CURRICULAUM VITA

Mani Mina Ph. D.
Associate Professor of Industrial Design
Associate Professor of Electrical and Computer Engineering
Iowa State University

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

PRPFESSIONAL EXPERIENCE

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 Experiences

2001 (Jan–Aug): Senior Director of Ultrasonic Design and Development, ETREMA Products, Inc. Ames, Iowa

1998 – 2001: Director of Business/Product 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: Teaching Assistant, 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

SCHOLARSHIP

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Book Chapters

2017-2019

- "Philosophy and Engineering Education: New Perspectives, Volume 2. Practical Ways of Knowing, Stephen Frezza Russell Korte **Mani Mina** David A. Nordquest To be published by Morgan and Claypool, June 2020. Chapter 2: John Dewey's Philosophical Perspectives and Engineering Education. Mani Mina, Chapter 3:From Dewey to Lonergan. **Mani Mina** and Stephen Frezza. To be Published by Morgan and Claypool June 2023. (chapters 2 and 3)
- 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(TELPhE), Division of American society of Engineering Education Vol IV 2017.

2010-2016

- **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, Vol II" 2015. Published by Technological and Engineering Literacy and Philosophy of Engineering (TELPhE), Division of American society of Engineering Education
- 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, (TELPhE), Division of American society of Engineering Education. 1" 2014. Published by Technological and Engineering Literacy and Philosophy of Engineering (TELPhE), Division of American society of Engineering Education.
- 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).
- J. Tioh*, R. J. Weber, **M. Mina**, "Magneto-Optical Switches," in Optical Switches Materials and Design, Woodhead Publishing Ltd., Cambridge, UK, 2010 (Chapter 4).

Peer-reviewed conference articles

2020

- **A typology for magnetic field generator technologies** N. Robert, N. Prabhu Gaunkar, W. Shen Theh, and M. MinaAIP (Advances In Physics) Advances **11**, 015103 (2021); https://doi.org/10.1063/9.0000046
- ***"Promoting Graduate and Professional Attributes by Coordinating Kolbian Reflections for Industrial Design," Mani Mina****, John Cowan, Nick Fila, Wei Shen* Tioh* Submitted for International Design Conference, Design 2020, October 2020, Cavtat, Dubruvnik, Croatia* Virtual On line. *//doi.org/10.21278/idc.2020.000*
- Rover, D.T., **Mina, M.**, Herron-Martinez, A.R., Rodriguez, S.L., Espino, M.L. and Le, B.D., 2020, October**. Improving the Student Experience to Broaden Participation in Electrical, Computer and Software Engineering**. In *2020 IEEE Frontiers in Education Conference (FIE)* (pp. 1-7). IEEE.
  Selected as the 2020 ASEE/IEEE Frontiers in Education Conference Best Diversity Paper Award winner

- Rover, D.T., Fila, N.D., Jones, P.H. and **Mina, M.**, 2020, October. **Introducing Autonomy in an Embedded Systems Course Project. In *2020*** *IEEE Frontiers in Education Conference (FIE)* (pp. 1-9). IEEE.

- Gaunkar, N.P., Fila, N. and **Mina, M**., **2020, October. Broadening Engineering Perspectives by Emphasizing the Human Side of Engineering. In *2020 IEEE** *Frontiers in Education Conference (FIE)* (pp. 1-5). IEEE.
- **Fila, N. D., Rover, D. T.,** Mina, M.**, Jones, P. H. (2020, June),** *Cross-functional Team Course Design Project in Engineering* **Paper presented at 2020** ASEE Virtual Annual Conference Content Access, Virtual On line . 10.18260/1-2—34358
- Pluskwik, E., **Mina, M.,** Heywood, J., Neville Pears, A**.,** 2020, October. **Determinants of Initial Training for Engineering Educators** Paper presented at 2020 ASEE Virtual Annual Conference Content Access, Virtual On line

2019

- ***"Using Design Thinking and Technological Domains to Assess Knowledge Transfer in Engineering Design"*** *John Krupczak, Jr (Hope College, USA);* ***Mani Mina*** *(Iowa State University, USA); Melissa Rands (Minneapolis College of Art and Design, USA) IEEE Frontiers in Education Conference (FIE), Cincinnati, OH, 2019.*
- ***"Cyber Security Social Engineers - An Extensible Teaching Tool for Social Engineering Education and Awareness,"*** *Jin-Ning Tioh*, **Mani Mina** and Doug Jacobson (Iowa State University, USA) IEEE Frontiers in Education Conference (FIE), Cincinnati, OH, 2019.*
- ***"Co-ordinating Kolbian reflections to promote engineers' graduate attributes,"*** **Mani Mina** (Iowa State University, USA); John Cowan (Heriot-Watt University, United Kingdom (Great Britain)) *IEEE Frontiers in Education Conference (FIE) Cincinnati, OH,2019.*
- "**Reframing, a vital ingredient for future diverse learners**", Neelam Prabhu Gaunkar* and **Mani Mina** (Iowa State University, USA) *IEEE Frontiers in Education Conference (FIE). Cincinnati, OH, 2019.*
- "Designing a Multi-Cycle Approach to Empathetic Electrical Engineering Courses," Rachel Ann Shannon*, Sara Kaye Jones*; **Mani Mina**, Iowa State University, 2019 ASEE Annual Conference & Exposition, May16-19, Tampa, Florida.
- **"Addressing the Differences between Intention and Retention in Engineering Classrooms: Possible Ways to Design Classes for Students' Knowledge Retention,"** Neelam Prabhu Gaunkar *, Iowa State University; **Mani Mina**, Iowa State University, 2019 ASEE Annual Conference & Exposition, May16-19, Tampa, Florida.

2018

- Arabzadeh, Ali, Halil Ceylan, Sunghwan Kim, Alireza Sassani, Kasthurirangan Gopalakrishnan, and **Mani Mina** "Electrically-conductive asphalt mastic:

Temperature dependence and heating efficiency." *Materials & Design* 157 (2018): 303-313.
TELPhE Division as a Community of Transformation" Mina, Mani, and John Krupczak 2018 IEEE Frontiers in Education Conference (FIE). IEEE, 2018..

- ”Student-mentor views on inquiry-based learning: A challenge for designing effective inquiry-based classes with mentors" Neelam Prabhu Gaunkar*, Mani Mina.2018 IEEE Frontiers in Education Conference (FIE). IEEE, 2018.
- “Designing a Curriculum that Helps Students Create Connected Narratives in Electrical Engineering,” Sara Kaye Jones*, Mani Mina, Iowa State University2018 ASEE Annual Conference & Exposition, June24-27, Salt Lake City, UT.
- “Improvements in Undergraduate Electromagnetism Courses by Designing Experiences of Inquiry and Reflection,” Neelam Prabhu Gaunkar*, **Mani Mina**, Iowa State University. 2018 ASEE Annual Conference & Exposition
- “Making Sense of Gender Differences in the Ways Engineering Students Experience Innovation: An Abductive Analysis,” Nicholas D. Fila, ,Rachel E. Friedensen, **Mani Mina**, Benjamin Ahn, Iowa State University 2018 ASEE Annual Conference & Exposition
- “Developing Self-awareness in Learning Practices: Designing and Implementing a Survival Tool for Freshmen in Engineering,” Neelam PrabhuGaunkar*, **Mani Mina**, Iowa State University 2018 ASEE Annual Conference & Exposition

2017

- “A Framework for an Engineering Reasoning Test and Preliminary Results,” John Krupczak Jr, Hope College; **Mani Mina**, Iowa State University; Kate A Disney, Mission College, 2017 ASEE Annual Conference & Exposition, June 25-28, Columbus, OH.
- “Riding the Wave of Change in Electrical and Computer Engineering,” Diane T. Rover; Joseph Zambreno; **Mani Mina**; Phillip H. Jones III; Douglas W. Jacobson; Seda McKilligan,; Ashfaq Khokhar, Iowa State University, 2017 ASEE Annual Conference & Exposition, June 25-28, Columbus, OH.
- “Technological and Engineering Literacy Classes from different perspectives: A pilot study,” **Mani Mina**, Iowa State University, 2017 ASEE Annual Conference & Exposition, June 25-28, Columbus, OH.
- "Connections and distinctions: Perspectives on design activity from industrial design and electrical engineering" **Mina, Mani**, Melissa Rands, and David Ringholz. IEEE frontiers in education conference (fie). IEEE, 2017 May18-21 Indianapolis Indiana
- “Design thinking as a catalyst for changing teaching and learning practices in engineering” McKilligan, S., Fila, N., Rover, D. and Mina, M., 2017, October. 2017

IEEE Frontiers in Education Conference (FIE) 2017 IEEE 2017 May18-21 Indianapolis Indiana

- "Cyber security training a survey of serious games in cyber security" Tioh, Jin-Ning*, **Mani Mina**, and Douglas W. Jacobson. 2017 IEEE Frontiers in Education Conference (FIE). IEEE, 2017.
- "Variations in Student Learning in an Inquiry-based Freshmen Electrical Engineering Course" Neelam Prabhu Gaunkar*, Melissa Rands, and **Mani Mina**. 2017 IEEE Frontiers in Education Conference (FIE). Vol. 10. 2017.
- "Sketchnoting: A new approach to developing visual communication ability, improving critical thinking and creative confidence for engineering and design students." Paepcke-Hjeltness, Verena, **Mani Mina**, and Aziza Cyamani. 2017 IEEE Frontiers in Education Conference (FIE). IEEE, 2017
- 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
- 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
- Bauer, L.***,** Gaunkar, N. P.B, 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
- Abdualla, H., Ceylan, H., Kim, S., Gopalakrishnan, K., **Mina, M.**, Taylor, P. C, and Cetin, K., S. (2017). "Development of a Finite Element Model for Electrically Conductive Concrete Heated Pavements," In Transportation Research Board, Transportation Research Board, (No. 17-05389), Washington, D.C., January 8-12, 2017.
- Abdualla, H., Ceylan, H., Kim, S., Gopalakrishnan, K., **Mina, M.**, Taylor, P. C, and Cetin, K., S. (2017). "Configuration of Electrodes for Electrically Conductive Concrete Heated Pavement," ASCE International Conference on Highway Pavements and Airfield Technology, Philadelphia, PA., August 27-30-12, 2017.
- Abdualla, H., Ceylan, H., Kim, S., Gopalakrishnan, K., **Mina, M.**, Taylor, P. C, and Cetin, K., S. (2017). "Development of a Finite Element Model for Electrically Conductive Concrete Heated Pavements," In Transportation Research Board, Transportation Research Board, (No. 17-05389), Washington, D.C., January 8-12, 2017.
- Abdualla, 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.

- Theh, W.S.B*, **Mina, M.,** Ceylan, H., & Kim, S. (2019). Evaluation of Radio Frequency Interference Potential of Electrically Conductive Concrete for Heated Pavement Systems. "In *Airfield and Highway Pavements 2019: Innovation and Sustainability in Highway and Airfield Pavement Technology* (pp. 59-67). Reston, VA: American Society of Civil Engineers. 2017

Publications in Journals

2017-2021

- **A typology for magnetic field generator technologies** N. Robert, N. Prabhu Gaunkar, W. Shen Theh, and M. MinaAIP (Advances In Physics) Advances **11**, 015103 (2021); https://doi.org/10.1063/9.0000046
- **"Design and Full-scale Implementation of the Largest Operational Electrically Conductive Concrete Heated Pavement System"** Malakooti, Amir ; Theh, Wei Shen ; Sadati, S.M. Sajed ; Ceylan, Halil ; Kim, Sunghwan ; **Mina, Mani** ; Cetin, Kristen ; Taylor, Peter C. Construction & building materials, 2020-09-20, Vol.255, p.119229
- **"Self-Regulation Strategies in an Engineering Design Project,"** Lawanto, Oenardi; Febrian, Andreas; Butler, Deborah; **Mina, Mani** *International Education Studies*, v12 n5 p133-152 2019. "**Interferometric Detection of Pinned Interactions in Bismuth-Substituted Iron Garnet**" Bauer, L., N.*, Prabhu Gaunkar *, **Mani Mina**, and J. W. Pritchard. *IEEE Transactions on Magnetics* (2019).
- 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
- 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).
- 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
- 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

- 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
- 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

2014-2016

- 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" **Nature *Scientific reports* 6** (2016): 38679. doi:10.1038/srep38679
- 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.
- 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 magnetooptical garnet film." In *Advanced Solid State Lasers*, pp. ATh4A-7. Optical Society of America, 2016.
- 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, May2016 Invited Book Review, to be published.
- 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 .
- J. Tioh*, **M. Mina**, R. J. Weber, "All-Optical Switching in Transparent Networks: Challenges and New Implementations," EDN Network, Sep. 2015.
- 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).
- 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

- 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.
- Pritchard, J. W. *, **Mani Mina**, and Prabesh Dulal. "Demonstration of Magnetooptic Latching Router for All-Optical Networking Applications." Magnetics, IEEE Transactions on 50.11 (2014): 1-4.**BEST POSTER AWARD**
- 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.

2010-2013

- Pritchard, J. W. * and **Mina, M.**, "Magneto-Optic Switch With Resonator Configuration," IEEE Magnetics Letters, Vol. 4, pp. 6000104, 2013.
- 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.
- 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.
- 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.
- Pritchard, J. W. * and **Mina, M.**, "MO Switching in Fiber-Optic Systems," Magnetics Technologies International, 2012.
- 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.
- J. W. Pritchard*, **M. Mina** "Magneto-optic Switching in Fiber Optic Systems," Magnetic technology International, London, pp79-81, 2012. (invited paper)
- J.W. Pritchard*, **M. Mina**,R. J. Weber, "Improved Switching for Magneto-Optic Fiber-Based Technologies", IEEE Trasn. Magn. Vol 48, Iss. 11, 2012, pp. 3772-3775.
- J. Tioh*, S. Oster*, **M. Mina**, R. J. Weber, "Optimization of Magneto-opticDevice by Low Switching Field Domains," ISRN Optics, vol. 2012, pp. 1-5, Jan. 2012.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

1991-2009

- 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.
- 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.
- 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.
- 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.
- 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.
- 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)

- 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.
- 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.
- 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.
- **M. Mina**, R. M. Gerdes*, "The pedantic† 21st century freshman engineering student," European journal of engineering education 31 (5), 509-516, 2006.
- 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.
- **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)
- 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.
- "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.
- 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.
- 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.
- 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
- Safaeinili A. 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.

Invited Panels

2019

- **"Challenges of the first year Development for the NSF-RED new award recipients,"** Moderated by Julia Williams, and…NSF RED symposium, Alexandria VA, Nov 2-4, 2019**.**
- **"The future of work, and implications for Engineering Educations"**, Moderated by Eugen Rutz, Speakers Dora Smith Director of global Academic program, Seimans, Charles E. Baukal Jr. P.E. Director of the John Zink,John Zink Hamworthy Combustion in Tulsa, OK, Dr. Mani Mina Iowa State University, A creative and south after educator in Industrial Design and Electrical and computer Engineering, Dr. Mary K. Pilotte, Purdue University, Director Undergraduate Programs IDES & Multidisciplinary Engineering **ASEE 2019**

2017

- "**Panel: Influencing culture and curriculum via revolution**" Cross, Kelly, Marina Miletic, Tiago Forin, **Mani Mina**, Amit Jain, Elsa Villa, Lisa McNair, and Ella L. Ingram. In 2017 IEEE Frontiers in Education Conference (FIE),IEEE, 2017, 2017 May18-21 Indianapolis Indiana
  This was a panel of some of the leading researcher of NSF RED proposal. I am a member of ISU's RED: Revolutionizing Engineering and Computer Departments NSF proposal. My role in this part was understanding Tension and Change

Invited papers (technical, professional)

1997-2014

- M**ani Mina** "Invited cover" Magnetics Technologies International (MTI), 2016.
- Pritchard, J. * W. and **Mina, M.**, "Magneto-Optic Router on a Chip," Magnetics Technologies International (MTI), 2016.
- **Mani Mina** "Invited cover" Magnetics Technologies International (MTI), 2014.
- Pritchard, J. * W. and **Mina, M.**, "Communicating with Magnetism," Magnetics Technologies International (MTI), 2014.
- "Networking, a new perspective on what it is, who does it benefit," **Mani Mina** AISO, association of International Students Organization, March 13th-15 th 2015.
- **M. Mina** "Guest writer Faculty View on Magnetism" MTI, Magnetics Technology International Magazine 2013.
- 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.
- J. W. Pritchard*, **M. Mina** "Magneto-optic Switching in Fiber Optic Systems," Magnetic technology International, London, pp. 79-81, 2012.

- "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.
- "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.)
- 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.
- "Back to the basics: Fundamental strategies for engineering education," **M. Mina**, published in the academic bookshelf, Journal of Engineering Education, Jul 2003.
- "What makes a class GOOD?," **M. Mina**, IEEE Student Relay, ISU chapter, Dec 2002.
- "So, where is the real world?," M. Mina, IEEE Student Relay, ISU chapter, Oct 2002.
- "Are you being educated?," M. Mina, IEEE Student Relay, ISU chapter, May 2002.
- **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.
- **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.
- 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.

- "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.
- "Educating the public: A better way to the 21st century," **M. Mina**, Materials Evaluation, ASNT, Vol. 55, No. 8, pp. 888, Aug 1997.
- "NDT grows in the food industry," **M. Mina**, Materials Evaluation, Vol. 55, No. 7, pp. 802, Jul 1997.
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Best Paper awards: international conferences

- Rover, D. T., **Mina, M.**, Herron-Martinez, A. R., Rodriguez, S. L., Espino, M. L., & Le,B. D. "**Improving the Student Experience to Broaden Participation in Electrical, Computer and Software Engineering**" In 2020 IEEE Frontiers in Education Conference (FIE) Stockholm, Sweden (Online). Winner of the best paper for Diversity and inclusion.

- Rutz, E., Collins, C., & **Mina, M.** (2008, June). "**A Guided Tour Of The Future Of Education**". In *2008 ASEE Annual Conference & Exposition*, Pittsburgh, PA. ASEE.PERMALINK: https://peer.asee.org/3577
- Pritchard, J. W.*, **Mina, M.**, & Dulal, P. (2014). "**Demonstration of magnetooptic latching router for all-optical networking applications**". *IEEE Transactions on Magnetics*, 50(11), 1-4. **BEST POSTER AWARD, German** DOI: https://doi.org/10.1109/TMAG.2014.2326162
- Gerdes, R. M., Anderson, N. E., & **Mina, M.** (2008). "Field Solutions of Layered Superconductors: A Magnetic Vector Potential Approach". Materials Evaluation, 66(3). FELLOWSHIP AWARD PAPER DOI: https://doi.org/10.1109/TMAG.2014.2326162

Patents

Patents 2018

- Patent Awarded in 2018: U.S. No. 10110001 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**

Before 2017

- 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 2017 U.S. No. 8478082 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.

Editorship and professional activities

- Active member of American Society for Engineering Education, Technological and Engineering, Literacy &Philosophy (TELPhE), Have been Member, treasurer, Chair, and past chair and Treasure of the Society (2010-Present)
- Associate editor for IEEE Transactions on magnetism (2007-Present)
- Associate editor for IEEE Transactions on Education (2012-Present)

- Technical Editor, Materials Evaluation, American Society for Nondestructive Testing (1996-present)
- Associate editor Mumurations (Jan 2017-Present)
- Editor for IEEE The Interface: Pedagogical platform for Engineering education (2012-Present, inactive, being reframed)
- Co-chair (IEEE), Frontier in Education 2020 (FIE2020) Conference, Upsala Sweden (Oct 2020)
- Co-chair (IEEE), Frontier in Education 2019 (FIE2019) Conference, Cincinnati, OH, (Oct 2019)
- 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)
- Member of Editorial Board for IEEE Interface (2010-2011)

Honors, Recognitions, and outstanding Achievements

1. Iowa State University Learning Community Outstanding Service Award (2020) For 25 years of service to Electrical Engineering Learning Community EELC (EELC is has the most years in service learning community at Iowa State University, 20 years).
2. Educational Impact award(2017-2018), Boast-Nilsson Award. In Recognitions, and Outstanding Achievements For contributions to curriculum, instruction, and educational research, leading to generational impact on the education of graduate and undergraduate Students
3. 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.
4. Faculty Member of the year, Engineering Student Council of Iowa State University, 2015. 3. Faculty of the year Greek Housing , Iowa State University, 2015.
5. Warren B. Boast Undergraduate Teaching Award, Department of Electrical and Computer Engineering, Iowa State University, 2014.
6. Mervin S. Coover Distinguished Service Award, Department of Electrical and Computer Engineering, Iowa State University, 2010. 6. VEISHEA Faculty Recognition Award, Iowa State University, 2009.
7. Warren B. Boast Undergraduate Teaching Award, Department of Electrical and Computer Engineering, Iowa State University, 200.8

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