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I EDUCATION

Ph.D.	University of Michigan Ann Arbor, Michigan	1999	Applied Physics
M.S.E.	University of Michigan Ann Arbor, Michigan	1997	Electrical Engineering
M.S.	University of Miami Coral Gables, Florida	1994	Physics
B.S.	Moscow Institute of Physics and Technology	1992	Applied Physics

II PROFESSIONAL EXPERIENCE

2008-present	**Professor**, ECE and Chemical Engineering, University of Houston, Houston, TX
2006-present	**Director**, Center for Nanomagnetic Systems, University of Houston, Houston, TX
2006-2008	**Associate Professor**, Chemical Engineering, University of Houston, Houston, TX
2003-2008	**Associate Professor**, Department of ECE, University of Houston, Houston, TX
2002-present	**Adjunct Professor**, Department of Physics, University of Miami, Coral Gables, FL
1999-2003	**Research Staff Member**, Seagate Technology, Pittsburgh, PA
1999-2000	**Visiting Scientist**, Department of ECE, Carnegie Mellon University, Pittsburgh, PA

III HONORS

Senior Member of IEEE; Associate Member of Information Storage Industry Consortium, Panelist at NASA/Goddard Mass Data Storage Conference Panel “Past, Present, and Future of Data” (2002); Panelist at several NSF and NIH Review Panels (2003/06); Executive Board Member of the Magnetic Recording Conference (TMRC); Seagate’s Key Employee Award; 30 Technical Achievement Awards by Seagate Technology; Represented Seagate Technology at the Lake Arrowhead Conference, a meeting of top 25 data storage industry leaders; Horace H. Rackham Fellowship (1998/99); University of Michigan, Physics Department Fellowship (1994/95); Applied Physics Fellowship (1998/99); Moscow Institute of Physics and Technology, Outstanding Student Fellowship (1991/92); Featured article in Houston Chronicle (01/25/05); Junior Faculty Research Award, Cullen College of Engineering (2007).

IV SCHOLARSHIP AND OTHER CREATIVE CONTRIBUTIONS

[341 citations excluding self-citations; number of citations is shown in parentheses]

A. Books and Book Chapters

1. S. Khizroev and **D. Litvinov**, "Perpendicular Magnetic Recording," Kluwer, 174p., ISBN: 1-4020-2662-5 (2004).
2. **D. Litvinov** and S. Khizroev, "Nanomaterials and Nanodevices Synthesized by Ion-Beam Technology," Dekker Encyclopedia of Nanoscience and Nanotechnology, ISBN 0-8247-4797-6, DOI: 10.1081/E-ENN-120040386, 1-11 (2005).
3. S. Khizroev, R. Chomko, and **D. Litvinov**, "Nanoscale Magnetic Devices," in *Handbook of Semiconductor Structures and Devices*, American Scientific Publishers, ISBN:158883-073-X (2005).

B. Invited Review Articles

1. **D. Litvinov**, V. Parekh, Ch. E, D. Smith, J. Rantschler, P. Ruchhoeft, D. Weller, S. Khizroev, "Nanoscale Bit-Patterned Media for Next Generation Data Storage Systems," Journal of Nanoelectronics and Optoelectronics **3**, 93-112 (2008).
2. N. Amos, R. Ikkawi, A. Krichevsky, R. Fernandez, E. Stefanescu, I. Dumer, **D. Litvinov**, S. Khizroev, "Multilevel Three-Dimensional Nanomagnetic Recording," Journal of Nanoelectronics and Optoelectronics **2**(3), 257-268 (2007).
3. **D. Litvinov**, V. Parekh, C. E, D. Smith, A. Ruiz, P. Ruchhoeft, J. Rantschler, S. Khizroev, "Fabrication of High Anisotropy Nanoscale Patterned Magnetic Recording Medium for Data Storage Applications," ECS Transactions **3**(25), 249-258 (2007).
4. K.S. Martirosyan, **D. Litvinov**, D. Luss, "Novel Synthesis Method of Micro- and Nanostructured Complex Oxides," in *Transworld Research Network* **37**(661), 67-102 (2007).
5. S. Khizroev, Y. Hijazi, N. Amos, E. Felissaint, N. Joshi, R. Ikkawi, R. Chomko, **D. Litvinov,** "Physics of Perpendicular Recording with a Patterned Soft Underlayer," *Journal of Nanoscience and Nanotechnology* **7**, 1-12 (2007).
6. **D. Litvinov** and S. Khizroev, "Perpendicular Magnetic Recording: Challenges at Nanoscale," Magnetic Materials, Processes, and Devices VIII, Electrochemical Society Proceedings 2004-23, 84-101 (2006).
7. S. Khizroev, Y. Hijazi, N. Amos, D. Doria, A. Lavrenov, R. Chomko, T.M. Lu, **D. Litvinov**, "Three-Dimensional Magnetic Recording: An Emerging Nanoelectronic Technology," *Journal of Nanoelectronics and Optoelectronics* **1**, 1-18 (2006).
8. **D. Litvinov** and S. Khizroev, "Perpendicular Magnetic Recording: Playback," *Applied Physics Reviews* in Journal of Applied Physics, **97**(7), 071101(1-12), 2005. **(2)**
9. S. Khizroev and **D. Litvinov**, "Perpendicular Magnetic Recording: Writing Process," Applied Physics Reviews in Journal of Applied Physics, **95**(9), 4521-4537 (2004). **(9)**
10. S. Khizroev and **D. Litvinov**, "Focused-ion-beam-based rapid prototyping of nanoscale magnetic devices," Review in *Nanotechnology* **14**, R7-15 (2004). **(6)**
11. **D. Litvinov** and S. Khizroev, "Perpendicular Recording: A Future Technology or a Temporary Solution," Tutorial published in proceedings of the *10th NASA Goddard Space Flight Center Conference on Mass Data Storage Systems and Technologies*, 1-19 (2002).

C. Invited Conference Presentations

1. **D. Litvinov**, V. Parekh, Ch. E, D. Smith, J. Rantschler, P. Ruchhoeft, D. Weller, S. Khizroev, "Nanoscale Bit-Patterned Media for Next Generation Magnetic Data Storage Applications," IEEE-

Nano, Hong Kong, China, August 2007.

2. **D. Litvinov**, V. Parekh, C. E, D. Smith, A. Ruiz, P. Ruchhoeft, J. Wolfe, J. Rantschler, S. Khizroev, “Fabrication of High Anisotropy Nanoscale Patterned Magnetic Recording Medium for Data Storage Applications,” ECS Meeting, Cancun, Mexico, November 2006.
3. **D. Litvinov**, V. Parekh, C. E, D. Smith, A. Ruiz, P. Ruchhoeft, J. Wolfe, J. Rantschler, S. Khizroev, “Design Considerations and Development of Bit-Patterned Magnetic Recording Medium,” Workshop on “Self-Assembled Media, Patterned Media and Domain-Wall Switched Media for Magnetic Data Storage”, MINT, University of Alabama, October 2006.
4. **D. Litvinov**, V. Parekh, Ch. E, D. Smith, V. Parekh, A. Ruiz, P. Ruchhoeft, “Fabrication and Characterization of Magnetic Multilayer Based Patterned Recording Medium,” National Institute of Standards & Technology, Gaithersburg, September 2006.
5. S. Khizroev, A. Lavrenov, N. Amos, R. Chomko, **D. Litvinov**, “Focused ion beam as a nanofabrication tool for rapid prototyping of nanomagnetic devices,” Microscopy and Microanalysis Workshop, Chicago, Illinois, August 2006.
6. **D. Litvinov** and S. Khizroev, “Fundamental Challenges Facing Perpendicular Magnetic Recording at Nanoscale Dimensions,” 206th Meeting of the Electrochemical Society, Honolulu, Hawaii, October 2004.
7. **D. Litvinov**, "Next Generation Magnetic Nanotransducers," Nano-Vivo Summit, Houston, Texas, July 2003.
8. S. Khizroev and **D. Litvinov**, “Nanoscale magnetic applications,” 2003 NNUN Japan-US Symposium, Tools and Metrology for Nanotechnology, Cornell University, Ithaca, NY, January 2003.
9. **D. Litvinov** and S. Khizroev, "Nanotechnology Applications in Magnetic Data Storage," to be presented at 10th International Conference on Composite Engineering New Orleans, Louisiana, July 2003.
10. S. Khizroev and **D. Litvinov**, "The Role of Focused Ion Beam in Nanoscale Magnetic Recording,"2003 NNUN Japan-US Symposium, Tools and Metrology for Nanotechnology, Ithaca, New York, January 2003.
11. **D. Litvinov** and S. Khizroev, "Fundamental Challenges Facing Perpendicular Recording at Nanoscale Dimensions," presented at the 47th Conference on Magnetism and Magnetic Materials, Tampa, Florida, October 2002.
12. **D. Litvinov** and S. Khizroev, “Next Generations Recording Technologies,” to be presented at THIC in Upper Marlboro, Maryland in November 2003.
13. **D. Litvinov** and S. Khizroev, “Fundamental Challenges Facing Perpendicular Magnetic Recording at Nanoscale Dimensions,” to be presented at the Conference on Magnetism and Magnetic Materials in Tampa, Florida in October 2002.
14. **D. Litvinov** and S. Khizroev, "Magnetic Recording: Prospects and Retrospect," presented at the invited panel discussion "10 Year Retrospective and 10 Year Prospective" at the 10th NASA Goddard Space Flight Center Conference on Mass Data Storage Systems and Technologies in College Park, Maryland in April 2002.
15. **D. Litvinov** and S. Khizroev, "Perpendicular Recording: A Future Technology or a Temporary Solution," tutorial presented at the 10th NASA Goddard Space Flight Center Conference on Mass Data Storage Systems and Technologies in College Park, Maryland in April 2002.
16. **D. Litvinov**, J. Wolfson, J. Bain. M.H. Kryder, R.W. Gustafson, and S. Khizroev, "The Role of the Gap in Single Pole Heads in Perpendicular Recording," presented at 1st North American Perpendicular Magnetic Recording Conference in Miami, Florida in January 2002.
17. J. Wu, L. Holloway, H. Laidler, K.O’Grady, S. Khizroev, J.K. Howard, R.W. Gustafson, and **D. Litvinov**, "Magnetic Characterisation of Perpendicular Recording Media, presented at 1st North

American Perpendicular Magnetic Recording Conference in Miami, Florida in January 2002.

18. J.T. Wolfson, J.A. Bain, S. Khizroev, and **D. Litvinov**, "Dynamic Kerr Imaging of Soft Underlayer for perpendicular Recording Applications," presented at MMM in Seattle, WA 2001.

19. **D. Litvinov** and S. Khizroev, "Soft Underlayers", presented at the Lake Arrowhead Conference, December 2000.

20. R. Clarke and **D. Litvinov**, "Energetics of Cubic Boron Nitride Deposition," 45th International Symposium of American Vacuum Society: "Vacuum, Thin Films, Surfaces/Interfaces & Processing," Baltimore, Maryland, November 1998.

D. Other Invited Presentations

1. **D. Litvinov**, “Nanomagnetic Devices and Systems: Leveraging Basic Research to Develop Technologies of the Future,” Engineering Division, National Science Foundation, October 17, 2007.
2. **D. Litvinov**, J. Rantschler, P. Ruchhoeft, “Design and Fabrication of Patterned Magnetic Recording Medium,” Center for 3D Electronics, University of California, Riverside, CA, July 5, 2007.
3. **D. Litvinov**, “Nanoscale Bit-Patterned Medium Recording,” Computer Mechanics Laboratory, University of California, Berkeley, CA, March 5, 2007.
4. **D. Litvinov**, R. Willson, P. Ruchhoeft, “Nanomagnetic Devices & Systems,” The Methodist Hospital Research Institute, Houston, TX, October 27, 2006.
5. **D. Litvinov**, Ch. E, “Combinatorial Synthesis of Co/Pd Magnetic Multilayers,” Center for Magnetic Recording Research, University of California, San Diego, CA, March 9, 2006.
6. **D. Litvinov**, D. Smith, Ch. E, “Materials for Patterned Recording Media,” Center for Research on Information Storage Materials, Stanford University, CA, March 1, 2005.
7. **D. Litvinov**, “Materials Issues in Nanoscale Magnetic Recording Schemes,” University of Florida, FL, March 21, 2003.
8. **D. Litvinov** and S. Khizroev, “Nanoscale Magnetic Recording,” Center for Nano Science and Technology, University of Notre Dame, Notre Dame, IN, March 27, 2003.
9. **D. Litvinov**, J.K. Howard, and S. Khizroev “Magnetic Recording: Fundamental Challenges at Nanoscale,” Nanosystems Group, Florida International University, Miami, FL, December 23, 2003.
10. **D. Litvinov** and S. Khizroev, “Nanoscale Magnetic Recording,” MEMS/Micorsystems/Nanosystems Group, University of California, Los Angeles, CA, December 6, 2002.

E. Journal articles

1. Ch. E, J. Rantschler, S. Khizroev, **D. Litvinov**, “Micromagnetics of Signal Propagation in Magnetic Cellular Logic Data Channels,” Journal of Applied Physics, *in press* (2008).
2. B. Vu, **D, Litvinov**, R. Willson, "Gold Nanoparticle Effects in PCR: Polymerase Adsorption Favors Smaller Products", Analytical Chemistry, **80** (14), 5462–5467, 2008.
3. D. Litvinov, V. Parekh, Ch. E, D. Smith, J. Rantschler, P. Ruchhoeft, D. Weller, S. Khizroev, “Recording Physics, Design Considerations, and Fabrication of Nanoscale Bit-Patterned Media,” IEEE Transactions on Nanotechnology **7**(4), 463-476 (2008).
4. S.R. Brankovic, S.-E. Bae, **D. Litvinov**, “The effect of Fe^{3+} on magnetic moment of electrodeposited CoFe alloys – Experimental study and analytical model,” Electrochimica Acta **53**, 5934-5940 (2008).
5. J. George, J. Rantschler, S.-E. Bae, **D. Litvinov**, S.R. Brankovic, “Sulfur and Saccharin Incorporation into Electrodeposited CoFe Alloys: Consequences for Magnetic and Corrosion Properties,” Journal of Electrochemical Society **155** (9), D589-D594 (2008).
6. Ch. E, J.O. Rantschler, S. Khizroev, D. Litvinov, “Micromagnetic study of domain wall dynamics in bit-patterned nanodots,” Journal of Applied Physics **103**, Art. No. 113910 (2008).

7. R. Ikkawi, N. Amos, A. Lavrenov, A. Krichevsky, D. Teweldebrhan, S. Ghosh, A. A. Balandin, **D. Litvinov**, S. Khizroev, "Near-Field Optical Transducer for Heat-Assisted Magnetic Recording for Beyond-10-Tbit/in2 Densities," Journal of Nanoelectronics and Optoelectronics **3**, 44–54 (2008).
8. Ch. E, V. Parekh, P. Ruchhoeft, S. Khizroev, **D. Litvinov**, "Magnetization Reversal in Patterned $(Co/Pd)_n$ Multilayers," Journal of Applied Physics **103**, Art. No. 063904, 1-4 (2008).
9. N. Amos, R. Fernandez, R. Ikkawi, B. Lee, A. Lavrenov, A. Krichevsky, **D. Litvinov**, S. Khizroev, "Magnetic Force Microscopy Study of Magnetic Stripe Domains in Sputter Deposited Permalloy Thin Films," Journal of Applied Physics **103**(7), Art. No. 07E732 (2008).
10. Ch. E, J. Rantschler, S. Zhang, S. Khizroev, T.R. Lee, **D. Litvinov**, "Low Temperature Vacuum Annealing Study of $(Co/Pd)_n$ Magnetic Multilayers," Journal of Applied Physics **103**, Art. No. 07B510 (2008).
11. D. Smith, V. Parekh, Ch. E, S. Zhang, W. Donner, T.R. Lee, S. Khizroev, **D. Litvinov**, "Magnetization Reversal and Magnetic Anisotropy in Patterned Co/Pd Multilayer Thin Films," Journal of Applied Physics **103**, Art. No. 023920 (2008).
12. J.W. Lau, R.D. McMichael, S.H. Chung, J.O. Rantschler, V. Parekh, **D. Litvinov**, "Microstructural Origin of Switching Field Distribution in Patterned Co/Pd Multilayer Dots," Applied Physics Letters **92**, Art. No. 012506 (2008).
13. R. Ikkawi, N. Amos, A. Krichevsky, R. Chomko, **D. Litvinov**, S. Khizroev, "Nanolasers to Enable Storage Densities beyond 10 Tbit/in^2," Applied Physics Letters 91, Art. No. 042502 (2007).
14. N. Amos, A. Lavernov, R. Ikkawi, P. Gomez, F. Candocia, R. Chomko, **D. Litvinov**, S. Khizroev, "Nanomagnetic probes to image patterned media for information densities beyond ten terabit-per-square-inch," Journal of Nanoelectronics and Optoelectronics **2**(2), 202-204 (2007).
15. D. Smith, S. Zhang, W. Donner, C. E, T.R. Lee, S. Khizroev, D. Litvinov, "On the Physics of Magnetic Anisotropy in Co/Pd Multilayer Thin Films", Materials Research Society Symposium Proceedings **998E**, Art. No. J05-04 (2007).
16. C. E; J. Rantschler; S. Zhang; T. R. Lee; D. Smith; D. Weller; S. Khizroev; D. Litvinov, "Annealing Study of (Co/Pd)N Magnetic Multilayers for Applications in Bit-Patterned Magnetic Recording Media", Materials Research Society Symposium Proceedings. **961E**, Art. No. O01-06 (2007).
17. V. Parekh, A. Ruiz, P. Ruchhoeft, S. Brankovic, **D. Litvinov**, "Close-Packed Noncircular Nanodevice Pattern Generation by Self-Limiting Ion-Mill Process," Nano Letters **7**(10), 3246-3248 (2007).
18. Ch. E, J. Rantschler, S. Zhang, D. Smith, V. Parekh, S. Khizroev, T.R. Lee, **D. Litvinov**, "Integranular interactions of low temperature atmosphere annealed Co/Pd magnetic multilayers," J. Appl. Phys. **101**, Art. No. 09D108 (2007).
19. V. Parekh, D. Smith, Ch. E, J. Rantschler, S. Khizroev, **D. Litvinov**, "He+ ion irradiation study of continuous and patterned Co/Pd multilayers," J. Appl. Phys. **101**, Art No. 083904 (2007).
20. P. Gomez, **D. Litvinov**, and S. Khizroev, "A Method to Design High SNR Nanoscale Magnetic Sensors Using an Array of Tunneling Magneto-Resistive (TMR) Devices," Journal of Physics D: Applied Physics 40, 4396-404 (2007).
21. V. Parekh, A. Ruiz, P. Ruchhoeft, H. Nounu, **D. Litvinov**, and J. Wolfe, "Estimation of scattered particle exposure in ion beam aperture array lithography," J. Vac. Sci. Techn. B **24** (6), 2915-2919 (2006).
22. D. Smith, Ch. E., S. Khizroev, **D. Litvinov**, "The Influence of Bit Patterned Medium Design and Imperfections on Magnetoresistive Playback," *IEEE Transactions on Magnetics* **42** (10), 2285-2287 (2006).
23. S. Khizroev, Y. Hijazi, N. Amos, R. Chomko, **D. Litvinov**, "Physics considerations in the design of three-dimensional and multilevel magnetic recording," Journal of Applied Physics **100**, Art No. 063907 (2006).

24. Ch. E., D. Smith, S. Khizroev, D. Weller, **D. Litvinov**, “Micromagnetics of Magnetization Reversal in Patterned Magnetic Recording Medium,” *IEEE Transactions on Magnetics* **42** (10), 2411-2413 (2006). **(2)**
25. J. Dutson, **D. Litvinov,** M. Gibbs, Y. Inaba, H. Muraoka, K. O’Grady, “Magnetization reversal in media with perpendicular anisotropy,“ *J. of Magn. Magn. Mater.* **304**(1), 51-54 (2006). **(1)**
26. Y. Hijazi, R. Ikkawi, N. Amos, A. Lavrenov, D. Doria, N. Joshi, R. Chomko, **D. Litvinov**, S. Khizroev, “Patterned Soft Underlayers for Perpendicular Media,” *IEEE Transactions on Magnetics* **42** (10), 2375-2377 (2006).
27. Chunsheng E, D. Smith, E. Svedberg, S. Khizroev, **D. Litvinov**, “Combinatorial Synthesis of Co/Pd Magnetic Multilayers,” Journal of Applied Physics, **99**, Art. No. 113901 (2006).
28. V. Parekh, Ch. E, D. Smith, A. Ruiz, J.C. Wolfe, P. Ruchhoeft, E. Svedberg, S. Khizroev, **D. Litvinov**, “Fabrication of High Anisotropy Nanoscale Patterned Magnetic Recording Medium for Data Storage Applications,” Nanotechnology **17**, 2079-2082 (2006). **(6)**
29. D. Smith, Ch. E, S. Khizroev, **D. Litvinov**, “Magnetoresistive playback heads for bit-patterned medium recording applications,” Journal of Applied Physics **99**, Art. No. 014503, 1-7 (2005). **(1)**
30. R. Chomko, **D. Litvinov**, S. Khizroev, “A nanoscale transducer for perpendicular magnetic recording,” Applied Physics Letters **87**, 162503 (2005).
31. Chunsheng E, D. Smith, S. Khizroev, D. Weller, J. Wolfe, **D. Litvinov**, “Physics of patterned medium recording: design considerations,” Journal of Applied Physics **98**(2), Art. No. 024505, 1-8 (2005). **(2)**
32. S. Khizroev, Y. Hijazi, R. Chomko, S. Mukherjee, R. Chantrell, X. Wu, R. Carley, **D. Litvinov**, “Focused-ion-beam-fabricated nanoscale magnetoresistive ballistic sensors”, Applied Physics Letters, **86** (4):042502 (2005). **(6)**
33. **D. Litvinov**, J. Wolfe, E. Svedberg, T. Ambrose, K. Howard, F. Chen, E. Schlesinger, S. Khizroev, “Ion implantation of magnetic thin-films and nanostructures,” *JMMM* **283**(1), 128-132 (2004). **(1)**
34. F. Candocia, E. Svedberg, **D. Litvinov**, S. Khizroev, "Deconvolution processing for increasing the resolution of magnetic force microscopy measurements," Nanotechnology **15**, S575-S584 (2004). **(2)**
35. S. Mukherjee, **D. Litvinov**, S. Khizroev, "Atomic Scale Modeling of Nanoconstrictions," IEEE Trans. Magn. 40 (4), 2143 (2004). **(2)**
36. **D. Litvinov** and S. Khizroev, "Orientation-Sensitive Magnetic Force Microscopy for Future Probe Storage Applications," *Applied Physics Letters* **81**(10), 1878-1880 (2002) ***[Editor's choice in the AIP Virtual Journal of Nanoscience & Technology, Vol. 6(11), Sept. 2002]***. **(8)**
37. S. Khizroev, D.A. Thompson, M.H. Kryder, **D. Litvinov**, "Direct Observation of Magnetization Switching in Focused Ion-beam Fabricated Nanotubes," *Applied Physics Letters* **81**(12), 2256-2257 (2002) ***[Editor's choice in the AIP Virtual Journal of Nanoscience & Technology, Vol. 6(12), Sept. 2002]***. **(6)**
38. **D. Litvinov** and S. Khizroev, "Focused Ion Beams in Future Nanoscale Probe Recording," *Nanotechnology* **13**, 179-184 (2002). **(4)**
39. S. Khizroev, J. Bain, and **D. Litvinov**, "Fabrication of Nanomagnetic Probes via Focused Ion Beam Etching and Deposition," *Nanotechnology* **13**, 619-622 (2002). **(7)**
40. A. Lyberatos, S. Khizroev, and **D. Litvinov**, "Thermal Effects in High-Speed Switching of the Magnetization of Fine Grains," *Japanese Journal of Applied Physics* **41**, 1598-1602 (2003). **(1)**
41. **D. Litvinov** and S. Khizroev, “Overview of Magnetoresistive Probe Heads for Nanoscale Recording Applications,” Journal of Magnetism and Magnetic Materials **264** (2-3), 275-283 (2003).
42. E. Svedberg, S. Khizroev, **D. Litvinov**, "Magnetic force microscopy study of perpendicular media: Signal-to-noise determination and transition noise analysis," *Journal of Applied Physics* **91**(8), 5365-5370 (2002). **(6)**

43. J.T. Wolfson, J.A. Bain, S. Khizroev, **D. Litvinov**, "Dynamic Kerr Imaging of Soft Underlayer for Perpendicular Recording Applications," (**invited**) *Journal of Applied Physics* **91**(10), 8665-8669 (2002). **(4)**

44. **D. Litvinov**, A. Lyberatos, J. Wolfson, J.A. Bain, and S. Khizroev, "Recording Layer Influence on the Dynamics of a Soft Underlayer," *IEEE Transactions on Magnetics*, **38**(5), 1994-1996 (2002). **(9)**

45. S. Khizroev, A. Lyberatos, M.H. Kryder, and **D. Litvinov**, "Physics of Perpendicular Recording: Effects of Magnetic 'Charge' Distribution," *Japanese Journal of Applied Physics, Part 2 Letters*, **41** (7A), L758-L760 (2002).

46. **D. Litvinov**, J. Wolfson, J. Bain, R.W. Gustafson, M.H. Kryder, and S. Khizroev, "Narrow Gap Single Pole Heads," *IEEE Transactions on Magnetics,* **38**(5), 2253-2255 (2002).

47. S. Khizroev, R.W. Gustafson, M.H. Kryder, and **D. Litvinov**, "Multiple Magnetic 'Image' Reflection in Perpendicular Recording," *IEEE Transactions on Magnetics,* **38**(5), 2066-2068 (2002).

48. S. Khizroev and **D. Litvinov**, "Parallels between Playback in Perpendicular and Longitudinal Recording," *Journal of Magnetism and Magnetic Materials*, **257**(1), 126-131 (2003). **(3)**

49. E. Svedberg, S. Khizroev, Ch. Chang, **D. Litvinov**, "Signal-to-Noise Degradation in Perpendicular Media under Thermal Aging and Aging in Magnetic Field," *Journal of Applied Physics,* **92**(11), 6714-6720 (2002). **(1)**

50. E. Svedberg, Ch. Chang, **D. Litvinov**, S. Khizroev, "Magnetic Force Microscopy of Skew Angle Dependencies in Perpendicular Magnetic Recording," *Journal of Applied Physics*, **93**(3), 2828-2833 2002. **(2)**

51. S. Khizroev, M.H. Kryder, and **D. Litvinov**, "Physics of Perpendicular Recording: Playback," *Journal of Applied Physics,* **93**(11), 9155-9164 (2003).

52. J. Wu, L. Holloway, H. Laidler, K.O'Grady, S. Khizroev, J.K. Howard, R.W. Gustafson, and **D. Litvinov**, "Magnetic Characterisation of Perpendicular Recording Media," *IEEE Transactions on Magnetics* **38**(4), 1682-1686 (2002). **(4)**

53. S. Khizroev, Y.-K. Liu, K. Mountfield, M.H. Kryder, and **D. Litvinov**, "Physics of Perpendicular Magnetic Recording: Writing Process," *Journal of Magnetism and Magnetic Materials* **246** (1-2), 352-361 (2002). **(5)**

54. D. Litvinov, M.H. Kryder, and S. Khizroev, "Recording Physics of Perpendicular Media: Hard Layers," *Journal of Magnetism and Magnetic Materials* **241**(2-3), 453-465 (2002). **(6)**

55. **D. Litvinov**, J.Wolfson, J.A. Bain, R.W. Gustafson, M.H. Kryder, S. Khizroev, "The Role of the Gap in Single Pole Heads in Perpendicular Recording," *IEEE Transactions on Magnetics* **38**(4), 1658-1663 (2002).

56. S. Khizroev and **D. Litvinov**, "Response to Comment on "On the Mechanism of the Cubic Phase Formation in the Boron Nitride Thin-Film Systems," *Applied Physics Letters* **80**(7), 1308-1309 (2002).

57. A. Lyberatos, S. Khizroev, and **D. Litvinov**, "High speed coherent switching of magnetic recording media," *IEEE Transactions on Magnetics* **37**(4), 1369-1372 (2001). **(3)**

58. **D. Litvinov,** M.H. Kryder, and S. Khizroev, "Recording Physics of Perpendicular Media: Soft Underlayers," *Journal of Magnetism and Magnetic Materials* **232**(1-2), 84-90 (2001). **(29)**

59. B. Lu, T. Klemmer, S. Khizroev, K. Howard, **D. Litvinov**, A.G. Roy, and D.E. Laughlin, "CoCrPtTa/Ti perpendicular media deposited at high sputtering rate," *IEEE Transactions on Magnetics* **37**(4), 1319-1322 (2001). **(3)**

60. R. Clarke, **D. Litvinov**, C. Taylor, D. Barlett, A. Inspektor, "Controlling stress in cubic boron nitride coatings," *Thin Solid Films* **398**, 137-141 (2001). **(2)**

61. **D. Litvinov**, R. Chomko, J. Wolfson, E. Svedberg, J. Bain, R. White, R. Chantrell, P. Ridley, S. Khizroev, "Dynamics of Perpendicular Recording Heads," *IEEE Transactions on Magnetics* **37**(4), 1376-1378 (2001). **(2)**

62. S. Khizroev and **D. Litvinov**, "Soft Underlayers," Proceedings of the 20th Lake Arrowhead Conference on Data Storage (2001).

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I. Contributed conference presentations

1. **D. Litvinov**, C. E, V. Parekh, J. Rantschler, D. Smith, P. Ruchhoeft, S. Khizroev, “Magnetization Reversal Physics in $(Co/Pd)_n$ Bit-Patterned Magnetic Mutlilayers,” 52nd Conference on Magnetism and Magnetic Materials, Tampa, FL, November 2007.
2. J.W. Lau, R.D. McMichael, S. Chung, J.O. Rantschler, V. Parekh, **D. Litvinov**, “Microstructural Origin of Switching Field Distribution in Patterned Co/Pd Multilayer Nanodots,” 52nd Conference on Magnetism and Magnetic Materials, Tampa, FL, November 2007.
3. A. Ruiz, V. Parekh, J.O. Rantschler, P. Ruchhoeft, S. Khizroev, **D. Litvinov**, “Fabrication of Large-Area Magnetic Ring Arrays Using Ion Beam Proximity Lithography,” 52nd Conference on Magnetism and Magnetic Materials, Tampa, FL, November 2007.
4. N. Amos, R. Fernandez, R. Ikkawi, B. Lee, A. Lavrenov, A. Krichevsky, **D. Litvinov**, S. Khizroev, “Magnetic Force Microscopy Study of Magnetic Stripe Domains in Sputter Deposited Permalloy Thin-Films,” 52nd Conference on Magnetism and Magnetic Materials, Tampa, FL, November 2007.
5. R. Ikkawi, N. Amos, A. Krichevsky, R. Chomko, **D. Litvinov**, S. Khizroev, “Design, Fabrication, and Characterization of a Near-Field Optical Transducer for Heat Assisted Magnetic Recording for Areal Densities Beyond 10 Tbit/in^2,” 52nd Conference on Magnetism and Magnetic Materials, Tampa, FL, November 2007.
6. Ch. E, J. Rantschler, S. Khizroev, **D. Litvinov**, “Micromagnetic Study of Domain Wall Dynamics in Bit-Patterned Nanodots,” 52nd Conference on Magnetism and Magnetic Materials, Tampa, FL, November 2007.
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9. V. Parekh, A. Ruiz, Ch. E, P. Ruchhoeft, **D. Litvinov**, "Patterned Medium Substrates for Magnetic Recording Fabricated Using Ion Beam Proximity Lithography," American Vacuum Society 54th International Symposium, Seattle, WA, October 2007.
10. Ch. E, V. Parekh, J.O. Rantschler, P. Ruchhoeft, S. Khizroev, **D. Litvinov**, "The Effects of Edge Defects on the Switching Characteristics of Bit Patterned Media," IEEE-Nano, Hong Kong, China, August 2007.
11. V. Parekh, D. Smith, Ch. E, J. Rantschler, P. Ruchhoeft, S. Khizroev, **D. Litvinov**, "Fabrication of Patterned Magnetic Recording Medium for >1Tbit/in^2 Applications," IEEE-Nano, Hong Kong, China, August 2007.
12. L. Chang, K. Martirosyan, J. Rantschler, D. Luss, S. Khizroev, **D. Litvinov**, "Cost-Effective Approach to Large-Scale Synthesis of Cobalt Ferrite Nanoparticles," IEEE-Nano, Hong Kong, China, August 2007.
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55. **D. Litvinov**, J. Wolfson, J. Bain. M.H. Kryder, R.W. Gustafson, and S. Khizroev, "Narrow Gap in Single Pole Heads in Perpendicular Recording," INTERMAG, Amsterdam, Netherlands, April 2002.
56. A. Lavrenov, **D. Litvinov**, and S. Khizroev, "Study of the Pinning Nature in High-Temperature Superconductors via Direct Sensing of Individual Magnetic Vortices," MMM 2001, Seattle, Washington, November 2001.
57. S. Khizroev, A. Lyberatos, and **D. Litvinov**, "Effects of Charge Distribution in a Perpendicular Medium," MMM, Seattle, Washington, November 2001.
58. **D. Litvinov** and S. Khizroev, "Recording Physics of Perpendicular Media," Joint INTERMAG/MMM conference, San Antonio, Texas, January 2001.
59. T. Klemmer, K. Howard, S. Khizroev, **D. Litvinov**, A. Roy, and D. Laughlin, "Seed Layer Effect on the Microstructure and Magnetic Properties of Co/Pd Multilayers," Joint Intermag/MMM conference in San Antonio, Texas, January 2001.
60. E. Svedberg, S. Khizroev, **D. Litvinov**, "Magnetic Force Microscopy Study of Perpendicular Media," Joint Intermag/MMM, San Antonio, Texas, January 2001.
61. J. Wolfson, J.A. Bain, R. White, R. Chantrell, E. Svedberg, **D. Litvinov**, S. Khizroev, "Dynamics of Perpendicular Recording," Joint Intermag/MMM, San Antonio, Texas, January 2001.
62. A. Lyberatos, S. Khizroev, and **D. Litvinov**, "High speed coherent switching of magnetic recording media," Joint Intermag/MMM, San Antonio, Texas, January 2001.

63. B. Lu, T. Klemmer, S. Khizroev, K. Howard, and **D. Litvinov**, "CoCrPtTa/Ti perpendicular media deposited at high sputtering rate," Joint INTERMAG/MMM, San Antonio, Texas, January 2001.
64. R. Clarke, A. Inspektor, **D. Litvinov**, D. Barlett, and C.A. Taylor, "Thick Ultra-Hard Coatings Based on Cubic Boron Nitride," International Conference on Metallurgical Coatings and Thin Films, San Diego, California, April-May 2001.
65. S. Khizroev and **D. Litvinov**, "Perpendicular Recording at 100Gbit/in^2 density," presented at Perpendicular Magnetic Recording Conference, Japan, October 2000.
66. S. Khizroev, Y.-K. Liu, K. Mountfield, and **D. Litvinov**, "Dynamics studies of a perpendicular recording system," INTERMAG, Toronto, Canada, April 2000.
67. H. Gong, **D. Litvinov**, T.J. Klemmer, D.N. Lambeth, and J.K. Howard, "Seed layer effects on the magnetoresistive properties of NiFe films," INTERMAG, Toronto, Canada, April 2000.
68. **D. Litvinov**, L. Abelmann, K. Ramstock, S. Khizroev, "Micromagnetics of a soft underlayer," INTERMAG, Toronto, Canada, April 2000
69. **D. Litvinov**, J.K. Howard, S. K. Khizroev, H. Gong, and D. Lambeth, "RHEED Based Texture Characterization and Control: Magnetic Thin Films for Perpendicular Media," International Conference on Magnetism and Magnetic Materials, San Diego, CA, October 1999.
70. A.Lukaszew, Y. Sheng, **D. Litvinov**, C. Uher, and R. Clarke, L. Pust, "Patterned Spin-Tunneling Structures," American Physical Society Meeting, Atlanta, Georgia, March 1999.
71. L. Abelmann, S.K. Khizroev, **D. Litvinov**, J. Zhu, M. H. Kryder, K. Ramstock, C. Lodder, "Micromagnetic Simulations of Ultra-Small Single Pole Perpendicular Heads," International Conference on Magnetism and Magnetic Materials Conference, San Diego, CA, October 1999.
72. R. A. Lukaszew , Y. Sheng, **D. Litvinov**, Y. Wang, L. Pust, C. Uher and R. Clarke, "Patterned Co-BN-Co Spin Tunneling Structures," Material Research Society Spring Meeting, San Francisco, CA 1999.
73. **D. Litvinov**, T. O'Donnell, and R. Clarke, "Thin Film Texture determination from RHEED," Material Research Society Fall Meeting, Boston, MA, December 1998.
74. **D. Litvinov**, R. Clarke, C.A. Taylor, and D. Barlett, "Real-time Strain Monitoring in Thin Film Growth: Cubic Boron Nitride," Material Research Society Fall Meeting, Boston, MA, December 1998.
75. **D. Litvinov**, R. Clarke, C.A. Taylor II, and D. Barlett, "Real-time Strain Monitoring in Thin Film Growth: Cubic Boron Nitride on Si (100)," Fourth International Workshop on Expert Evaluation and Control of Compound Semiconductor Materials and Technologies, Cardiff, Wales, United Kingdom, June 1998.
76. **D. Litvinov** and R. Clarke, "Epitaxial Growth of Boron Nitride," Meeting of the American Physical Society, Los Angeles, CA, March 1998.
77. L. Pust, L.E. Wenger, R.A. Lukaszew, R. Clarke, **D. Litvinov**, Y. Sheng, C. Uher, and Y. Wang, "Temperature Dependence of the Magnetization Reversal in Co-BN-Co Structures," 43rd Annual Conference on Magnetism and Magnetic Materials, Miami, Florida, November 1998.
78. G.R. Williams, **D. Litvinov**, R. Clarke, and S.C. Rand, "Quantum Interference and Bandedge Emission in Boron Nitride Thin Films," Joint Conference on Lasers and Electro-Optics and International Quantum Electronics Conference (CLEO/IQEC), San Francisco, California, May 1998.
79. **D. Litvinov** and R. Clarke, "Preparation of Pure Phase Semiconducting Cubic Boron Nitride," Material Research Society Fall Meeting, Boston, MA, December 1997.
80. **D. Litvinov** and R. Clarke, "Doping and Transport Properties of Semiconducting Cubic Boron Nitride," 8th European Conference on Diamond, Diamond-like and Related Materials, Edinburgh, Scotland, August 1997.
81. **D. Litvinov**, R. Clarke, and C.A. Taylor II, "Growth of Semiconducting Cubic Boron Nitride," 8th European Conference on Diamond, Diamond-like and Related Materials, Edinburgh, Scotland,

August 1997.

82. D. Litvinov, P. Encarnacion, G. Williams, and R. Clarke, "Semiconducting Cubic Boron Nitride Films," Meeting of the American Physical Society, Kansas City, MO, March 1997.

83. D. Litvinov and R. Clarke, "Self-Compliant Growth of Semiconducting Cubic Boron Nitride," 16th North American Conference on Molecular Beam Epitaxy, Ann Arbor, MI, October 1997.

84. **D. Litvinov**, P. Encarnacion, and G. Williams, and R. Clarke "Controlling Strain in Cubic Boron Nitride Films," Fourth Wide Bandgap and Nitride Workshop, St. Louis, MO, March 1997.

85. G. Williams, P. Encarnacion, **D. Litvinov**, S. Rand, and R. Clarke, "Cathodoluminesence Studies of Cubic Boron Nitride Films," Meeting of the American Physical Society, Kansas City, MO, March 1997.

86. A.Lukaszew, **D. Litvinov**, Y. Sheng, C. Uher, and R. Clarke, "Magnetic Multilayers MBE grown on Si (100)," The 3rd Workshop in Magnetic Sensor Materials, East Lansing, MI, November 1997.

V SERVICE

A. Department, College, University

1. University of Houston Research council member (2006-present);
2. University of Houston Intellectual Property committee (2008-present);
3. Cullen College of Engineering Governance committee (2007-present);
4. ECE Undergraduate curriculum committee (2005-present);
5. ECE Graduate program committee (2004-present);
6. ECE Graduate Research Conference (GRC) organizing committee (chair of the finance committee - 2005, local arrangements chair - 2006, general chair – 2007, program chair - 2008);
7. ECE safety committee (2004-present);
8. University of Houston Cleanroom committee (2007-present).

B. Professional/Academic Discipline

1. Co-founded **North American Perpendicular Magnetic Recording Conference** (**NAPMRC, napmrc.nanointernational.org**). NAPMRC is one of five conferences sponsored by IEEE Magnetics Society. Have been serving as a conference co-chair. Conference evolution timeline:
   - First NAPMRC was held in Miami, FL in January 2002;
   - Second NAPMRC was held jointly with Japanese PMRC in Monterey California in January 2003. The Joint conference was sponsored by the IEEE Magnetics Society and by the Japanese Society for Promotion of Science;
   - Third NAPMRC was held jointly with the Magnetic Recording Conference (**TMRC**) in Boulder, CO 2004.
2. Co-founded Conference on **Nanoscale Devices and Systems Integration** (**NDSI, www.nanointernational.org**). Have been serving as a conference co-chair. Conference evolution timeline:
   - The First NDSI was held in Miami, FL in February 2004. It was sponsored by the Miami Chapter of IEEE. Selected papers were published in Nanotechnology.
   - The Second NDSI was held in Houston, Texas in April 2005. The conference was sponsored by the University of Houston, the *IEEE Nanotechnology Council*, and the *National Science Foundations*. Selected papers will be published in *IEEE Transactions on Nanotechnology*.
3. Program committee member for Japanese Perpendicular Magnetic Recording Conference (PMRC2004, Sendai, Japan and PMRC2007, Tokyo, Japan), The Magnetic Recording Conference (TMRC2004, Boulder, CO and TMRC2005, San Jose, CA), IEEE-Nano, Hong Kong, August 2007,

IEEE-Nano, Arlington, TX 2008.

4. Panel reviewer for National Institutes of Health:
   - Environmental Sensor for Personal Exposure Assessment (2007);
5. Panel reviewer for National Science Foundation. Participated in the following programs:
   - Sensors and Sensor Networks; Sensors and Sensor Systems (2003);
   - Partnership in Research and Education on Materials (2003);
   - Organic Electronics; Integrative Graduate Education and Research Traineeship (2004);
   - NIRT; NER; PREM Site Visit; Integrative, Hybrid & Complex Systems (2005);
   - Electronics, Photonics, and Device Technologies; IHCS; NIRT; IGERT; GK-12 (2006);
   - IGERT (2007).
6. **Member of IEEE Magnetics Society Administrative Committee.**
7. **IEEE Magnetics Society Representative to IEEE Nanotechnology Council**, IEEE Nano 2007, Hong Kong SAR, China.
8. **Senior Member of IEEE**, Member of Materials Research Society and Electrochemical Society.
9. **Associate Member**, Information Storage Industry Consortium.

C. Editorial Work

1. **Associate Editor, IEEE Transactions on Nanotechnology.**
2. **Editor-in-Chief, Journal of Nanotechnology, Science and Applications**
3. **Guest Editor, Nanotechnology, Volume 15, 2004.**
4. **Guest Editor, IEEE Transactions on Magnetics, NAPMRC issue, Volume 41, 2005.**
5. **Publicatio**n Chair, IEEE Transactions on Magnetics, NAPMRC issues: Volume 38, 2002 and Volume 39, 2003.
6. **Reviewer for Technical Journals**
   - Applied Physics Letters
   - Journal of Applied Physics
   - Nanotechnology
   - IEEE Transactions on Magnetics
   - IEEE Transactions on Nanotechnology
   - Journal of Physics D
   - Diamond and Diamond Related Materials
   - ECS Transactions
   - Nano Letters