

Menka Jain

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Professional Preparation:

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|-----------------|---|
| 04/2005-04/2008 | Director's funded postdoctoral fellow, Superconductivity Technology Center, Materials Physics and Applications Division, Los Alamos National Laboratory, Los Alamos, NM |
| 08/2004-12/2004 | Postdoctoral fellow, Dept. Physics, University of Puerto Rico, San Juan, PR (USA) |
| 2004 | Ph.D., Chemical Physics, University of Puerto Rico, San Juan, PR (USA) |
| 08/1998-05/1999 | Project associate, Dept. Physics, Indian Institute of Technology, Kanpur, India |
| 1998 | M.S., Physics, Shri Sahu Ji Maharaj University, Kanpur, (India) |
| 1996 | B.S., Physics, Mathematics, Shri Sahu Ji Maharaj University, Kanpur, (India) |

Appointments:

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| 08/2023-Present | Full Professor, Institute of Materials Science & Dept. of Physics, UConn; also a Graduate faculty of Materials Science & Engineering, UConn |
| 08/2014-08/2023 | Associate Professor, Institute of Materials Science & Dept. of Physics, UConn; also a Graduate faculty of Materials Science & Engineering, UConn |
| 08/2008-04/2014 | Assistant Professor, Institute of Materials Science & Dept. of Physics, UConn; also a Graduate faculty of Chemical, Materials & Biomolecular Engineering, UConn |

Publications and Presentations:

Articles published in reviewed scientific journals and conference proceedings: **131**

[Menka Jain - Google Scholar](#)

Presentations: 149

Areas of interest:

- Synthesis of various metal-oxide thin films, powders, nanoparticles, and composites using various chemical solution methods
- Magnetoelectric multiferroic single phase materials: effect of stress, pressure on their magnetic and electric properties
- Magnetocaloric and multicaloric properties of thin film oxides
- Synthesis and evaluation of nanostructured and heterostructured magnetoelectric composite thin films: effect of choice and ratio of the constituents, distribution of phases, and processing conditions on the magnetoelectric coupling coefficient.
- Ferromagnetic thin films: colossal magnetoresistance
- Low loss dielectrics for tunable microwave devices, filters
- Oxide materials for magneto-optic devices.

Synergistic Activities:

1. Editorial services:

- **Editor:** *MRS proceedings*, Vol. 1675, 2014.
<http://journals.cambridge.org/action/displayIssue?jid=OPL&volumeId=1675&issueId=-1>
- **Guest Co-Editor:** Special issue on *Nanocomposites*, Journal of Nanotechnology (2013)
<http://www.hindawi.com/journals/jnt/si/261083/cfp/>

- **Editor:** *MRS proceedings*, Vol. 1547, 2013.
<http://journals.cambridge.org/action/displayIssue?jid=OPL&volumeId=1547&iid=8879103>
 - **Guest Co-Editor:** Special Issue on *Nanocomposites*, Journal of Nanotechnology (2012)
<http://www.hindawi.com/journals/jnt/si/271041/cfp/>
 - **Editor:** *MRS proceedings*, Vol. 1449, 2012.
<http://journals.cambridge.org/action/displayIssue?jid=OPL&volumeId=1449&iid=8539610>
 - **Guest Co-Editor:** Special Issue on *Nanocomposites*, Journal of Nanotechnology (2011)
<http://www.hindawi.com/journals/jnt/si/367938/>
 - **Associate Editor:** *International Journal of Micro and Nano Electronics, Circuits and Systems* (04/2011-2014).
<http://www.serialspublications.com/journals1.asp?jid=287&dtype=2&jtype=>
2. **External Committee:**
 - Member, *Edward C. Henry Best Paper Award committee*, American Ceramic Society (2011-2018).
 - Member, *Hoffman Scholarship*, American Ceramic Society (2011-2012).
 - Member, *Nomination Committee*- Electronics Division, American Ceramic Society (January 2014-December 2014)
 3. **External International Advisory Board:** Symposium CE, 13th International Conference on Modern Materials and Technologies (Tuscany, Italy, June 8 to 20, 2014). http://www.cimtec-congress.org/2014/advisory_boards_congress.asp
 4. **Reviewer of Journals:** Advanced Materials, Advanced Functional Materials, Applied Physics Letters, Journal of Applied Physics, Journal of Magnetism and Magnetic Materials, Advanced in Condensed Matter Physics, Journal of Solid State Chemistry, Nanoletters, Materials Chemistry and Physics, Nuclear Inst. and Methods in Physics Research A, Physica Status Solidi (a), ACS Applied Materials & Interfaces, Chemistry of Materials, Journal of Materials Science, Thin Solid Films, Electrochemical and Solid-State Letters, Materials Today Magazine, Journal of American Ceramic Society, CrystEngComm, ChemPhysChem, International Journal of Applied Ceramic Technology, Transactions on Ultrasonics Ferroelectrics & Frequency Control, Journal of Alloys and Compounds, Acta Materialia, Materials Science and Engineering B, IEEE Photonics Technology Letters, Solid State Communications.
 5. **Reviewer of Grant/Proposals (Ad-Hoc):** NSF-Division of Materials Research, Ceramics proposal (Dec 2018-Jan 2019); NSF onsite reviewer for - Materials Research Science & Engineering Center (MRSEC) in Penn State (April 2018); NSF-virtual review panel for Condensed Matter Physics program -Division of Materials Research, (Jan 2018); NSF- Division of Materials Research, Ceramics career proposal (October-Nov 2017); NSF-Division of Materials Research, Ceramics proposal (March-May 2017); DOE-The Office of Basic Energy Sciences proposal (July 2015-August 2015); NSF-Division of Materials Research, Ceramics-RUI proposal (January-March 2015); NSF- Division of Materials Research, Ceramics proposal (December 2014-January 2015); NSF Ad-hoc review– Materials Research Science & Engineering Centers (MRSEC)-(January-March 2014); NSF-Division of Materials Research, Ceramics proposal (December 2013-January 2014); NSF-Division of Materials Research-Ceramics proposal (January-February 2014); NSF-Division of Materials Research GOALI proposal (December 2013-January 2014); National Science Foundation (NSF) SBIR-Phase I proposals (July – August 2013); NSF-Division of Materials Research career proposal (July-September 2013); NSF Panel – Materials Research Science & Engineering Centers (MRSEC)-(September 2013); American Chemical Society-Petroleum Research Fund (06/08/2012);
 6. **Reviewer of user proposals for facilities at National DOE labs (Ad-Hoc):** Ad-hoc review- for 3 *Center for Integrated Nanotechnologies* (CINT)-Los Alamos/Sandia National Lab user proposals (April-2015); Ad-hoc reviews for 5 CINT-Los Alamos/Sandia National Lab user proposals (September-October 2014); Ad-hoc review- for 6 CINT-Los Alamos/Sandia National Lab user

proposals (April-2013); Member of user proposal review committee for the *Center for Integrated Nanotechnologies* (CINT) at the Los Alamos National Lab (NM), reviewed 6 proposals (June 2012).

7. **Beam/instrument times granted at National and International user facilities:**
 - Magneto-Optical Spectroscopy of Multiferroic Rare-Earth Chromite Thin Films, approved as a CINT, Los Alamos National Lab (NM) user project (April, 2018 - March, 2019).
 - Terahertz Magneto-Optical Spectroscopy Studies of Multiferroic Rare-Earth Chromite Epitaxial Films) has been approved as a CINT Los Alamos National Lab (NM) user project (August 12-2016 - December 31, 2017).
 - 3 day(s) of beam time (June 25-June 28, 2016) on instrument HB-2A Powder at the High Flux Isotope Reactor (HFIR) facility, Oak Ridge National Lab (TN).
 - Proposal (*RA2015A0020: Structural Analysis of Rare-Earth Chromite Films*) was accepted as a rapid action CINT Los Alamos National Lab (NM) user project (August 7-November 30, 2015).
8. **Sessions Chair:** Materials Research Society Spring meeting, April 6-10th, 2015, San Francisco, CA; 7th International Conference on Materials for Advanced Technologies, Singapore, June 30th-July 5th, 2013; Materials Research Society Spring meeting, April 1-5th, 2013, San Francisco, CA; 37th International Conference on Advanced Ceramics and Composites meeting, Jan 27th-Feb 1st, 2013, Daytona Beach, FL; Materials Research Society Spring meeting, April 9-13th, 2012, San Francisco, CA; International Symposium on Multifunctionality of Ferroics and Multiferroics, October 15th-16th, 2010, San Antonio, TX; Materials Science and Technology, October 5-9th, 2008, Pittsburgh, PA; Materials Science and Technology, September 16-21st, 2007, Detroit, MI; Materials Science and Technology, October 15-19th, 2006, Cincinnati, OH.
9. **International workshop Organizer:**
 - *28th International Workshop on Oxide Electronics (iWOE28)*, Portland, Maine, Oct 2022 (with Charles Ahn, Divine Kumah, and Ryan Comes). <https://iwoe28.events.yale.edu/>
 - *Quantum Matter: Dynamic and Sensors, Storrs*, CT, December 2022 (with A. Balatsky, Lea Santos, James A. Sauls, Jason T. Haraldsen). <https://materialstheory.domains.unf.edu/qmds-conference/>
10. **Workshop Organizer:**
 - Mini *Quantum Materials Workshop* at UConn, Storrs, CT, November 23rd 2024. (~12 speakers from UConn).
11. **Symposium Organizer:**
 - **Symposium 4:** *Ferroelectrics and Multiferroics for Energy Generation, Conversion and Storage*, Materials Challenges in Alternative & Renewable Energy, Vancouver, BC, Canada, August 20-23, 2018 (with A.S. Bhalla and R.S. Katiyar).
 - **Symposium:** *Controlled Synthesis, Processing, and Applications of Structural and Functional Nanomaterials*, Materials Science and Technology, Salt Lake City, UT, USA, October 23rd– 27th, 2016 (with B. P. S. Chauhan, E. Gorzkowski, H. Kamiya, K. Lu, S. Mathur, E. Olevsky, G. Singh, H. Zhang).
 - **Symposium 3:** *Ferroelectrics and Multiferroics for Energy Applications*, Materials Challenges in Alternative & Renewable Energy, Clearwater, FL, April 17th - 21st, 2016 (with P.M. Vilarinho and M. Algueró).
 - **Symposium S7:** *10th International Symposium on Nanostructured Materials: Functional Nanomaterials and Thin Films for Sustainable Energy Harvesting, Environmental, and Health Applications*, 40th International Conference and Expo on Advanced Ceramics and Composites, Daytona Beach, FL, USA, January 24th-29th, 2016 (with M. van Bael, Y.B. Hahn, E. Ionescu, H. Kamiya, R.S. Liu, S. Mathur, S.S. Ray, S. Song, G. Westin, J.J. Wu).
 - **Symposium RR:** *Solution Synthesis of Inorganic Functional Materials*, Materials Research Society Spring meeting, San Francisco, CA, USA, April 21st-25th, 2014 (with Q.X. Jia, H. Kozuka, X. Obradors).

- **Symposium: Solar Fuels, Materials Challenges in Alternative & Renewable Energy**, February 17th-20th, 2014 (with V. Lüthen, S. Mathur, J.R. Morante, R. Ravindra, X.J. Tong, L. Vayssieres). **Symposium M: Solution Synthesis of Inorganic Functional Materials-Films, Nanoparticles, and Nanocomposites**, Materials Research Society Spring meeting, San Francisco, CA, USA, April 1st-5th, 2013 (with Q.X. Jia, H. Kozuka, T. Puig).
- **Symposium BB: Solution Synthesis of Inorganic Films and Nanostructured Materials**, Materials Research Society Spring meeting, San Francisco, CA, USA, April 9th-13th, 2012 (with Q.X. Jia, X. Obradors, R.W. Schwartz).

12. Departmental services:

- Member, *Undergrad Affairs committee* (2024-present)
- Member, *Grad Admissions committee* (2024-present)
- Member, *Grad Affairs committee* (2020-2024)
- Member, *Faculty search committee (Condensed Matter theorist)* (Dec 2021-April 2022)
- Member, *Advisory committee* (2020-2023)
- Member, *Promotion, Tenure, and Reappointment Committee* (April 2020-2023)
- Member, *Diversity and Multiculturalism committee* (2014-present)
- Member, *Three APiR Search Committee* (two for Storrs and one for Stamford campus), Department of Physics, UConn, (January-May 2017)
- Members, *External Relations Committee* (Jan 2017-Dec 2018)
- Chair, *External Relations Committee* (Jan 2017-May 2017)
- Member, *Promotion, Tenure, and Reappointment Committee* (April 2015-2018)
- Member, *Condensed Matter Physics Faculty Search Committee*, Institute of Materials Science, UConn, (2010-2011)
- Member, *Faculty Search Committee* (position related to High Field applications), Institute of Materials Science, UConn, (2012-2013)
- Member, *Outreach Committee*, May, 2011-2014
- Member, *Advisory Committee*, August, 2011-2018
- Member, *Nanoscale Science Committee*, 2009-2011
- Chair, *Condensed Matter Physics seminar series* (Aug, 2008- Aug, 2012)

13. College/University services:

- UConn-OVPR Research Excellence Proposal chair (2023-present)
- Reviewer of SURF proposals, UConn February-March 2025.
- Reviewer of SURF proposals, UConn February-March 2024.
- Member, *Internal Competitions Advisory Board*, Office of Vice Provost for Research, UConn (Jan 2023-Dec 2025).
- Reviewer (in committee) of the *Mentoring Awards for CLAS*, April 2022.
- Reviewer of REP proposals submitted internally to OVPR office, April 2021.
- Reviewer of IMS equipments proposals submitted internally to IMS office, March-April 2021.
- Reviewer/sub-committee member to review 16 undergraduate student's SURF Proposals (internal) submitted to the Office of undergraduate Research office for the summer of 2019.
- Reviewer, 4 Proposals (internal screening) submitted to the Office of the Vice President for Research office for the 2018 Johnson & Johnson WiSTEM2D program, 2018.
- Member, CLAS Diversity Equity Inclusion Council Group, Feb 2018-May 2019
- Member, CLAS Public Art Subcommittee, Nov 2017-May 2019.
- Member, *Institute of Materials Science Director Search Committee*, UConn, (2013)

14. Honors and Awards:

- Given special recognition (among other women in ferroelectrics) in an event "Women at the Frontiers of Ferroelectrics" held at the IMF 2017 meeting, San Antonio, TX, September 2017.
- Visiting Research Scholar, Los Alamos National Lab, July-August, 2015

- Visiting Research Scholar, University of Texas at San Antonio, June, 2009
- Recipient of Award of Excellence from the group leader of the Superconductivity Technology Center of MPA Division in Los Alamos National Laboratory, April, 2008.
- Recipient of Award of Excellence from the group leader of the Superconductivity Technology Center of MPA Division in Los Alamos National Laboratory, August, 2006.
- Received Director's Funded Postdoctoral Fellowship in Los Alamos National Laboratory in April 2005.
- Recipient of the National Science Foundation (NSF)-EPSCoR graduate fellowship, 2003-2004.
- Recipient of NSF Fellowship, 2001-2003.
- Awarded second prize, "The Ceramographic competition of The American Ceramic Society", at the annual meeting of ACerS, St. Louis, April, 2002.
- One micrograph of the research appeared on the cover page of a journal (J. of the American Ceramic Society, 85 (7) 2002).
- Honor student award for being among the top five percent of graduate students of the University of Puerto Rico, August, 2001.
- First prize_winner of the poster presentation competition at the NASA/DoD sponsored Ferroelectric Workshop, Puerto Rico, June, 2001.
- Recipient of the "Smt. Shyam Lata Nigam Memorial Scholarship award" for securing the highest marks in all the colleges in master degree, Christ Church College, Kanpur, India, 1997.

15. **Graduate and Postdoctoral Advisors:**

Ph.D. and Postdoctoral Dr. R.S. Katiyar, University of Puerto Rico, San Juan, PR
 Postdoctoral Dr. Q.X. Jia, Los Alamos National Laboratory, Los Alamos, NM

16. **Students Advising:**

- **Current Ph.D. student:** Jacob Pfund (Advisor), Zachary Ritchey (Advisor), Devika Thandayamparambil (Advisor), Raman K. Mishra (Advisor), Joshua Bedard (Associate Advisor), Jacob Franklin (Associate Advisor), Serzat Safaltin (Associate Advisor), Devesh Kale (Associate Advisor), Ovijit Das (Advisor),
- **Past PhD students:** Shuai Jiang (2024, Associate Advisor), Karla M. Del Cid-Ledezma (2023, Associate Advisor), Ashok Gurung (2024, Co-Advisor), Saroj Dahal (2024, Associate Advisor), Bochao Xu (2024, Associate Advisor), Krishna Joshi (2024, Associate Advisor), Mr. Donal Sheets (2022, Associate Advisor), Mr. Sunil Thapa (2022, Associate Advisor), Mr. Kevin Co (2022, Associate Advisor), Mr. Jianhang Shi (2021, Advisor), Mr. Lukasz Kuna (2020, Advisory Committee), Mr. Shiqi Yin (2018, Advisor), Mr. Xiang Zhang (2018, Associate Advisor), Hui-Jan Lin (2016, Advisory Committee), Mr. Austin McDannald (2016, Advisor), Mr. Hongyu Hu (2016, Associate Advisor), Mr. Michael Zilm (2016, Associate Advisor), Ms. Shoroog Alraddadi (2016, Associate Advisor), Ms. Margo Staruch (2013, Advisor), Mr. Fahad Alamar (2013, Associate Advisor), Ms. Erica Kramer (2013, Associate Advisor), Mr. P. A. D. S. Navarathne (2011, Associate Advisor), Mr. Y. Ner (2010, Associate Advisor), Ms. Claire Weiss (2010, Associate Advisor),
- **Past MS students:** Ovijit Das (2025, CoAdvisor), Zachary Ritchey (2024, Advisor), Joshua Bedard (2024, Associate Advisor), Jacob Pfund (2023, Advisor), Francis Almonte, (MSE, 2020, Associate Advisor), Ms. Margo Staruch (2009, Advisor), Mr. Hari Sharma (2014, Advisor), Mr. Shiqi Yin (2014, Advisor)

Article in Magazine/Highlighted work:

1. <https://today.uconn.edu/2021/12/uconnns-project-daedalus-focuses-on-aerospace-electro-optics-in-new-4-7-million-contract/>
2. 'Material World', M. Jain, *International Innovation*, July 2013, (Research Media, UK, pp 102-104) ISSN 2051-8528. <http://www.international-innovation-northamerica.com/magazines/NA14/index.html>
3. **Highlighted work from my group:** <http://advanceseng.com/chemical-engineering/low-field-magnetoresistance-in-la0-67sr0-33mno3zno-composite-film/>

List of Publications in Refereed Journals:

1. A Transmission Electron Microscopy Study of Orientation Relationships and Interfacial Reaction Products in $\text{GdFe}_{0.5}\text{Cr}_{0.5}\text{O}_3$ Films Grown on (001) SrTiO_3 Substrates by Solution Synthesis, S. Rommel, J. Pfund, **M. Jain** and M. Aindow, *Thin Solid Films*, (2025) (accepted). <https://doi.org/10.1016/j.tsf.2025.140789>
2. Noncollinear antiferromagnetism in a quantum paraelectric EuTiO_3 thin film, J. Bedard, J. Franklin, Z. Ritchey, M. D. Morales-Acosta, M. Jain, and I. Sochnikov, *Phys. Rev. B* (2025), <https://doi.org/10.1103/63yc-vsg4>
3. Shaping Magnetic Liquid Metals Into 3D Leakage-Free, Shape-Programmable Structures and Electronics, Y. Lu, Z. Wang, V. Abdulla, J. Pfund, S.H. Lu, X. Zhang, G. Fennell, Y. Zhang, **M. Jain**, Yi Zhang, X. Wang, *Advanced Electronic Materials* (2025) 2500166. <https://doi.org/10.1002/aelm.202500166>
4. Magnetic Anisotropy and Frustration in FeBO_3 , J. Pfund, S. Jiang, W. Zhang, P. Shiv Halasyamani, M. A. Susner, V. Ortalan, M. Seehra, and **M. Jain**, *Phys. Rev. B*, 112 (2025) 014436. <https://doi.org/10.1103/p15y-jtgs>
5. Scanning SQUID Characterization of Strained Multiferroic Iron Substituted Gadolinium Orthochromite Thin Film, J. Bedard, J. Pfund, **M. Jain**, and I. Sochnikov, *AIP Advances*, 15 (2025) 035313. <https://doi.org/10.1063/9.0000888>
6. Magnetoelectric Effects in Bilayers of PZT and Co and Ti Substituted M-Type Hexagonal Ferrites, S. Saha, S. Acharya, S. Menon, R. Bidthanapally, M.R. Page, **M. Jain**, and G. Srinivasan, *J. Compos. Sci.*, 9 (2025) 336. <https://doi.org/10.3390/jcs9070336>
7. Additive manufacturing for electrocaloric terpolymer thin films, Wei Ruan, Zachary Ritchey, Fei Wang, Bryan D. Huey, Menka Jain, Jeffrey R. McCutcheon, and Kelly A. Burke, *Cell Reports Physical Science*, 6 (2025) 102503. <https://doi.org/10.1016/j.xcrp.2025.102503>
8. Modular Cryogenic Piezoelectric Scanner for Scanning SQUID Microscopy, J. Bedard, J. Franklin, Z. Ritchey, M. Roshdy, O.R. Bilal, **M. Jain**, and I. Sochnikov, *AIP Advances*, 15 (2025) 035112. <https://doi.org/10.1063/9.0000890>
9. Evidence for a Giant Magneto-Electric Coupling in Bulk Composites with Coaxial Fibers of Nickel-Zinc Ferrite and PZT, B. Ge, J. Zhang, S. Saha, S. Acharya, C. Kshirsagar, S. Menon, **M. Jain**, M. R. Page, and G. Srinivasan, *J. Compos. Sci.*, 8 (2024) 309. <https://doi.org/10.3390/jcs8080309>
10. Mott insulating low thermal expansion perovskite TiF_3 , D. Sheets, K. Lyszak, **M. Jain**, G. W. Fernando, I. Sochnikov, J. Franklin, J. N. Hancock, and R. M. Geilhufe, *Phys. Rev. B*, 108 (2023) 235140. <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.108.235140>

11. A Novel Spinel Ferrite-Hexagonal Ferrite Composite for Enhanced Magneto-Electric Coupling in a Bilayer with PZT, S. Saha, S. Acharya, M. Popov, T. Sauyet, J. Pfund, R. Bidthanapally, **M. Jain**, M. R. Page, and G. Srinivasan, *Sensors*, 23 (2023) 9815. <https://www.mdpi.com/1424-8220/23/24/9815>
12. Electric Field Tuning of a Nickel Zinc Ferrite Resonator by Non-Linear Magnetoelectric Effects, M. Popov, A. Machi, J. Inman, R. Bidthanapally, S. Saha, H. Qu, **M. Jain**, M. R. Page, and G. Srinivasan, *Scientific Reports*, 13 (2023) 18346. <https://www.nature.com/articles/s41598-023-45530-4>
13. Magnetocaloric properties of TbCrO₃ and TmCrO₃ and their comparison with those of the other RCrO₃ systems (R = Gd, Dy, Ho, and Er), J. Shi, M. Seehra, J. Pfund, S. Yin, and **M. Jain**, *Journal of applied physics*, 134 (2023) 103903. [Magnetocaloric properties of TbCrO₃ and TmCrO₃ and their comparison with those of the other RCrO₃ systems \(R = Gd, Dy, Ho, and Er\) | Journal of Applied Physics | AIP Publishing](#)
14. Observation of c-axis magnetization at low temperatures in weak ferromagnet FeBO₃ reveals the onset of a Morin-type transition, J. Franklin, J. Pfund, J. Bedard, **M. Jain**, and I. Sochnikov, *Physical Review B*, 107 (2023) 214433. [Phys. Rev. B 107, 214433 \(2023\) - Observation of \\$c\\$-axis magnetization at low temperatures in the weak ferromagnet \\$\mathrm{Fe}\{\mathrm{BO}\}_3\\$ reveals a spin-reorientation transition \(aps.org\)](#)
15. Highly piezoelectric, biodegradable and flexible amino acid nanofibers for medical applications, M. T. Chorsi, Thinh T. Le, Feng Lin, T. Vinikoor, R. Das, J. F. Stevens, C. Mundrane, J. Park, K. T. M. Tran, Y. Liu, J. Pfund, R. Thompson, W. He, **M. Jain**, M. D. Morales-Acosta, O. R. Bilal, K. Kazerounian, H. Ilies, Thanh D. Nguyen, *Science Advances*, 9 (2023) eadg6075. [Highly piezoelectric, biodegradable, and flexible amino acid nanofibers for medical applications | Science Advances](#)
16. Structural and electronic properties of rare-earth chromites: A computational and experimental study, J. Shi, Gayanath W. Fernando, Y. Dang, S.L. Suib, and **M. Jain**, *Physical Review B*, 106 (2022) 165117. <https://journals.aps.org/prb/abstract/10.1103/PhysRevB.106.165117>
17. Microwave Hydrothermal Synthesis of Mesoporous First-row Transition-Metal Ferrites, L. Achola, S. Shubhashish, Z. Tobin, Y. Su, L. Posada, Y. Dang, J. Shi, A. G. Meguerdichian, **M. Jain**, and S. L. Suib, *Chemistry of Materials*, 34 (2022) 7692. <https://pubs.acs.org/doi/full/10.1021/acs.chemmater.2c00684>
18. Comparison of the dielectric and magnetocaloric properties of bulk and film of GdFe_{0.5}Cr_{0.5}O₃, J. Shi, M.S. Seehra, Y. Dang, S. L. Suib, and **M. Jain**, *J. of Applied Physics*, 129 (2021) 243904. <https://aip.scitation.org/doi/10.1063/5.0048828>
19. Structure-property correlations and scaling in the magnetic and magnetocaloric properties of GdCrO₃ particles, J. Shi, T. Sauyet, Y. Dang, S. L. Suib, M. S. Seehra, and **M. Jain**, *J. Phys.: Condens. Matter*, 33 (2021) 205801. <https://iopscience.iop.org/article/10.1088/1361-648X/abf19a/pdf>
20. Spin dynamics and relaxation in 7.6 nm thin film of La_{0.7}Sr_{0.3}MnO₃/SrTiO₃: ac magnetic susceptibility and magnetic viscosity investigations, N. Mottaghi, M. S. Seehra, J. Shi, **M. Jain**, and M. B. Holcomb, *Journal of Applied Physics*, 128 (2020) 073903. <https://doi.org/10.1063/5.0017765>
21. Lattice Dynamics of Barium Titanate: Single Crystal, Ceramic and Polycrystalline Film, O. A. Maslova, Y. I. Yuzyuk, **M. Jain**, and S. A. Barannikova, *Physica Status Solidi B*, 257(8) (2020) 1900762. <https://doi.org/10.1002/pssb.201900762>

22. Crystalline Mesoporous Perovskite-Type Oxides: Porosity-Controlled Electromagnetic Response, L. Jin, X. Su, J. Shi, K.C. Shih, D. Cintron, T. Cai, Mu-Ping Nieh, Ou Chen, S. L. Suib, **M Jain**, and J. He, *Advanced Functional Materials*, 30 (2020) 1909491. [10.1002/adfm.201909491](https://doi.org/10.1002/adfm.201909491) <https://doi.org/10.1002/adfm.201909491>
23. Antiferromagnetic and dielectric behavior in polycrystalline $\text{GdFe}_{0.5}\text{Cr}_{0.5}\text{O}_3$ thin film, J. Shi, M. Johnson, M. Zhang, Pu-Xian Gao, and **M. Jain**, *Applied Physics Letters Materials*, 8 (2020) 031106. <https://doi.org/10.1063/1.5142177>
24. Enhanced Visible-Light-Assisted Peroxymonosulfate Activation on Cobalt-Doped Mesoporous Iron oxide for Orange II Degradation, L. A. Achola, A. Ghebrehiwet, J. Macharia, P. Kerns, J. He, J. Fee, C. Tinson, J. Shi, S. March, **M. Jain**, and S.L. Suib, *Applied Catalysis B: Environmental*, 263 (2020) 118332. <https://doi.org/10.1016/j.apcatb.2019.118332>
25. Graphene and Poly(3,4-ethylene dioxythiophene): Poly(4-styrene sulfonate) on Nonwoven Fabric as a Room Temperature Metal and Its Application as Dry Electrodes for Electrocardiography, S. Sinha, F. A. Alamer, S. Woltornist, Y. Noh, F. Chen, A. McDannald, C. Allen, R. Daniels, A. Deshmukh, **M. Jain**, K. Chon, D. Adamson, G. Sotzing, *ACS Applied Materials & Interfaces*, 11 (2019) 32339. <https://doi.org/10.1021/acsami.9b05379>
26. Magnetic and Tunable Dielectric Properties of DyCrO_3 Thin Films, A. McDannald, S. Vijayan, J. Shi, A. Chen, Q. X. Jia, M. Aindow, and **M. Jain**, *Journal of Materials Science*, 54 (2019) 8984. DOI:10.1007/s10853-019-03524-6
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118. 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.
119. 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.
120. 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.

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121. Magnetoelectric thin films by solution methods, Proceedings of SPIE- INTERNATIONAL WORKSHOP ON THIN FILMS FOR ELECTRONICS, ELECTRO-OPTICS, ENERGY AND SENSORS, Volume 12477, page number 124770Z, Published 31st January 2023. <https://doi.org/10.1117/12.2647655>
122. 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.
123. 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.
124. 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.
125. 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.
126. 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
127. Structural and vibrational properties of ferroelectric $\text{Pb}_{1-x}\text{Sr}_x\text{TiO}_3$ thin films and powders, **M. Jain**, A. Savvinov, P. S. Dobal, S. B. Majumder, R. S. Katiyar, and A. S. Bhalla, *Materials Research Society Symposium Proceedings*, 748, (2003) U3.17.1.

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129. 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.
130. Investigations on sol-gel derived $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Ti}_{1-x}\text{Mn}_x\text{O}_3$ ($x \sim 0-5$ at%) thin films for phase shifter applications, R. S. Katiyar, **M. Jain**, S. B. Majumder, R. R. Romanofsky, F. W. Van Keuls, and F. A. Miranda, *Proceedings of Materials Research Society*, 720, (2002) H2.1.1.
131. 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.
132. 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.

List of Presentations:

1. Scanning SQUID Imaging of Noncollinear Antiferromagnetic Domains in EuTiO_3 film, J. Bedard, J. Franklin, Z. Ritchey, M.D. Morales-Acosta, **M. Jain**, and I. Sochnikov, *American Physical Society March Meeting*, Anaheim, CA, March 16-21st, 2025.
2. Synthesis and Characterizations of functional/quantum materials, **M. Jain**, 2024 *Quantum Materials Mini workshop*, Storrs, 23rd October 2024. (Oral).
3. Magnetic phase transition and caloric behavior in EuTiO_3 , **M. Jain**, 2025 *Materials Science for Quantum Information Science (QIS) Review (AFOSR)*, Washington DC, 3rd February 2025. (Invited).
4. Quantum Phase transitions and caloric effect in pure and doped EuTiO_3 , **M. Jain**, 2025 *Materials Science for Quantum Information Science (QIS) Review (AFOSR)*, Washington DC, 3rd February 2025. (Poster).
5. Hard-Axis Magnetization in Iron Borate Single Crystal, J. Pfund, S. Jiang, W. Zhang, P. S. Halasyamani, M. A. Susner, V. Ortalan, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, Dec 1-6th, 2024. (Oral Presentation, Session EN04.09)
6. Effects of Sm doping on the giant magnetocaloric effect in EuTiO_3 , Z. Ritchey, J. Pfund, P. Dubey, Prabhakar Singh, and **Menka Jain**, *Materials Research Society Fall Meeting*, Boston, MA, Dec 1-6th, 2024. (poster)
7. Low-Field Magnetoresistance in Nanocomposites of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ and Metal Oxides, N. Thiel-Hudson, T. Sauyet, Z. Ritchey, J. Pfund, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, Dec 1-6th, 2024. (Poster Presentation, Session NM05.08.18)
8. Dielectric properties in ferroelectric and multiferroic metal-oxides, **M. Jain**, 2024 *US-Japan Seminar on Dielectric and Piezoelectric Ceramics*, Kofu, Japan, Nov 10-13th, 2024. (Invited)
9. Tuning of magnetic and multiferroic behavior in metal-oxides and nanocomposite films, M. Jain, *Air Force Research Laboratory*, Fairborn, OH, 12th April 2024. (Invited)
10. Functional Materials and Applications, **M. Jain**, *Graduate seminar in Physics Dept UConn*, March

- 22, 2024. (Oral)
11. Tuning of multiferroic Behavior in metal-Oxide Films and Nanocomposites, **M. Jain**, *ISAF-ISIF-PFM 2023*, Cleveland, OH, July 23rd-27th, 2023. (Invited)
 12. Comparison of the Antiferromagnetic and Magnetocaloric Properties of Rare-Earth Chromites, J. Pfund, J. Shi, M. S. Seehra, G. Fernando, and **M. Jain**, *Materials Research Society Spring Meeting*, San Francisco, CA, April 11th, 2023. (Poster)
 13. In-Plane and Out-of-Plane Magnetic Behavior in Iron Borate Single Crystal, J. Pfund, J. Franklin, J. Bedard, I. Sochnikov, and **M. Jain**, *Materials Research Society Spring Meeting*, San Francisco, CA, April 13th, 2023. (Poster)
 14. Antiferromagnetic and Relaxor-type Ferroelectric Behavior in Iron Doped GdCrO₃, J. Shi, M. S. Seehra, J. Pfund, and **M. Jain**, *American Physical Society March Meeting*, Las Vegas, NV, March 9, 2023. (Poster)
 15. In-Plane and Out-of-Plane Magnetic behavior in Iron Borate Single Crystal, J. Pfund, J. Franklin, J. Bedard, I. Sochnikov, and **M. Jain**, *American Physical Society March Meeting*, Las Vegas, NV, March 10th, 2023. (Oral)
 16. Multifunctional materials for devices, **M. Jain**, *Workshop on Quantum Matter: Dynamics and Sensors*, Storrs, CT, December 19th-22nd, 2022. (Oral)
 17. Magnetoelectric multiferroic properties in single-phase and bi-phasic thin films, **M. Jain**, *International workshop on Thin Films for Electronics, Electro-Optics, Energy and Sensors (TFE3S2022)*, Boston, MA, USA, August 10th-12th, 2022. (Invited)
 18. Anomalous Structural Phase Transition in Ferromagnetic SrCoO_{2.875}, A. Jayakody, W. Hines, S. Nayak, S. Lapidus, M. Abeykoon, J. Budnick, J. Shi, Menka Jain, B.O. Wells, *American Physical Society March Meeting*, Chicago, IL, March 14, 2022. (Oral)
 19. Functional and multifunctional materials. **M. Jain**, *Materials Science and Engineering Department, Visitation Day*, March 4th 2022. (Oral)
 20. Antiferromagnetic and relaxor-type ferroelectric behavior in iron doped GdCrO₃. Shi, M. S. Seehra, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, November 28th – December 3rd, 2021. (Oral)
 21. Functional and multifunctional materials for microelectronics. **M. Jain**, *Department of Physics*, October 19th 2021. (Oral)
 22. Antiferromagnetism and magnetocaloric effects in GdCrO₃ based compounds, J. Shi, M. S. Seehra, and **M. Jain**, *The European Conference: Physics of Magnetism 2021*, Virtual Conference (Poland), June 28th - July 2nd 2021. (Oral)
 23. Rare-earth chromites and rare-earth manganites: structural-property relations, **M. Jain**, *63rd Electronic Materials Conference*, Virtual Conference, 23rd-25th June, 2021. (Oral)
 24. Single-phase and biphasic magnetoelectric multiferroic materials by solution technique, J. Shi, A. McDannald, B. D. Huey, and **M. Jain**, *IEEE ISIF ISAF 2021*, Virtual Conference, May 16th-21st, 2021. (Oral)
 25. Effect of Ionic Radii of the Rare-earth Ion on the Magnetocaloric Effect of Rare-earth Chromites, J. Shi, M. Seehra, and **M. Jain**, *The 65th Annual Conference on Magnetism and Magnetic Materials (MMM 2020)*, Virtual Conference, November 2nd – 6th, 2020. (Oral)
 26. Magnetic and Dielectric Properties of Potential Multiferroic GdCrO₃, J. Shi, Y. Dang, S. L. Suib, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, December 1st-6th, 2019. (Poster).

27. Interests in Multiferroics and other functional materials, **M. Jain**, *Graduate Student Seminar*, University of Connecticut, Storrs, CT, April 12th, 2019. (Oral)
28. Magnetocaloric Properties in Rare-Earth Chromites, J. Shi, S. Yin, and **M. Jain**, *5th Annual UConn School of Engineering Poster Competition*, Storrs, CT, March 15th, 2019. (Poster)
29. Caloric effects in ferroic perovskite oxide thin films, S. Martin, J. Shi, and **M. Jain**, REU Poster Session, *University of Connecticut*, Storrs, CT, August 2nd, 2018. (Poster)
30. Single Phase Multiferroic—Fe Substituted Gd-Chromite [GdFe_{0.5}Cr_{0.5}O₃] Thin Films, J Shi and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, November 26th – December 1st 2017. (Oral)
31. Enhancement in magnetocaloric effect of pure ErCrO₃ with Gd doping, J. Shi, S. Yin, and **M. Jain**, *62nd Annual Magnetism and Magnetic Materials Conference*, Pittsburgh, PA, November 6th-10th, 2017. (Oral)
32. Magnetic and magneto-caloric properties of HoCrO₃ tuned by selective rare-earth doping, Shiqi Yin, M. S. Seehra, C. Guild, S. L. Suib, N. Poudel, B. Lorenz, **M. Jain**, *UConn Physics Department Poster Session*, Storrs, CT, 21st April, 2017. (Poster)
33. Effect of ionic size of the rare-earth dopant on the structural and magnetic properties of HoCrO₃. Shiqi Yin, T. Sauyet, M. Seehra, and **M. Jain**, *APS MMM Conference*, New Orleans, 31st Oct-4th Nov, 2016. (Poster)
34. Multiferroic properties of holmium chromite and gadolinium chromite, S. Yin and **M. Jain**, *Materials Challenges in Alternative & Renewable Energy*, Clearwater, FL, April 17-21st 2016. (Oral)
35. Nanocomposite Thin Films to Achieve High Magnetoelectric Coupling, **M. Jain**, *Materials Challenges in Alternative & Renewable Energy*, Clearwater, FL, April 17-21st 2016. (Oral)
36. The size and pressure effect on the magnetic and magnetocaloric property in HoCrO₃, S. Yin and **M. Jain**, *Materials Challenges in Alternative & Renewable Energy*, Clearwater, FL, April 17-21st 2016.
37. Particle size dependence of the magnetic and magneto-caloric properties of HoCrO₃, S. Yin, T. Sauyet, M. S. Seehra, and **M. Jain**, *UConn Physics Department Poster Session*, Storrs, CT, 27th February, 2016.
38. Magnetoelectric and Magnetotransport Properties of Metal-Oxide Materials, **M. Jain**, *University of Michigan*, Ann Harbor, MI, December 11th, 2015 (**Invited**).
39. Structural, Magnetic, and Dielectric Properties of Ho Substituted DyCrO₃ Bulk and Thin-Films, A. McDannald, M. Seehra, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, November 29th – December 4th 2015.
40. Magnetic and Magnetocaloric Properties of Iron Substituted Holmium Chromite and Dysprosium Chromite, S. Yin and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, November 29th – December 4th 2015.
41. Magnetic properties and exchange interactions in rare-earth substituted DyCrO₃, A. McDannald, M. Seehra, and **M. Jain**, *Materials Science and Technology meeting*, Columbus, OH, October 4-8th 2015.
42. Magnetoelectric Multiferroics by Solution Methods, **M. Jain**, *Materials Science and Technology meeting*, Columbus, OH, October 4-8th 2015 (**Invited**).
43. Magnetic, Magnetotransport, and Multiferroic Properties of Functional Metal-Oxide Materials, **M. Jain**, *Los Alamos National Laboratory*, Los Alamos, NM, July 21st, 2015 (**Invited**).
44. Effects of iron substitution on magnetic and magnetocaloric properties in rare-earth chromites, Shiqi Yin, A. McDannald, **M. Jain**, *UConn IMS Annual Meeting*, Storrs, CT, 28th May (2015).

45. Single-Phase Bulk and Nanocomposite Films of Magnetoelectrics, **M. Jain**, *Materials Research Society Fall Meeting*, San Francisco, CA, April 6-10th, 2015 (**Invited**).
46. Magnetic properties and exchange interactions in rare-earth substituted DyCrO₃, A. McDannald and **M. Jain**, *59th Annual Magnetism and Magnetic Materials Conference*, Honolulu, Hawaii, November 3rd-7th, 2014.
47. Physical Properties of Perovskite-Type Rare-Earth Manganites and Chromites, **M. Jain**, *2014 ACerS-National Science Foundation Principle Investigator Workshop*, Fairfax, VA, June 17-18th 2014.
48. Determination of preferred c-axis orientation in thin films of BaFe₁₂O₁₉, R. G. Paranhos, D. Garcia, and **M. Jain**, *Yale-Rigaku Symposium*, New Haven, CT, June 6th, 2014.
49. Properties of Perovskite Based Functional Metal-Oxides and Nanocomposites Fabricated by solution techniques, **M. Jain**, *Rutgers University*, Piscataway, NJ, 15th April 2014 (**Invited**).
50. The Magnetocaloric Effect in Manganites and Magnetic Refrigeration, L. Kuna, M. Staruch, A. McDannald, and **M. Jain**, *7th Annual Frontiers in Undergraduate Research Poster Exhibition*, University of Connecticut, CT, April 11-12th, 2014.
51. Magnetic Behavior of Rare-Earth Substituted Orthochromites, A. McDannald, L. Kuna, and **M. Jain**, *American Physical Society March Meeting*, Denver, CO, March 3rd- 7th, 2014.
52. Structural, Microstructural, and Magnetoelectric properties of PZT:CFO Nanocomposite Thin Films, **M. Jain**, *Electronic Materials & Applications 2014 Conference*, Orlando, FL, January 23-25th, 2014 (**Invited**).
53. Synthesis, Structural and Magnetic Characterization of Dy_{1-x}R_xCrO₃ (R = Y, Ho, Nd), A. McDannald, L. Kuna, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, December 1st-3rd, 2013.
54. Properties of Perovskite Based Metal-Oxides and Nanocomposite Thin Films, **M. Jain**, *Materials Science & Technology 2013 Conference*, Montreal, Canada, October 27th-31st, 2013 (**Invited**).
55. Nanocomposite Films with Sensing Properties, **M. Jain**, *7th International Conference on Materials for Advanced Technologies*, Singapore, June 30th-July 5th, 2013 (**Invited**).
56. Single-Phase and Composite Magnetoelectric Multiferroics, **M. Jain**, *Materials Research Society Spring Meeting*, San Francisco, CA, April 1st-5th, 2013
57. Magnetoelectric Composite Thin Films by Mixed Solution Method, A. McDannald, M. Staruch, G. Srinivasan, G. Sreenivasulu, and **M. Jain**, *Materials Research Society Spring Meeting*, San Francisco, CA, April 1st-5th, 2013.
58. Complex Magnetic Interactions in A-site and B-site Doped Multiferroic TbMnO₃, M. Staruch and **M. Jain**, *American Physical Society Meeting*, Baltimore, MD, March 18th-22nd, 2013.
59. Perovskite BaCrO₃: completing a materials system with an anomalous Mott transition, Z. H. Zhu, F. J. Rueckert, J. I. Budnick, W. A. Hines, **M. Jain**, H. Zhang, and B. O. Wells, *American Physical Society Meeting*, Baltimore, MD, March 18th-22nd, 2013.
60. Nanocomposite Films With Low-Field Magnetoresistance or Magnetoelectric Properties, **M. Jain**, *37th International Conference and Expo on Advanced Ceramics and Composites*, Daytona Beach, FL, January 27th - February 1st, 2013 (**Invited**).
61. Single Phase RMnO₃ & PZT-Ferrite Multiferroics, **M. Jain**, *International Workshop and symposium on Emerging Frontiers in Multiferroics and Electronic Metamaterials*, Pattaya, Thailand, December 9-10th, 2012 (**Invited**).
62. Effects of Holmium Doping on the Multiferroic Properties of TbMnO₃, M. Staruch, A. Kumarasiri,

- G. Lawes, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, November 25th-30th, 2012.
63. Magnetic Properties of CoFe₂O₄ Nanoparticles and magnetoelectric Properties of PbZr_{0.52}Ti_{0.48}O₃:CoFe₂O₄ Nanocomposite Films, A. McDannald, M. Staruch, G. Srinivasan, G. Sreenivasulu, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, November 25th-30th, 2012.
 64. Magnetic Properties of solution-grown TbMnO₃ thin films, M. Staruch, A. Chen, C. Li, H. Wang, L. Stan, and **M. Jain**, *Materials Research Society Spring Meeting*, San Francisco, CA, April 9th-13th, 2012.
 65. Highly Aligned Carbon Nanotube Forests Coated by Superconducting NbC, G. Zou, H. M. Luo, Y. Zhang, **M. Jain**, A. Burrell, T. McCleskey, and Q. Jia, *Materials Research Society Spring Meeting*, San Francisco, CA, April 9th-13th, 2012.
 66. Magnetoelectric Properties of PbZr_{0.52}Ti_{0.48}O₃:CoFe₂O₄ Composite Films, M. Staruch, A. McDannald, D. Navarathne, G. Sotzing, and **M. Jain**, *Materials Research Society Spring Meeting*, San Francisco, CA, April 9th-13th, 2012.
 67. Low-Field Magnetoresistance of La_{0.67}Sr_{0.33}MnO₃:MgO Composite Films Grown by Solution Method, M. Staruch, D. Hires, and **M. Jain**, *Materials Research Society Fall Meeting*, Boston, MA, November 28th-December 2nd, 2011.
 68. Synthesis and Characterization of Iron and Cobalt Substituted Hydroxyapatite Prepared by a Simple Ion Exchange Soaking Procedure, E. Kramer, **M. Jain**, J. Budnick, and M. Wei, *Materials Research Society Fall Meeting*, Boston, MA, November 28th- December 2nd, 2011.
 69. Chemical Solution Routes to Fabricate Functional Materials, **M. Jain**, *International Workshop on Advances in Multifunctional, Multiferroic, Materials and Their Applications and the Meeting of the International Network for Advanced Multifunctional Materials*, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil, November 4th-8th, 2011 (**Tutorial-Invited**).
 70. Ferroic and Multiferroic Thin Films and Composites, **M. Jain**, *International Workshop on Advances in Multifunctional, Multiferroic, Materials and Their Applications and the Meeting of the International Network for Advanced Multifunctional Materials*, Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil, November 4th-8th, 2011 (**Invited**).
 71. Functional Oxides: Development and Understanding for Applications, **M. Jain**, Graduate students' visitation day *Institute of Materials Science, University of Connecticut*, Storrs, CT, August 22nd, 2011.
 72. Effects of Mn Doping on the Properties of Thin Films of Pb_{0.3}Sr_{0.7}TiO₃, M. Staruch, K. Cil, H. Silva, and **M. Jain**, *Materials Research Society Spring Meeting*, San Francisco, CA, April 25th-29th, 2011.
 73. Iron-Substitution in Hydroxyapatite Using a Simple Ion Exchange Soaking Procedure, E. Kramer, M. Staruch, **M. Jain**, and M. Wei, *Society For Biomaterials Annual Meeting and Exposition*, Orlando, FL, April 13th-16th, 2011.
 74. Magnetotransport in Pure and Nanocomposite Manganite Thin Films, **M. Jain**, *Electronic Materials and Applications*, Orlando, FL, January 19th-21st, 2011 (**Invited**).
 75. Synthesis of epitaxial metal-oxide films by polymer-assisted deposition, H. Luo, **M. Jain**, E. Bauer, A. Burrell, T. McCleskey, and Q. X. Jia, *Electronic Materials and Applications*, Orlando, FL, January 19th-21st, 2011.
 76. Effects of Mn Doping on Structural and Electronic Properties of Thin Films of Pb_{0.3}Sr_{0.7}TiO₃, M. Staruch, H. Wang, and **M. Jain**, *Materials Science and Technology Meeting*, Houston, TX, October 17th-21st, 2010.
 77. Multiferroic Research Activities at U Conn, **M. Jain**, *International Symposium on Multifunctionality*

of Ferroics and Multiferroics, San Antonio, TX, October 15th – 16th 2010 **(invited)**.

78. Functional Oxide Materials, **M. Jain**, Graduate student's visitation day *Institute of Materials Science, University of Connecticut*, Storrs, CT, August 23rd, 2010.
79. Piezoelectrics: Smart Materials, **M. Jain**, Physics Club, University of Connecticut, Storrs, CT, April 8th, 2010 **(invited)**.
80. Substrate Effects on Magnetotransport Properties of the $\text{Pr}_{0.5}\text{Ca}_{0.5}\text{MnO}_3$ Thin Films, M. Staruch, J. I. Budnick, H. Wang, and **M. Jain**, and, *Materials Research Society Fall Meeting*, Boston, MA, November 30th-December 4th, 2009.
81. DNA Nanofiber Based Decontamination Membranes, D. Navarathne, Y. Ner, **M. Jain**, J. G. Grote, and G. A. Sotzing, *Materials Research Society Fall Meeting*, Boston, MA, November 30th-December 4th, 2009.
82. Functional Oxides: Development and Understanding for Applications, **M. Jain**, Graduate student's visitation day *Institute of Materials Science, University of Connecticut*, Storrs, CT, February 27th, 2009.
83. Superconductivity of Iron Selenide thin films, Y. Nie, E. Brahimi, J. I. Budnick, W.A. Hines, **M. Jain**, and B.O. Wells, *American Physical Society*, Pittsburgh, PA, March 16-20th, 2009.
84. Functional Oxide Materials: Structure-Property Correlations, **M. Jain**, *Institute of Materials Science Associate Program, University of Connecticut*, Storrs, CT, May 27th, 2009.
85. Solution approaches to grow perovskite metal-oxide thin films for devices, **M. Jain**, *Mechanical and Aerospace Engineering Department, West Virginia University*, Morgantown, WV, October 19th, 2008 **(invited)**.
86. Magnetotransport properties of the $\text{Pr}_{0.5}\text{Ca}_{0.5}\text{MnO}_3$ thin films grown by a solution technique, **M. Jain**, F. Ronning, J. D. Thompson, L. Stan, Q. X. Jia, J. Yoon, H. Wang, and C. B. Eom, *Materials Science and Technology*, Pittsburgh, PA, October 5-9th, 2008.
87. Self-assembled epitaxial multiferroic nanocomposite films prepared by polymer assisted deposition, H. Luo, H. Yang, S. A. Baily, O. Ugurlu, **M. Jain**, M. E. Hawley, E. Bauer, T. McCleskey, A. K. Burrell, L. Civale, T. G. Holesinger, and Q. X. Jia, *Materials Science and Technology*, Pittsburgh, PA, October 5-9th, 2008.
88. Connection of carbon-nanotubes to silicon using chemical route at room temperature, G. Zou, **M. Jain**, H. Zhou, D. Williams, M. Zhou, T. M. McCleskey, A. K. Burrell, and Q. X. Jia, *American Chemical Society-236th National Meeting and Exposition*, Philadelphia, PA, August 17th-21st, 2008.
89. NbN films grown by chemical solution deposition, G. Zou, **M. Jain**, H. Luo, S. Baily, T. M. McCleskey, E. Bauer, A. K. Burrell, and Q. X. Jia, *American Physical Society March Meeting*, New Orleans, LA, March 10-14th, 2008.
90. Epitaxial growth of complex oxide films by a chemical solution method, Q. X. Jia, **M. Jain**, H. Luo, E. Bauer, H. Wang, A. K. Burrell, and T. M. McCleskey, *American Physical Society March Meeting*, New Orleans, LA, March 10-14th, 2008.
91. Perovskite ferroelectric thin films grown by polymer assisted deposition technique, **M. Jain**, E. Bauer, H. Yang, A. K. Burrell, T. M. McCleskey, R. F. DePaula, and Q. X. Jia, *Materials Research Society Spring Meeting*, San Francisco, CA, March 24-28th, 2008.
92. Tunable 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, *17th International Symposium on Applications of Ferroelectrics*, Santa Fe, NM, February 24-27th, 2008.

93. Temperature-dependent leakage mechanisms of BiFeO₃ films, H. Yang, **M. Jain**, H. M. Luo, D. M. Feldmann, P. C. Dowden, R. F. DePaula, S. R. Foltyn, and Q. X. Jia, *17th International Symposium on Applications of Ferroelectrics*, Santa Fe, NM, February 24-27th, 2008.
94. Structural, dielectric, and electrical properties of relaxor BaZr_xTi_{1-x}O₃ thin films grown by polymer assisted deposition technique, **M. Jain**, E. Bauer, H. Yang, H. M. Luo, A. K. Burrell, T. M. McCleskey, R. F. DePaula, and Q. X. Jia, *Materials Research Society Fall Meeting*, Boston, MA, November 26-30th, 2007.
95. Dielectric properties of self-assembled (BiFeO₃)_{0.5}:(Sm₂O₃)_{0.5} nanocomposite films. H. Yang, **M. Jain**, H. Wang, J. Yoon, P. C. Dowden, J. L. MacManus-Driscoll, and Q. X. Jia, *Materials Research Society Fall Meeting*, Boston, MA, 26-30th November, 2007.
96. Effective thickness and dielectric constant of interfacial layers of Pt/Bi_{3.15}Nd_{0.85}Ti₃O₁₂/SrRuO₃ capacitors. H. Yang, N. A. Suvorova, **M. Jain**, M. E. Hawley, P. C. Dowden, R. F. DePaula, C. J. Lu, and Q. X. Jia, *Materials Research Society Fall Meeting*, Boston, MA, November 26-30th, 2007.
97. Device concepts based on ferroics, **M. Jain**, *Electrical and Computer Engineering Department, University of Texas*, San Antonio, TX, November 19th, 2007 (**invited**).
98. Physical properties of perovskite metal-oxide thin films, **M. Jain**, Department of Physics, University of Connecticut, Storrs, CT, September 27th, 2007 (**invited**).
99. Solution approach for the growth of rare earth manganite thin films, **M. Jain**, F. Ronning, M. F. Hundley, T. Park, J. D. Thompson, A. K. Burrell, T. M. McCleskey, B. Maiorov, L. Civale, and Q. X. Jia, *Materials Science and Technology 2007 Conference and Exhibition*, Detroit, MI, September 16-20th, 2007 (**invited**).
100. Chemical solution approach for the growth of a variety of electronic oxide thin films, **M. Jain**, F. Ronning, M. F. Hundley, A. K. Burrell, T. M. McCleskey, B. Maiorov, L. Civale, A. S. Bhalla, R. S. Katiyar, and Q. X. Jia, *Materials Science and Technology 2007 Conference and Exhibition*, Detroit, MI, September 16-20th, 2007 (**invited**).
101. Physical properties of perovskite thin films, **M. Jain**, *Department of Physics, University of Tuskegee*, Tuskegee, AL, July 18th, 2007 (**invited**).
102. Novel approach to grow metal-oxide films for electronic devices, Q. X. Jia, **M. Jain**, Y. Lin, H. Luo, A. K. Burrell, and T. M. McCleskey, *International Conference on Materials for Advanced Technology*, Singapore, July 1-6th, 2007.
103. Magnetoresistance in the multilayer-coated films of hole doped lanthanum manganites grown by polymer assisted deposition, **M. Jain**, P. Shukla, Y. Li, M. F. Hundley, A. K. Burrell, T. M. McCleskey, R. F. DePaula, and Q. X. Jia, *Materials Research Society Spring Meeting*, San Francisco, CA, April 9-13th, 2007.
104. Polymer-assisted deposition of epitaxial SrRuO₃ thin films, H. Luo, **M. Jain**, R. F. DePaula, T. M. McCleskey, A. K. Burrell, and Q. X. Jia, *Materials Research Society Spring Meeting*, San Francisco, CA, April 9-13th, 2007.
105. Conduction mechanisms of BiFeO₃ thin films, H. Yang, **M. Jain**, B. S. Kang, Y. Li, R. F. DePaula, and Q. X. Jia, *Materials Research Society Spring Meeting*, San Francisco, CA, April 9-13th, 2007.
106. Chemical solution approaches for the growth of a variety of electronic oxide thin films, **M. Jain**, *Materials Science and Technology Division*, Los Alamos National Laboratory, Los Alamos, NM, March 20th, 2007 (**invited**).
107. Electrical transport and magnetic behavior of Pr_{0.5}Ca_{0.5}MnO₃ films grown by chemical solution deposition technique, **M. Jain**, Q. X. Jia, F. Ronning, T. Park, and J. D. Thompson, *American*

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108. Ferroelectric properties of lanthanum and praseodymium doped bismuth titanate thin films, **M. Jain**, B. S. Kang, and Q. X. Jia, *American Physical Society March Meeting*, Denver, CO, March 5-9th, 2007.
109. Structural and magnetic properties of ferromagnetic metal-oxide films grown by polymer assisted deposition, **M. Jain**, P. Shukla, M. F. Hundley, A. K. Burrell, T. M. McCleskey, and Q. X. Jia, *American Physical Society March Meeting*, Denver, CO, March 5-9th, 2007.
110. Comparative studies on dielectric and electrical properties of $\text{Pb}_{0.3}\text{Sr}_{0.7}\text{TiO}_3$ thin films prepared on different substrates, **M. Jain**, N. K. Karan, Q. X. Jia, A. S. Bhalla, and R. S. Katiyar, *Materials Science and Technology 2006 Conference and Exhibition*, Cincinnati, OH, October 15-19th, 2006.
111. Chemical solution approach for the growth of a variety of electronic oxide thin films, **M. Jain**, P. Shukla, Y. Li, M. F. Hundley, B. Maiorov, L. Civale, A. K. Burrell, T. M. McCleskey, A. S. Bhalla, R. S. Katiyar, and Q. X. Jia, *Materials Science and Technology 2006 Conference and Exhibition*, Cincinnati, OH, October 15-19th, 2006 (**invited**).
112. Metal-oxide films grown by a chemical solution deposition technique, Q. X. Jia, Y. Lin, **M. Jain**, P. Shukla, A. K. Burrell, and T. M. McCleskey, *Materials Science and Technology 2006 Conference and Exhibition*, Cincinnati, OH, October 15-19th, 2006.
113. Tunable dielectric and electrical properties of PbSrTiO_3 thin films, N. K. Karan, **M. Jain**, A. S. Bhalla, R. S. Katiyar, and Q. X. Jia, *15th International Symposium on the Applications of Ferroelectrics*, Sunset Beach, NC, July 30th-August 2nd, 2006.
114. Ferroelectric properties of $\text{Bi}_{3.25}\text{La}_{0.75}\text{Ti}_3\text{O}_{12}$ films deposited on various substrates with LaNiO_3 films as bottom electrode, **M. Jain**, B. S. Kang, Y. Li, and Q. X. Jia, *15th International Symposium on the Applications of Ferroelectrics*, Sunset Beach, NC, July 30th-August 2nd, 2006.
115. Magnetoresistance and transport-magnetism correlations in hole-doped lanthanum Manganites grown by polymer assisted deposition, **M. Jain**, P. Shukla, Y. Li, B. Maiorov, M. F. Hundley, M. E. Hawley, A. K. Burrell, T. M. McCleskey, L. Civale, and Q. X. Jia, *Materials Research Society Spring Meeting*, San Francisco, CA, April 17th-21st, 2006.
116. Chemical solution deposition techniques and perovskite ferroelectric films for tunable high frequency devices, **M. Jain**, *Superconductivity Technology Centre, Los Alamos National Laboratory*, Los Alamos, NM, July 19th, 2005 (**invited**).
117. Tunable dielectric properties of ferroelectric thin films for tunable microwave devices, **M. Jain**, N. K. Karan, R. S. Katiyar, and A. S. Bhalla, *107th Annual Meeting and Exposition of the American Ceramic Society*, Baltimore, MD, April 10th-13th, 2005.
118. Raman spectroscopy of stress effects in perovskite ferroelectric thin films and superlattices, R. S. Katiyar, **M. Jain**, R. R. Das, P. Bhattacharya, and Y. I. Yuzyuk, *107th Annual Meeting and Exposition of the American Ceramic Society*, Baltimore, MD, April 10th-13th, 2005.
119. Ferroelectric thin films and composites for tunable microwave devices, **M. Jain**, N. K. Karan, R. S. Katiyar, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Materials Research Society Fall Meeting*, Boston, MA, November 29th-December 3rd, 2004.
120. Tailoring of Perovskite Ferroelectric Thin Films for Tunable Microwave Devices, R.S. Katiyar, **M. Jain**, A.S. Bhalla, F.A. Miranda, and F.W. Van Keuls, *XIII International Materials Research Congress*, Cancun, Mexico, August 22nd-26th, 2004.
121. Tailoring of perovskite ferroelectric thin films for tunable microwave devices, R. S. Katiyar, **M. Jain**, S. B. Majumder, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *106th Annual Meeting &*

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122. Temperature Induced self-assembled nanostructured microwave dielectrics, **M. Jain**, S. Bhattacharyya, and R. S. Katiyar, *106th Annual Meeting & Exposition of The American Ceramic Society*, Indianapolis, IN, April 18th-21st, 2004.
123. BST/MgO heterostructured thin films with high figure of merit for tunable microwave devices, **M. Jain**, S. B. Majumder, R. S. Katiyar, and A. S. Bhalla, *Annual APS March Meeting*, Montreal, Canada, March 22nd-26th, 2004.
124. 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, *Materials Research Society Spring Meeting*, San Francisco, CA, April 12-16th, 2004.
125. Enhanced dielectric and electrical properties of BST heterostructured thin films by sol-gel technique for phase shifter applications, **M. Jain**, S. B. Majumder, R. S. Katiyar, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Materials Research Society Spring Meeting*, San Francisco, CA, April 12-16th, 2004.
126. Tailoring of dielectric properties of ferroelectric films with low loss dielectric material by sol-gel technique, **M. Jain**, S. B. Majumder, R. S. Katiyar, A. S. Bhalla, F. A. Miranda, and F. W. Van Keuls, *Materials Research Society Fall Meeting*, Boston, MA, December 1st-5th, 2003.
127. 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, *Materials Research Society Fall Meeting*, Boston, MA, December 1st-5th, 2003.
128. 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, and A. S. Bhalla, *15th AAAS and Puerto Rico EPSCoR Annual Meeting*, Condado, PR, November 19th-23rd, 2003.
129. Heterostructured BST:MgO 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, *15th AAAS and Puerto Rico EPSCoR Annual Meeting*, Condado, PR, November 19th-23rd, 2003.
130. Sol-gel derived textured barium strontium titanate thin films for microwave dielectric applications, R. S. Katiyar, **M. Jain**, S. B. Majumder, and A. S. Bhalla, *204th Electrochemical Society meeting*, Orlando, FL, October 12-16th, 2003.
131. Raman Studies of $\text{Pb}_{1-x}\text{Sr}_x\text{TiO}_3$ Ceramics and Composites, **M. Jain**, Yu. I. Yuzyuk, R.S. Katiyar, Y. Somiya, and A.S. Bhalla, *10th European Meeting on Ferroelectricity*. Cambridge, UK, August 3-8th, 2003.
132. Structural and dielectric properties of heterostructured BST thin films by sol-gel technique, **M. Jain**, S. B. Majumder, and R. S. Katiyar, *International Conference on Metallurgical Coatings and Thin Films*, San Diego, CA, April 28th-May 2nd, 2003.
133. Dielectric and electrical properties of $(\text{Ba}_{0.5}\text{Sr}_{0.5})\text{TiO}_3\text{:MgTiO}_3$ thin film composites for tunable microwave devices, **M. Jain**, S. B. Majumder, R. S. Katiyar, and A. S. Bhalla, *105th Annual Meeting & Exposition of The American Ceramic Society*, Nashville, TN, April 27-30th, 2003.
134. Structural and dielectric properties of heterostructured $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{TiO}_3\text{:MgO}$ thin films by sol-gel technique, **M. Jain**, S. B. Majumder, R. S. Katiyar, and A. S. Bhalla, *The 15th International Symposium on Integrated Ferroelectrics*, Colorado Springs, CO, March 9-12th, 2003.
135. Microstructural and vibrational properties of ferroelectric $\text{Pb}_{1-x}\text{Sr}_x\text{TiO}_3$ thin films and powders, **M. Jain**, A. Savvinov, P. S. Dobal, S. B. Majumder, R. S. Katiyar, and A. S. Bhalla, *Materials Research Society Fall Meeting*, Boston, MA, December 2nd-6th, 2002.

136. Improved dielectric properties of heterostructured $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{TiO}_3$ thin film composites for microwave dielectric devices, **M. Jain**, S. B. Majumder, R. S. Katiyar, A. S. Bhalla, D. C. Agrawal, V. N. Kulkarni, F. W. Van Keuls, F. A. Miranda, R. R. Romanofsky, C. H. Mueller, and F. Fernandez, *Materials Research Society Fall Meeting*, Boston, MA, December 2nd-6th, 2002.
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139. Phase transition behaviour of highly (100) textured sol-gel derived barium strontium titanate thin films for phase shifter applications, **M. Jain**, S. B. Majumder, and R. S. Katiyar, *104th Annual Meeting of the American Ceramic Society*, St. Louis, MO, April 28th-May 1st, 2002.
140. Investigations on sol-gel derived transition metal doped (100) oriented BST (50/50) thin film phase shifter applications, R. S. Katiyar, **M. Jain**, S. B. Majumder, F. W. Keuls, and F. A. Miranda, *Materials Research Society Spring Meeting*, San Francisco, CA, April 1st-5th, 2002.
141. Highly oriented sol-gel derived $\text{MgO}/\text{Ba}_{0.5}\text{Sr}_{0.5}\text{TiO}_3$ multilayer thin films for tunable microwave devices, **M. Jain**, S. B. Majumder, R. S. Katiyar, P. K. Sahoo, and V. N. Kulkarni, *American Physical Society Meeting*, Indianapolis, IN, March 18th-22nd, 2002.
142. 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, *Materials Research Society Fall Meeting*, Boston, MA, November 26-30th, 2001.
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145. Highly textured chemical solution deposited $\text{Ba}_{0.5}\text{Sr}_{0.5}\text{Ti}_{1-x}\text{MnO}_3$ ($x \sim 0$ to 5 at %) thin films for microwave dielectric applications. **M. Jain**, S. B. Majumder, A. Martinez, R. S. Katiyar, F. W. Van Keuls, and F. A. Miranda, *2nd Ferroelectric Workshop Puerto Rico 2001*, San Juan, PR, June 1st-2nd, 2001.
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148. Optical and electrical studies of nano-crystalline ZnO thin films, S. B. Majumder, **M. Jain**, W. Jia, S. B. Krupanidhi, and R. S. Katiyar *American Physical Society*, Seattle, WA, March 12-16th, 2001.
149. 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, *Materials Research Society Fall Meeting*, Boston, MA, November 29th-December 3rd, 1999.