

Mani Mina

Departments of

Industrial Design

Electrical & Computer Engineering

341 Durham Hall
Iowa State University
Ames, Iowa 50011

Personal History and Professional Experience

Education

- 1989 Ph.D., Electrical Engineering, Iowa State University
Thesis: Auger Effect on the Output Power of InGaAsP Lasers
- 1987 M.S., Electrical Engineering, Iowa State University
Thesis: Temperature Sensitivity at Threshold in InGaAsP DH Lasers
- 1985 M.S., Physics, Iowa State University
Thesis: Study of Transmission, Reflection, and Absorption through Multi-Pane Glasses, for Solar Radiation
- 1982 B.S., Physics, Iowa State University

Academic Appointments

- 2017-Present Associate Professor **Industrial Design** and Electrical and Computer Engineering, Iowa State University
- 2006 – 2016: Senior Lecturer in Electrical and Computer Engineering, Department of Electrical and Computer Engineering, Iowa State University
- 1998 – 2005: Adjunct Assistant Professor Member of Graduate Faculty, Department of Electrical and Computer Engineering, Iowa State University
- 1995-1998: Collaborator Assistant Professor Member of Graduate Faculty, Department of Electrical and Computer Engineering, Iowa State University
- 1991 – 1995: Adjunct Assistant Professor Member of Graduate Faculty, Department of Electrical and Computer Engineering, Iowa State University

Other Professional Experience

- 2001 (Jan–Aug): Senior Director of Ultrasonic Design and Development, ETREMA Products, Inc. Ames, Iowa
- 1998 – 2001: Director of Business Development, Technology Resource Group, Des Moines, Iowa

- 1995 – 1998: President and COO, Amtak Inc., Ames, Iowa (Subsidiary of Takano Company Japan) Designing novel and portable testing equipment for Nondestructive Evacuation applications
- 1989 – 1995: Research Consultant & Member Board of Directors, Advance Medical Systems, Inc., Des Moines, Iowa Designing artificial Heart and support systems
- 1989 – 1991: Research Scientist, Microelectronics Research Center, Ames, Iowa Designing optical and electro optical devices
- 1989 – 1991: Temporary Assistant Professor in Electrical Engineering, Iowa State University, Ames, Iowa
- 1985 – 1989: Lecturer in Electrical Engineering, Iowa State University, Ames, Iowa
- 1983 – 1984: Research Assistant in Theoretical Solid State Physics, Ames Laboratory, Ames, Iowa
- 1982 – 1985: Teaching Assistant in Physics, Iowa State University, Ames, Iowa

Honors, Recognitions, and Outstanding Achievements

1. Boast-Nilsson Educational Impact Award, Department of Electrical and Computer Engineering 2017-2018.
2. ASEE (American Society for Engineering Education) ECE (Electrical and Computer Engineering) Meritorious award summer 2018.
3. Morimoto, Ryohei, Taichi Goto, Takunori Taira, John Pritchard, **Mani Mina**, Hiroyuki Takagi, Yuichi Nakamura, Pang Boey Lim, Hironaga Uchida, and Mitsuteru Inoue. "Randomly polarised beam produced by magnetooptically Q-switched laser." *Scientific reports* 7, no. 1 (2017): 15398 doi:[10.1038/s41598-017-15826-3](https://doi.org/10.1038/s41598-017-15826-3)
4. Morimoto, Ryohei, Taichi Goto, John Pritchard, Hiroyuki Takagi, Yuichi Nakamura, Pang Boey Lim, Hironaga Uchida, **Mani Mina**, Takunori Taira, and Mitsuteru Inoue. "Magnetic domains driving a Q-switched laser." *Scientific reports* 6 (2016): 38679. doi:10.1038/srep38679
5. Invited as academic expert to participate in NAE/ASEE TUEE discussion and development, March 2017 (TUEE: Transforming Undergraduate Engineering Education Phase III)
6. Participate in NETI II National Effective Teaching Institute October 2017
7. Selected/invited (NAE) Faculty 2014, for Innovation in Engineering Education. National Academy of Engineers, 2014 Frontier of Engineering Education (FOEE) The sixth FOEE Symposium, October 26-29 in Irvine, CA. <https://www.naefoee.org/symposia/10179/12218/6076.aspx>
8. Faculty Member of the year, Engineering Student Council of Iowa State University, 2015.
9. Faculty of the year Greek Housing, Iowa State University, 2015.
10. Warren B. Boast Undergraduate Teaching Award, Department of Electrical and Computer Engineering, Iowa State University, 2014.
11. Mervin S. Coover Distinguish Service Award, Department of Electrical and Computer Engineering, Iowa State University, 2010.
12. VEISHEA Faculty Recognition Award, Iowa State University, 2009.
13. Best Paper Award for ASEE 2008 Annual Conference, Iowa State University, 2008.
14. Warren B. Boast Undergraduate Teaching Award, Department of Electrical and Computer Engineering, Iowa State University, 200.8

15. IEEE/ISU Student Council Faculty Award for excellence in providing guidance, Iowa State University, 2008.
16. VEISHEA Faculty of the Year Award, Iowa State University, 2007.
17. Faculty of the Year (Impact Award), Government of Student Body (GSB) and Student Union Board (SUB), Ames, Iowa, 2006.
18. Greek Housing Faculty of the Year Award, Iowa State University, Ames, Iowa, 2005.
19. VEISHA Faculty of the year, LINC (Leaders Inspiring Connections, VEISHEA 2005), Engineering Faculty of the Year Award, 2005.
20. Warren B. Boast Undergraduate Teaching Award, Department of Electrical and Computer Engineering, Iowa State University, 2004.
21. The Best Innovation for Learning Community, Center of Teaching Excellence, Iowa State University, 2004.
22. E-week Faculty Best Faculty Award, Iowa State University, Ames Iowa, 2004.
23. Greek Housing Faculty of the Year Award, Iowa State University, Ames, Iowa, 2004.
24. Student Council, EE/CprE Faculty of the Year Award, Iowa State University, Ames, Iowa, 2004.
25. VEISHEA Faculty of the Year Award, Iowa State University, 2003.
26. Most Effective Instructor, Academic Success Week Award, Academic Success Center, Iowa State University, 2003.
27. Warren B. Boast Undergraduate Teaching Award, Department of Electrical and Computer Engineering, Iowa State University, 2002.
28. Superior Engineering Teacher Award, College of Engineering, Iowa State University, 2002.
29. Professor of the E-week 2002, Engineering student body, College of Engineering, 2002
30. Warren Boast Undergraduate Teaching Excellence Award, Department of Electrical and Computer Engineering, Iowa State University, 1999.
31. Honors Program Teaching Award, Iowa State University, 1999.
32. Outstanding Professor in Electrical Engineering, Engineering Council Award, 1992.
33. Iowa State University Research Excellence Award, Department of Electrical and Computer Engineering, Iowa State University, 1989.
34. Iowa State University Teaching Excellence Award, Department of Electrical and Computer Engineering, Iowa State University, 1987.
35. Richard G. Patrick Award for Outstanding Teaching, Department of Physics, Iowa State University 1985.
36. Best Teaching Assistant of the Year Award, Department of Physics, Iowa State University 1983.
37. Member of Graduate Faculty, Iowa State University since 1995.

Publications and Creative Works

Doctoral Thesis Title

“Auger Effect on the Output Power of InGaAsP Lasers,” 1989. Major Prof. Prof Chang Hsieh

Books Edited or Co-Edited (in print or accepted)

1. Bassett, Gregory, John Blake, Adam Carberry, Jerry Gravander, William Grimson, John Krupczak Jr, Mani Mina, and Donna Riley. "Philosophical Perspectives on Engineering and Technology Literacy, I." (2014).
2. Coordinator for the ASNT Handbook, Vol. 5, Electromagnetic Testing, ASNT Publications (2004).

Chapters in Books (in print or accepted)

1. Heywood, J., Keilson, S., Krawitz, A., Tobias, S., Trevelyan, J., Cheville, A., Krupczak, J., Siller, T., **Mina, M.**, Drew, D.E. and Sychov, S.V., 2017. Philosophical and Educational Perspectives on Engineering and Technological Literacy, IV. 2017.
3. **M. Mina** and I. Omidavar "The Relevance and Significance of Deweyan pragmatism for Engineering Education", in Philosophical and Educational Perspectives on Engineering and Technological Literacy, 2" 2015. Published by Technological and Engineering Literacy and Philosophy of Engineering (TELPhE), Division of American society of Engineering Education.
4. Introduction to Bassett, Gregory, John Blake, Adam Carberry, Jerry Gravander, William Grimson, John Krupczak Jr, **Mani Mina**, and Donna Riley. "Philosophical Perspectives on Engineering and Technology Literacy, 1" 2014. Published by Technological and Engineering Literacy and Philosophy of Engineering (TELPhE), Division of American society of Engineering Education.
5. J. Tioh*, **M. Mina**, R. J. Weber, A. K. Somani, "Fiber Optic Communications and Networks," in Instrumentation Engineers Handbook, Taylor and Francis, Boca Raton, FL, Vol 3., Ed. 4, 2010 (Chapters 5 and 6).
6. J. Tioh*, R. J. Weber, M. Mina, "Magneto-Optical Switches," in Optical Switches Materials and Design, Woodhead Publishing Ltd., Cambridge, UK, 2010 (Chapter 4).

Books with impact from my work

7. John Heywood "Empowering Professional Teaching in Engineering: *Sustaining the Scholarship of Teaching*", Morgan and Claypool 2018 ISBN: 9781681732930
This book was a result of a series of seminars and lectures conducted with my leadership with participation from faculty and student of Electrical and Computer Engineering, and industrial Design. The Acknowledgement shows this

8. John Heywood “Empowering Professional Teaching in Engineering: *Sustaining the Scholarship of Teaching*”, Morgan and Claypool 2018 ISBN: 9781681732930
This book was done by a collaboration between Prof. Heywood and I to create a meaning to engineering practice from the human need and experience. The book was first presented by ISU team John Pritchard and Mani Mina) and then Morgan and Claypool chose to print that. I have a foreword in this book explaining where it comes from and we are mentioned in many chapters. Also some of our students’ and my reflections appear in the book.

Articles in Journals (published or accepted)

1. Gaunkar, Neelam Prabhu, Jayaprakash Selvaraj, Wei-Shen Theh, Robert Weber, and **Mani Mina**. "Pulsed magnetic field generation suited for low-field unilateral nuclear magnetic resonance systems." *AIP Advances* 8, no. 5 (2018): 056814. <https://doi.org/10.1063/1.5007784>
2. Prabhu Gaunkar, Neelam, **Mani Mina**, and David Jiles. "Demonstration of low-field NMR detection in static fields produced by unilateral magnets." *Bulletin of the American Physical Society* (2018).
3. Morimoto, Ryohei, Taichi Goto, Takunori Taira, John Pritchard, **Mani Mina**, Hiroyuki Takagi, Yuichi Nakamura, Pang Boey Lim, Hironaga Uchida, and Mitsuteru Inoue. "Randomly polarised beam produced by magneto-optically Q-switched laser." *Scientific reports* 7, no. 1 (2017): 15398 doi:[10.1038/s41598-017-15826-3](https://doi.org/10.1038/s41598-017-15826-3)
4. Selvaraj, Jayaprakash, Wei Shen Theh, Neelam Prabhu Gaunkar, Jiayu Hong, Leif H. Bauer, and **Mani Mina**. "Enhancement for High-Speed Switching of Magneto-Optic Fiber-Based Routing Using Single Magnetizing Coil." *IEEE Transactions on Magnetics* 53, no. 11 (2017): 1-4. doi: [10.1109/TMAG.2017.2712155](https://doi.org/10.1109/TMAG.2017.2712155)
5. Gaunkar, Neelam Prabhu, Jayaprakash Selvaraj, Leif Bauer, **Mani Mina**, Robert Weber, and David Jiles. "Design and Experimental Implementation of a Low Frequency Pulsed Magnetic Field Generator." *IEEE Transactions on Magnetics* 53, no. 11 (2017): 1-4. doi: [10.1109/TMAG.2017.2704081](https://doi.org/10.1109/TMAG.2017.2704081)
6. Prabhu Gaunkar, N., I. Bulu, Y. Q. Song, Mani Mina, and David C. Jiles. "Detection and estimation of magnetization induced resonances in unilateral

- nuclear magnetic resonance (NMR) sensors." *AIP Advances* 7, no. 5 (2017): 056634. <https://doi.org/10.1063/1.4974527>
7. Gaunkar, N. Prabhu, M. Mina, R. Weber, and D. Jiles. "Mapping and estimating magnetic field variations due to a one-sided magnet." In *Magnetics Conference (INTERMAG), 2017 IEEE International*, pp. 1-1. IEEE, 2017. doi: [10.1109/INTMAG.2017.8007962](https://doi.org/10.1109/INTMAG.2017.8007962)
 8. Gaunkar, N. P., Weber, R., Mina, M., & Jiles, D. (2017, April). Design and implementation of a low frequency pulsed magnetic field generator applicable to unilateral NMR. In *Magnetics Conference (INTERMAG), 2017 IEEE International*(pp. 1-1). IEEE. DOI: [10.1109/INTMAG.2017.8007647](https://doi.org/10.1109/INTMAG.2017.8007647)
 9. Bauer, L., Gaunkar, N. P., Mina, M., & Weber, R. (2017, April). Experimental demonstrations of unpinning domains in a saturated bismuth-substituted iron garnet. In *Magnetics Conference (INTERMAG), 2017 IEEE International* (pp. 1-1). IEEE. DOI: [10.1109/INTMAG.2017.8007815](https://doi.org/10.1109/INTMAG.2017.8007815)
 10. Morimoto, Ryohei, Taichi Goto, John Pritchard, Hiroyuki Takagi, Yuichi Nakamura, Pang Boey Lim, Hironaga Uchida, Mani Mina, Takunori Taira, and Mitsuteru Inoue. "Magnetic domains driving a Q-switched laser." *Scientific reports* 6 (2016): 38679. doi:10.1038/srep38679
 11. Goto, T., Morimoto, R., Pritchard*, J.W., **Mina, M.**, Takagi, H., Nakamura, Y., Lim, P.B., Taira, T. and Inoue, M., 2016. Magneto-optical Q-switching using magnetic garnet film with micromagnetic domains. *Optics Express*, 24(16), pp.17635-17643.
 12. Goto, Taichi, Ryohei Morimoto, John Pritchard*, Hiroyuki Takagi, Yuichi Nakamura, **Mani Mina**, Takunori Taira, and Mitsuteru Inoue. "Actively controlled Q-switched laser using domains in magneto-optical garnet film." In *Advanced Solid State Lasers*, pp. ATh4A-7. Optical Society of America, 2016.
 13. J. Heywood, **M. Mina**, S. Frezza "A Review of: Philosophy and Engineering: Reflections on Practice, Principles and Process," *IEEE Transactions on Education*, Vol. 58, Issue 2, May 2016 Invited Book Review, to be published.
 14. N. Prabhu Gaunkar, I. C. Nlebedim, R. L. Hadimani, I. Bulu, Y. Q. Song, **M. Mina**, and D. C. Jiles. "Broadband analysis of response from magnetic cores used in inductive sensors for pulsed nuclear magnetic resonance applications" *IEEE Transactions on Magnetics*, May 2016 .
 15. J. Tioh*, **M. Mina**, R. J. Weber*, "All-Optical Switching in Transparent Networks: Challenges and New Implementations," EDN Network, Sep. 2015.
 16. Bouda, N. *, Pritchard, J. W. *, Weber, R. J., **Mina, M.** "Methods of high current magnetic field generator for transcranial magnetic stimulation application," *Journal of Applied Physics*, 117, 17B319 (2015).
 17. N. Prabhu Gaunkar, N. R. Y. Bouda, I. C. Nlebedim, R. L. Hadimani, I. Bulu, K. Ganesan, Y. Q. Song, **M. Mina**, and D. C. Jiles. "Analysis of ringing effects due to magnetic core materials in pulsed nuclear magnetic resonance circuits." *Journal of Applied Physics* 117, no. 17 (2015): 17E508

18. Bouda, N. Robert*, **Mani Mina**, and Robert J. Weber. "Methods of high current magnetic field generator for transcranial magnetic stimulation application" *Magnetics, IEEE Transactions on* 50.11 (2014): 1-4.
19. Pritchard, J. W. *, **Mani Mina**, and Prabesh Dulal. "Demonstration of Magneto-optic Latching Router for All-Optical Networking Applications." *Magnetics, IEEE Transactions on* 50.11 (2014): 1-4. BEST POSTER AWARD
20. Pritchard, J. W. *, **Mina, M.**, and Dulal, P., "Demonstration of Magneto-Optic Latching Router for All-Optical Networking Applications," *IEEE Transactions on Magnetics*, doi: 10.1109/TMAG.2014.2326162, to be published in 2014.
21. Pritchard, J. W. * and **Mina, M.**, "Magneto-Optic Switch With Resonator Configuration," *IEEE Magnetics Letters*, Vol. 4, pp. 6000104, 2013.
22. Pritchard, J. W. *, **Mina, M.**, and Weber, R. J., "Magnetic Field Generator Design for Magneto-Optic Switching Applications," *IEEE Transactions on Magnetics*, vol. 49, no. 7, pp. 4242-4244, 2013.
23. Pritchard, J. W. *, **Mina, M.**, and Weber, R. J., and Kemmet, S. *, "Low Power Field Generation for Magneto-Optic Fiber-Based Interferometric Switches," *Journal of Applied Physics*, vol. 111, pp. 07A941-1 - 07A941-3, 2012.
24. Pritchard, J. W. *, **Mina, M.**, and Weber, R. J., "Improved Switching for Magneto-Optic Fiber-Based Technologies," *IEEE Transactions on Magnetics*, vol. 48, pp. 3772-3775, 2012.
25. Pritchard, J. W. * and **Mina, M.**, "MO Switching in Fiber-Optic Systems," *Magnetics Technologies International*, 2012.
26. J. W. Pritchard* and **M. Mina**, "The Mighty Magnetic Field: Large and Small Scale Perspectives From Fast and Small to Large and High Energy Pulsing," *Magnetics Technologies International Magazine*, 2013.
27. J. W. Pritchard*, **M. Mina** "Magneto-optic Switching in Fiber Optic Systems," *Magnetic technology International*, London, pp79-81, 2012. (invited paper)
28. J.W. Pritchard*, **M. Mina**, R. J. Weber, "Improved Switching for Magneto-Optic Fiber-Based Technologies", *IEEE Transn. Magn.* Vol 48, Iss. 11, 2012, pp. 3772-3775.
29. J. Tioh*, S. Oster*, **M. Mina**, R. J. Weber, "Optimization of Magneto-optic Device by Low Switching Field Domains," *ISRN Optics*, vol. 2012, pp. 1-5, Jan. 2012.
30. R. Gerdes*, **M. Mina**, S. Russell, T. Daniels "Physical-Layer Identification of Wired Ethernet Devices" *IEEE Trans. On Information Forensics and Security*, Vol. 7, Issue , 2012, pp. 1339-1353.
31. J. Pritchard*, **M. Mina**, R. J. Weber, and S. Kemmet* "Low power field generation for magneto-optic fiber-based interferometric switches," *Journal of Applied Physics*, Volume: 111 , Issue: 7, 2012 , pp. 07A941-1-07A941-3.

32. J. Tioh*, N. Vander Horn, **M. Mina**, R. J. Weber, and A. K. Somani, "Reconfigurable high-speed platform: Shifting the paradigm in education, research, and engineering," *IEEE Communications Magazine*, Volume: 50 , Issue: 1, 2012 , pp.: 153 - 159.
33. J. Tioh*, R. J. Weber, and **M. Mina**, "Improved formulation of Faraday rotation characterization," *Journal of Applied Physics*, Volume: 109 , Issue: 7, 2011 , pp.07E334 - 07E334-3.
34. S. Kemmet*, **M. Mina**, and Weber, "Magnetic pulse generation for magneto-optic switching," *Journal of Applied Physics*, Volume: 109 , Issue: 7, 2011 , pp. 07E333 - 07E333-3.
35. J. Tioh*, **M. Mina**, and R. J. Weber, "All optical integrated switch utilizing Faraday rotation," *IEEE Transactions on Magnetics*, Vol. 46, No. 6, pp. 2474–2477, 2010.
36. S. Kemmet*, **M. Mina**, and R. J. Weber, "Current-controlled, high-speed magneto-optic switching," *IEEE Transactions on Magnetics*, Vol. 46, No. 6, pp. 1829–1839, 2010.
37. S. Kemmet*, **M. Mina**, and R. J. Weber, "Fiber-based magneto-optic Sagnac optical modulator," *IEEE Transactions on Magnetics*, Vol. 45, No. 10, pp.4892–4894, Oct. 2009.
38. S. Kemmet*, **M. Mina**, and R. Weber, "Sagnac interferometric switch utilizing Faraday rotation," *Journal of Applied Physics*, Vol. 105, No. 7, pp. 07E702–07E702-3, Apr. 2009.
39. J. Tioh*, **M. Mina**, and R. J. Weber, "Field coil for magneto-optic switching: Capacitance considerations," *IEEE Transactions on Magnetics*, Vol. 44, No. 11, Nov. 2008.
40. J. Tioh, **M. Mina**, and R. J. Weber, "Minimum inductance coils for magneto-optic switching," in *53rd Annual Conference on Magnetism and Magnetic Materials*, Austin, TX, Nov. 2008.
41. Mehrdad Razavi, Brent Eaton, Sergio Paradiso, **M. Mina**, Anthal Hudetz, and Lizann Bolinger, "The source of low-frequency fluctuations in fMRI signal," *Journal of Magnetic Resonance Imaging*, Vol. 27, No. 4, pp. 891–897, Mar. 2008.
42. R. Gerdes*, N. Anderson*, and **M. Mina**, "Field solutions of layered superconductors: A magnetic vector potential approach," *Material Evaluation*, Vol. 66, No. 3, Mar.2008 (Fellowship award paper)
43. J. Tioh*; **M. Mina**, and R. J. Weber, "Magnetically controlled switches for optoelectronics networking: The problem, available technology, new implementations," *IEEE Transactions on Magnetics*, Vol. 43, No. 6, pp. 2698–2700, Jun. 2007.
44. R. Bahuguna*, **M. Mina**, and R. J. Weber, "Mach–Zehnder interferometric switch utilizing Faraday rotation," *IEEE Transactions on Magnetics*, Vol. 43, No. 10, pp. 2680–2682, Jun 2007.
45. R. Bahuguna*, **M. Mina**, J.-W. Tioh*, and R. J. Weber, "Magneto-optic-based fiber switch for optical communications," *IEEE Transactions on Magnetics*, Vol. 42, No. 6, pp. 3099–3101, Oct. 2006.

46. **M. Mina**, R. M. Gerdes*, "The pedantic† 21st century freshman engineering student," *European journal of engineering education* 31 (5), 509-516, 2006.
47. N. E. Anderson*, **M. Mina**, and A. A. B. Broujeny, "On the utilization of magnetic vector potential for a description of a superconducting transmission line," *IEEE Transactions on applied Superconductivity*, Vol. 16, No. 3, pp. 1913–1917, Sept. 2006.
48. **M. Mina**, T. Daniels, S. Russell, and R. Gerdes*, "Intrusion detection, performance assurance, and system maintenance: A new paradigm in computer security," *Material Evaluation*, Vol. 63, No. 12, Dec 2005. (Invited paper)
49. N. A. VanderHorn, S. Balasubramanian, **M. Mina**, and A. K. Somani, "Light-trail test bed for IP-centric applications," *IEEE Communications Magazine*, Vol. 43, No. 8, pp. S5–10, Aug. 2005.
50. A. K. Somani, **M. Mina**, and L. Li, "On trading wavelengths with fibers: A cost-performance based study," *IEEE/ACM Transactions on Networking*, Vol. 12, No. 5, pp. 955–951, Oct. 2004.
51. C. C. H. Lo, D. C. Jiles, **M. Mina**, M. J. Johnson, B. Koepke, L. C. Kerdus, and J. Leib, "Evaluation of the effects of pulsed-magnetic field treatment on magnetic materials," *Material Evaluation, American Society of Nondestructive Testing*, Vol. 60, No. 8, pp 971–976, Aug. 2002.
52. Shin Chuen Chan; **M. Mina**, S. S. Udpa, L. Udpa, L., W. Lord, "Finite element analysis of multilevel acoustic Fresnel lenses," *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, Vol.43, No. 4, pp. 670–677, Jul. 1996
53. Safaeinili and **M. Mina**, "On the analytical equivalence of electromagnetic fields solutions from a known source distribution," *IEEE Transaction on Electromagnetic Compatibility*, Vol. 33, No. 1, pp. 69–71, Feb. 1991.

Formally Invited Technical Papers, Lectures, and Invited Conference Presentations

Invited articles/papers

1. **Mani Mina** “Invited cover” Magnetics Technologies International (MTI), 2016.
2. Pritchard, J. * W. and **Mina, M.**, “Magneto-Optic Router on a Chip,” Magnetics Technologies International (MTI), 2016.
3. **Mani Mina** “Invited cover” Magnetics Technologies International (MTI), 2014.
4. Pritchard, J. * W. and **Mina, M.**, “Communicating with Magnetism,” Magnetics Technologies International (MTI), 2014.
5. **M. Mina** “Guest writer Faculty View on Magnetism” MTI, Magnetics Technology International Magazine 2013.
6. J. W. Pritchard* and **M. Mina**, “The Mighty Magnetic Field: Large and Small Scale Perspectives From Fast and Small to Large and High Energy Pulsing,” Magnetics Technologies International Magazine, Invited paper, to be published in 2013.
7. J. W. Pritchard*, **M. Mina** “Magneto-optic Switching in Fiber Optic Systems,” Magnetic technology International, London, pp. 79-81, 2012.
8. “Intrusion detection, performance assurance, and system maintenance: A new paradigm in computer security,” **M. Mina**, T. Daniels, S. Russell, and R. Gerdes, Materials Evaluation, Vol. 63, No.12, Dec 2005.
9. A. K. Somani and **M. Mina**, “Challenges and issues in design of 2nd generation optical networks,” Invited talk at the 6th World MultiConference on Systemic and Cybernetics and Information, Orlando, FL, Jul. 2002.
10. **M. Mina** and A. K. Somani, “On physical considerations in design of wavelength grooming optical networks,” in Proceedings of 40th Annual Allerton Conference on Communication, Control, and Computing, Monticello, IL, Oct. 2002.
11. **M. Mina** and A. K. Somani, “Wavelength conversion technology and the impact on future optical networks,” in 39th Annual Allerton Conference on Communication, Control, and Computing, Monticello, IL, Oct. 2001.
12. A. K. Somani and **M. Mina**, “On trading wavelengths with fibers: A cost-performance based study,” in 38th Annual Allerton Conference on Communication, Control, and Computing, Monticello, IL, Oct.2000.

Other invited papers

1. "Networking, a new perspective on what it is, who does it benefit," AISO, association of International Students Organization, March 13th-15th 2015.
2. "Back to the basics: Fundamental strategies for engineering education," M. Mina, published in the academic bookshelf, Journal of Engineering Education, Jul 2003.
3. "So, Where is the real world?" M. Mina, The Interface, IEEE, No. 1, pp. 10-12, Apr 2004. (A new version of the article was adopted by national IEEE publication.)
4. "What makes a class GOOD?," M. Mina, IEEE Student Relay, ISU chapter, Dec 2002.
5. "So, where is the real world?," M. Mina, IEEE Student Relay, ISU chapter, Oct 2002.
6. "Are you being educated?," M. Mina, IEEE Student Relay, ISU chapter, May 2002.
7. "It is almost the next century: Do you know what your computers will be?," M. Mina, The Inside Line, Vol. 12, No. 1, pp. 10, Jan 1999.
8. "Educating the public: A better way to the 21st century," M. Mina, Materials Evaluation, Vol. 55, No. 8, pp. 888, Aug 1997.
9. "NDT grows in the food industry," M. Mina, Materials Evaluation, Vol. 55, No. 7, pp. 802, Jul 1997.

Selected Invited Lectures/Panels

10. "What is Mastery?," Marston invited lecture series Lectures Fall 2017, Iowa State University Mani Mina.
11. "Designing high power ultrasonic systems: Magnetostrictive approach," M. Mina, Workshop on High Power Ultrasonic for Metallurgy and Manufacturing, Edison Joining institute (EWI), Columbus Ohio, Jun 12-13, 2001
12. "James C. Maxwell: Then and Now," M. Mina, Invited speaker for Pi Mu Epsilon (Mathematics honor society), Carver Hall, Ames Chapter, Ames, Iowa, Feb 17, 2001.
13. "Entrepreneurship, the bridge between the university and private sector," M. Mina, Invited speaker for ISU Papajohn Center, Ames, Iowa, Jan 24, 2002.
14. "All optical networks: What are they? Are they really feasible? Do they have any security issues?," M. Mina, Invited talk for Ames Laboratory Magnetism group, special seminar on Electromagnetism, Ames, Iowa, Feb 1, 2001.
15. "It is 21st century, do you know who your students are?," M. Mina, Invited speaker for Iowa State University Security Conference, Gateway Center, Ames, Iowa, Jul 2005.
16. "So, you want to be a leader?," M. Mina, Invited speaker for ISU summer leadership program, Ames, Iowa, Jun 2005
17. "The challenges for EE/CprE: Leadership, technology, and progress," M. Mina, Keynote speaker for HKN annual membership meeting, Ames, Iowa, Oct 2003.
18. "On engineering responsibility and leadership," M. Mina, Keynote speaker for Tau Beta Pi annual membership meeting, Memorial Union, Ames, Iowa, Apr 2003.
19. "The way we are/were, a leadership approach to growth," M. Mina, 27th Annual Martial Arts Award Programs (PAK) family, Memorial Union, Ames, Iowa, Feb 16, 2001.

Bulletins, Reports, or Conference Proceedings That Have Undergone Stringent Editorial Review by Peers (in print or accepted).

1. Abdulla, Hesham, Kasthurirangan Gopalakrishnan, Halil Ceylan, Sunghwan Kim, **Mani Mina**, Peter C. Taylor, and Kristen S. Cetin. *Development of a Finite Element Model for Electrically Conductive Concrete Heated Pavements*. No. 17-05389. 2017.
2. Rover, D., **M. Mina**, J. Zambreno, D. Jacobson, P. Jones, A. Khokhar, L. Larson, S. McKilligan, S. Rodriguez, and M. Shelley. "Riding the Wave of Change in Electrical and Computer Engineering." In *2017 ASEE Annual Conference & Exposition*. 2017.
3. Cross, Kelly, Marina Miletic, Tiago Forin, **Mani Mina**, Amit Jain, Elsa Villa, Lisa McNair, and Ella L. Ingram. "Panel: Influencing culture and curriculum via revolution." In *2017 IEEE Frontiers in Education Conference (FIE)*, pp. 1-8. IEEE, 2017.
4. Tioh, Jin-Ning, **Mani Mina**, and Douglas W. Jacobson. "Cyber security training a survey of serious games in cyber security." *2017 IEEE Frontiers in Education Conference (FIE)*. IEEE, 2017.
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6. Paepcke-Hjeltness, Verena, **Mani Mina**, and Aziza Cyamani. "Sketchnoting: A new approach to developing visual communication ability, improving critical thinking and creative confidence for engineering and design students." *2017 IEEE Frontiers in Education Conference (FIE)*. IEEE, 2017.
7. Gaunkar, Neelam Prabhu, Melissa Rands, and **Mani Mina**. "Variations in student learning in an inquiry-based freshmen electrical engineering course." *2017 IEEE Frontiers in Education Conference (FIE)*. IEEE, 2017.
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10. Frezza, S., Krupczak, J., **Mina, M.** "Special Session on Design Metaphors: Rethinking the Vocabulary of Design Education," IEEE Frontiers of Education (FIE2015) El Paso TX, Oct. 21-24, 2015.
11. Tioh, J-N, **Mina, M.** "Digital Defenders-Computer Security Literacy via Game-Based Learning," IEEE Frontiers of Education (FIE2015) El Paso TX, Oct. 21-24, 2015.
12. **Mani Mina** "Applications of Reflective Thinking Exercises in both Technological Literacy and Standard Engineering Courses," American Society for Engineering Education (ASEE) Annual Conference, Jun.14-17 Seattle, WA 2015. Paper ID #11681
13. John Heywood and **Mani Mina** "The Role of Transdisciplinary Studies in the reform of the Engineering Curriculum: A Case Study," American Society for

- Engineering Education (ASEE) Annual Conference, Jun.14-17 Seattle, WA 2015.
Paper ID #11678
14. Krupczak, J. and **Mani M.** “Work in Progress: An Approach to Engineering Literacy Emphasizing Components, Functions, and Systems,” American Society for Engineering Education (ASEE) Annual Conference, Jun.14-17 Seattle, WA 2015.
Paper ID #12766
 15. Frezza, S. **Mina, M.** “Special Session: On Design & Failure: How Philosophy and belief impact Design Education,” IEEE Frontiers of Education (FIE2014), Madrid Spain, 24-26 Oct. 2014.
 16. **Mani Mina**, John Pritchard*, David Ringholz, Ladan Omidvar “Reflections and Discussions on the Essence and Philosophical Approaches to Lectures, Laboratories, and Studios from Engineering and Design Perspectives,” The Alliance for the Arts in Research Universities (a2ru) annual conference, Ames, Iowa Nov. 2014.
 17. Seda Yilmaz, **Mani Mina**, David Ringholz, Hale Selek, James Heise, Erdem Selek, “‘Designing’ Multi-Disciplinary Design Teaching” ” 2014 The Alliance for the Arts in Research Universities (a2ru), annual conference, Ames, Iowa Nov. 2014.
 18. **M. Mina**, “Liberating Engineering education: Engineering education and pragmatism,” FIE’013Frontiers of Education annual conference, Oklahoma City, Oklahoma, Oct. 22-23, 2013.
 19. Pritchard, J*, **Mina, M.** “Dynamic Image of an Engineer,” FIE’013Frontiers of Education annual conference, Oklahoma City, Oklahoma, Oct. 22-23, 2013.
 20. **Mina, M.** , Ringholz, D. “Integrating design and bridging activities of the engineering and the design college: Merging language cultures, creativities, and perspectives,” FIE’013, Frontiers of Education annual conference, Oklahoma City, Oklahoma, Oct. 22-23, 2013.
 21. Krupczak, J, **Mina, M.** “Gains in Engineering-Related Skills Achieved by Students in Technological and Engineering Literacy Minors,” American Society for Engineering Education (ASEE) annual conference, Atlanta, GA, Jun. 23-26, 2013.
 22. **Mina, M.**, Omidvar, I. “Toward more pragmatic engineering classes: Transformation from traditional to Deweyan classes in technological literacy and competency approaches,” American Society for Engineering Education (ASEE) annual conference, Atlanta, GA, Jun. 23-26, 2013.
 23. Pritchard, J. W., **Mina, M.** “Modern Embedded Systems as a Platform for Problem Solving in Freshman Engineering: What is the Best Option?” American Society for Engineering Education (ASEE) annual conference, Atlanta, GA, Jun. 23-26, 2013.
 24. **Mina, M.** Invited Panel participant “Experts views on Philosophy of Engineering,”American Society for Engineering Education (ASEE) annual conference, Atlanta, GA, Jun. 23-26, 2013.
 25. Korte, R. Krupczak, J, **Mina, M.**, Grimson, W. “Workshop: What were we thinking? Critically examining our beliefs the process and goals of engineering and engineering education,” IEEE Frontiers of education(FIE), Seattle, WA, Oct. 3-6, 2012.
 26. Omidvar, I, **Mina, M.** “Engineering Education and Pragmatism: Imagining an undergraduate engineering course based on the educational philosophy of John Dewey,” IEEE Frontiers of education(FIE), Seattle, WA, Oct. 3-6, 2012.
 27. Pritchard, J. W*., **Mina M.**, Moore, A.” A comprehensive approach for mapping student’s Progress: Assessing Student Progress in Freshman engineering,” IEEE Frontiers of education(FIE), Seattle, WA, Oct. 3-6, 2012.

28. John W Pritchard* and **Mani Mina** “Hands-on, Discovery, Critical Thinking, and Freshman Engineering,” 119th annual ASEE conference, San Antonio, Texas, Jun.10-13, 2012.
29. John Krupczak , John W. Blake, Kate A. Disney, Carl O. Hilgarth, Randy Libros, **Mani Mina**, and Steven R. Walk , “Defining Engineering and Technological Literacy,” 119th annual ASEE conference, San Antonio, Texas, Jun.10-13, 2012.
30. John Krupczak, **Mani Mina**, Robert J. Gustafson, James F. Young, and Scott VanderStoep, “Minors as a Means of Developing Technological and Engineering Literacy for Non-engineers,” 119th annual ASEE conference, San Antonio, Texas, Jun.10-13, 2012.
31. Zachary Foltz*, Amanpreet Kaur*, William Henry Tushaus*, Christopher Sears Mikelson*, Brian Vincent Skalak*, and **Mani Mina** “The United States Energy Policy: As Determined By Non-experts,” 119th annual ASEE conference, San Antonio, Texas, Jun.10-13, 2012.
32. **Mani Mina**, Diane T. Rover and Mack Shelley “Work in progress - preparation creating effective faculty of engineering: a technological literacy approach,” 41st IEEE Frontiers in Education, FIE, Rapid City, SD, Oct. 2011.
33. **Mani Mina**, Eugene Rutz, and Iraj Omidvar, “Master Apprentice: Is this a Working Model for Engineering Schools? “ 2011ASEE Annual Conference and Exposition, Vancouver, CA, Jun. 2011.
34. Robert J. Gustafson, John Krupczak, James F. Young , and **Mani Mina** “Educational Objectives and Outcomes for Technological Literacy Programs at College Level” 2011ASEE Annual Conference and Exposition, Vancouver, CA, Jun. 2011.
35. John Krupczak, Lauren April , and **Mani Mina** “Adaptations of Concept Mapping for Technological Literacy Courses”, 2011ASEE Annual Conference and Exposition, Vancouver, CA, Jun. 2011.
36. J. Tioh, **M. Mina**, and R. J. Weber, “On the inductance of field generating coils,” in 52nd Magnetism and Magnetic Materials Conference, Tampa, FL, Nov. 2007.
37. Ryan M. Gerdes*, Thomas E. Daniels, **M. Mina**, and Steve F. Russell, “Device identification via analog signal fingerprinting: A matched filter approach,” in Proceedings of the 13th Annual Network and Distributed Systems Security Symposium, San Diego, CA, Feb. 2006.
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39. R. Bahuguna*, **M. Mina**, and R. J. Weber, “A novel all fiber magneto-optic on-off switch,” Proc. SPIE, Vol. 5907, 2005, pp. 590702.
40. A. K. Somani and **M. Mina**, “Challenges and issues in design of 2nd generation optical networks,” Invited talk at the 6th World Multi Conference on Systemic and Cybernetics and Information, Orlando, FL, Jul. 2002. (Invited paper)
41. **M. Mina** and A. K. Somani, “On physical considerations in design of wavelength grooming optical networks,” in Proceedings of 40th Annual Allerton Conference on Communication, Control, and Computing, Monticello, IL, Oct. 2002. (Invited paper)

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43. A. K. Somani and **M. Mina**, "On trading wavelengths with fibers: A cost-performance based study," in 38th Annual Allerton Conference on Communication, Control, and Computing, Monticello, IL, Oct. 2000. (Invited paper)
44. **M. Mina** and R. M. Gerdes*, "Work in progress - a class called "How Things Work?" and its role in technological literacy programs," in 39th IEEE Frontiers in Education, Washington DC, Oct. 2009, pp.1-2.
45. **M. Mina** and R. M. Gerdes*, "Impact of engineering: Designing a class for technological literacy disciplines," in Proceedings of American Society for Engineering Education Annual Conference, Austin, TX, June 2009.
46. **Mani Mina**, Iraj Omidwar, Sasha Kemmet*, Ryan Gerdes*, "Work in progress — the public image of an engineer" in 38th Annual Frontiers in Education, Saratoga, NY, Oct. 2008, pp. F3F-8-F3F-9.
47. **Mani Mina**, "Work in progress — the role of engineering colleges in technological literacy programs," in 38th Annual Frontiers in Education, Saratoga, NY, Oct. 2008, pp. F3F-25-F3F-26.
48. Jin-Wei Tioh*; R. Bahuguna*, N. VanderHorn, **M. Mina**, R. J. Weber, and A. K. Somani, "Reprogrammable high-speed platform: Bridging the gap between research, education, and engineering," in IEEE International Conference on Electro/Information Technology, Ames, IA, May 18-20, 2008, pp. 145-147.
49. R. M. Gerdes* and **M. Mina**, "Attempts at gauge determination in superconducting transmission lines," in IEEE International Conference on Electro/Information Technology, Ames, IA, May 18-20, 2008, pp. 112-116.
50. S. Kemmet*, G. Bonett, **M. Mina**, and R. J. Weber, "Fiber based measurements of domain characteristics in bismuth substituted iron garnets," in IEEE International Conference on Electro/Information Technology, Ames, IA, May 18-20, 2008, pp. 148-150.
51. E. Rutz, C. Collins, and **M. Mina**, "A guided tour of the future of education," in 2008 ASEE Annual Conference and Exposition, Pittsburgh, PA, Jul. 2008. (Test Paper Award for ASEE 2008)
52. **M. Mina**, "Minor in engineering studies, teaching technology to non-engineers, first results," in 2008 ASEE Annual Conference and Exposition, Pittsburgh, PA, Jul 2008.
53. S. Kemmet*, **M. Mina**, and R. Weber, "On system optimization for magneto-optic switching: Material considerations" IEEE International Magnetics Conference, Madrid, Spain, May 4-6, 2008.
54. J. Tioh*, **M. Mina**, and R. Weber, "Designing field generating coils for magneto-optics application: Inductor consideration," in IEEE International Magnetics Conference, Madrid, Spain, May 4-6, 2008.
55. R. Bahuguna*, **M. Mina**, and R.J. Weber, "Investigation of the application of magneto-optical materials in optical fiber based devices," in IEEE 52nd Magnetism and Magnetic Material Conference, Tampa, FL, Nov. 5-9, 2007.
56. J. Tioh*, **M. Mina**, and R. J. Weber, "On the inductance of field generating coils," IEEE 52nd Magnetism and Magnetic Material Conference, Tampa, FL, Nov. 5-9, 2007.

57. **Mani Mina**, Sasha Kemmet*, Ryan Gerdes*, “Work in progress - the next step for cubism in education: from abstract concepts to a classroom based implementation,” in 37th Annual Frontiers in Education, Milwaukee, WI, Oct. 10-13, 2007, pp. F3C-17–F3C-18.
58. **Mani Mina**, “Work in progress — minor in engineering studies: Teaching engineering concepts to non-engineering students,” in 37th Annual Frontiers in Education, Milwaukee, WI Oct. 10-13, 2007, pp. T3H-1–T3H-2.
59. T. Daniels, **M. Mina**, S. Russell, “ Short Paper: A Signal Fingerprinting Paradigm for General Physical Layer and Sensor Network Security and Assurance,” First International Conference on Security and Privacy for Emerging Areas in Communications Networks, 2005. SecureComm 2005, pp. 219-221.
60. R. Legg, M. Tekippe, K. S. Athreya, and **M. Mina**, “Solving multidimensional problems through a new perspective: The integration of design for sustainability and engineering education,” in ASEE Annual Conference and Exposition, Portland, OR, Jul. 2005.
61. E. A. Jackson* and **M. Mina**, “Designing a sustainable and dynamic problem-solving class for first-year engineering students,” in ASEE Annual Conference and Exposition, Portland, OR, Jul. 2005.
62. **M. Mina**, R. Weber, and R. Bahuguna*, “High speed systems engineering: measurement and testing,” ASEE Annual Conference and Exposition, Portland, OR, Jul. 2005.
63. **M. Mina**, R. Weber, A. K Somani, N. VanderHorn, and R. Bahuguna*, “High speed systems engineering: A new approach in electrical and computer engineering,” in ASEE Annual Conference and Exposition, Portland, OR, Jul. 2005.
64. **M. Mina**, Bentley, R. A. Oster, V. T. “Work in progress-the dance of change, the reality of college life and beyond” Frontiers in Education, 2005, FIE’05 Proceedings of 35th Annual Conference, 2005, PP. F3C-3
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66. **Mani Mina**, Iraj Omidvar, and Kathleen Knots*, “Learning to think critically to solve engineering problems: Revisiting John Dewey’s ideas for evaluating engineering education,” presented at the 2003 ASEE Annual Conference, Nashville, TN, Jun. 2003.
67. Norm Anderson* and **Mani Mina**, “A new approach in teaching electromagnetism: How to teach EM to all levels from freshman to graduate and advanced-level students,” presented at the 2003 ASEE Annual Conference, Nashville, TN, Jun. 2003.
68. **Mani Mina** and Iraj Omidvar, “The Road Less Traveled... and that has made all the difference,” workshop presented at the 2003 Annual Learning Community Institute, Iowa State University, Ames, Iowa, May. 2003.
69. **Mani Mina**, “Teaching technology to Web-affected computer-game-influenced students in the early 21st century: Hopes and despairs,” presented at the ASEE Midwest Fall Conference, Madison, WI, Oct. 2002.
70. **M. Mina**, “Making technological paradigm shifters: Myths and reality. Experiencing the Electrical Engineering Learning Community (EELC) at Iowa

- State University,” in Proceeding of the 2002 ASEE Annual Conference, Montreal, Canada, Jun. 2002.
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 76. S. Nath, **M. Mina**, and Y. Sun, “Design considerations for the remote field eddy current probe for inspecting ferromagnetic flat structures,” *Reviews of Progress in Quantitative Nondestructive Evaluation (QNDE)*, Vol. 16, eds. D. O. Thompson and D.E. Chimenti, New York: Plenum Press, 1997, pp.1061–1066.
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94. S. Phillips, K. Thornton, L. Barker, **M. Mina**, M. Airs, N. Debores, S. Grant, and R. Zeff, "Using magnostriuctive metal as a pump for biomedical applications," ASAIO Trans., Vol. 37, No. 3, pp. M509–10, July-Sept. 1991.
95. S. Phillips, M. Harry, K. Thornton, and **M. Mina**, "The use of 2-D Doppler imaging as a visualization technique in fluid flow," Iowa Academy of Science Meeting, Dubuque, IA, Spring 1991.
96. S. Phillips, K. Thornton, **M. Mina**, and S. Grant, "Magnostriuctive Metal as a Left Ventricular Assist Device," Iowa Academy of Science Meeting, Dubuque, IA, Spring 1991.
97. S. Phillips, K. Thornton, L. Baker, M. Mina, N. Bedore and S. Grant, "Utilizing Magnostriuctive Metal (Terfenol-D™) as a pump for biomedical application," presented at 37th Annual ASAIO Meeting, Chicago, IL, Apr. 27, 1991.

98. S. Phillips, L. Baker, K. Thornton, M. Mina, S. Grant, and N. Bedore, "The modified oscillating pump as a left ventricular assist device," presented at the 37th Annual ASAIO Meeting, Chicago, IL Apr. 1991.
99. S. Phillips, K. Thornton, L. Baker, M. Mina, and R. Zeff, "The wave propagation pump as a disposable heart lung machine," presented at the 37th Annual ASAIO Meeting, Chicago, IL, Apr. 1991

Notes:

- * Indicates graduate student

Patents, Disclosures and Technology Transfer Activities

Patent Awarded in 2015: **US 9006938 20150280433 A1** for “Apparatus and method for altering the properties of materials by processing through the application of a magnetic field”, David C. Jiles, Steffen Magnell, **Mani Mina**

Patent Awarded in 2015: **U.S. no. 9121371 B2** for “Apparatus and method for altering the properties of fuel by processing through the application of a magnetic field”, David C. Jiles, Steffen Magnell, **Mani Mina**

Patent Awarded in 2012 and then 2015: **U.S. no. 09110317 Cl. G02F for** “Advanced Drive Circuitry for Sagnac Interferometric Switch Utilizing Faraday Rotation”, S. Kemmet* , J. Tioh* , **M. Mina**, R. Weber

Patent Awarded in 2009, 2011: **U.S. no. 7,555,177 B1** for “All Fiber Magneto-Optic On-Off Switch for Networking Applications,” R. Bahaguna*, **M. Mina**, and R. Weber.

Patent awarded 2009: **U.S. no. 7,639,806 B2** for “Analog Fingerprinting Digital Devices Using Electromagnetic Characteristics of their Communications,” T. Daniels, **M. Mina**, and S. Russell.

ISURF #03654: Kemmet* S., Mina, M., and Weber R. , “Sagnac Fiber-based Interferometric Switch Utilizing Faraday Rotation,” Fall 2008.
Inventors: Sasha Kemmet, **Mani Mina**, and Robert Weber.

ISURF #03622: Kemmet* S. , Mina, M., Weber R. , “Fiber-based System and Method of Measuring Domain Characteristics of Bismuth Substituted Iron Garnets (BIGs),” Spring 2008.
Inventors: Sasha Kemmet* , **Mani Mina**, and Robert Weber.

ISURF #02913 – Mina, Mani, “Magnetic Nanoswitch.” 2001
Status: Holding for reduction to practice.
Inventor: Mani Mina

Service to Disciplinary and Professional Societies or Associations

Technical C-Chair, representing IEEE Education Society, Frontiers in Education Conference, Stockholm-Uppsala Sweden, 2020.

Technical Co-chair, representing IEEE Education Society, Frontiers in Education Conference, El Paso, TX (2015).

Member of Board of Director IEEE education society (2010-2018)

Chair of Technological and Engineering Literacy and Philosophy of Engineering
Division of American Society for Engineering Education Division (TELPHE) ASEE
(2012-20017)

Associate Editor, IEEE Transactions on Magnetics (since 2008)

Associate Editor, IEEE Transactions on Education (since 2011)

Associate Editor, Material Evaluation 1995-present

Editor, IEEE Education Society's Interface publication (2011-present)

Member of EdSoc (executive committee), IEEE Education Society 2010-2012

Technical Co-chair, representing IEEE Education Society, Frontiers in Education
Conference, San Antonio, TX (2009)

Treasurer, Technological Literacy Group, ASEE 2007-2009

Professional Society Memberships and Activities

Member of international Design Society, 2018-Present

Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) (since 1997)

Magnetics Society (2000-present)

Laser and Electro Optics Group (1989-1995)

Associate editor for Transactions on magnetism (2007-Present) This is listed twice

Associate editor for Transactions on Education (2012-Present)

Computer Society Same here

Electromagnetic Compatibility (EMC) Society (1988-1999)

Education Society(1998-Present)

Member of The Board of Governors (2010-Present) IEEE education Society

Editor of "The Interface, pedagogical note for engineering education" (2011-
Present)

Member of American Society of Nondestructive Testing (ASNT)

Chair Publication Activity Division, Chair

Electromagnetic Education and Professional Division

Associate Technical Editor (ATE) of *Materials Evaluation*

Liaison member and organizer of special R&D task group

Electromagnetic Methods Handbook Coordinator

Member of American Society of Engineering Education (ASEE)

Treasurer of ASEE Technological Literacy group (on the founding team)

Member of Honor Societies ηκν and ΣΨ ΣΞ

Editorships of Journals or Other Learned Publications

Associate editor for Transactions on magnetism (2007-Present)

Associate editor for Transactions on Education (2012-Present)

Associate editor MURATIONS (Jan 2017-Present)

Editor IEEE Education Society The Interface

Co-chair (IEEE), Frontier in Education 2015 (FIE2015) Conference, El Paso, Texas (Oct 2015)

Co-chair (IEEE), Frontier in Education 2009 (FIE2009) Conference, San Antonio, Texas (Oct 2009)

Editor for IEEE The Interface: Pedagogical platform for Engineering education (2012-Present)

Member of Editorial Board for IEEE Interface (2010-2011)

American Society for Engineering Education, Technological and Engineering, Literacy &Philosophy, Member and Treasure of the Society (2010-Present)

Technical Editor, Materials Evaluation, American Society for Nondestructive Testing (1996-present)

Member of American Society of Nondestructive Testing (ASNT)

Chair Publication Activity Division (1997-2000)

Electromagnetic Education and Professional Division (1998-present)

Associate Technical Editor (ATE), Materials Evaluation (1998-present)

Liaison member and organizer of special R&D task group (1997-1999)

Electromagnetic Methods Handbook Coordinator (1999-present)

Chair, Ames, Iowa section (1999-2001)

Reviewer for

American Society for Engineering Education (2003-present)

IEEE Transactions on Magnetics (2005-present)

IEEE Networking (2004-present)

IEEE Transactions on Education (2007-present)

IEEE Photonics Letters (2009-Present)

Journal of NDT&E (2000-Present)

Editor, e-Pro electronic journal focusing on handheld computer for the mobile professionals (Closed as of 2002 <http://www.trgpro.com/e-Pro/index.html>) (1999-2001)