. Bhalla, *Proceedings of Materials Research Society Fall meeting*, 784, (2004) C11.15.1
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70. Improved dielectric properties of heterostructured $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{TiO}_3$ thin films for high frequency applications, **M. Jain**, S. B. Majumder, R. S. Katiyar, A. S. Bhalla, D. C. Agrawal, F. W. Van Keuls, F. A. Miranda, R. R. Romanofsky, and C. H. Mueller, *Materials Research Society Symposium Proceedings*, 748, (2003) U17.4.1.
71. Raman spectroscopy of ferroelectric thin films, R. S. Katiyar, A. Dixit, **M. Jain**, A. Savvinov, and P. S. Dobal, *Materials Research Society Symposium Proceedings*, 748, (2003) U8.10.1.
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73. Process induced modification of the high frequency dielectric behavior of (100) Textured $\text{Ba}_x\text{Sr}_{1-x}\text{TiO}_3$ ($x=0.5$ and 0.6) thin films, S. B. Majumder, **M. Jain**, A. Martinez, R. S. Katiyar, E. R. Fachini, F. W. Van Keuls, F. A. Miranda, P. K. Sahoo, and V. N. Kulkarni, *Proceedings of Materials Research Society*, 688, (2002) C7.8.1.
74. Growth, microstructure and micro-Raman studies of RF magnetron sputter deposited $\text{SrBi}_2\text{Ta}_2\text{O}_9$ and $\text{SrBi}_2\text{TaNbO}_9$ films, **M. Jain**, S. Sathiraju, and R. S. Katiyar, *Proceedings of Materials Research Society*, 580, (2000) 345.