Meng-Ju (Renee) Sher

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EDUCATION

Harvard University, Cambridge, MA
Ph.D., Physics, May 2013
A.M., Physics, June 2009

Wesleyan University, Middletown, CT
B.A., Physics with high honors, May 2007

EMPLOYMENT

Assistant Professor of Physics 2016 – present
Department of Physics, Wesleyan University, Middletown, CT

Acting Assistant Professor 2015 – 2016
Materials Science & Engineering, Stanford University, Stanford, CA

Postdoctoral Scholar 2013 – 2015
Stanford University and SLAC National Accelerator Laboratory,
Menlo Park, CA. Advisor: Aaron Lindenberg

Graduate Research Assistant 2008 – 2013
Department of Physics, Harvard University, Cambridge, MA
Advisor: Eric Mazur

Teaching Fellow 2011 – 2013
Department of Physics, Harvard University, Cambridge, MA

Teaching Consultant 2011 – 2013
Derek Bok Center for Teaching and Learning, Harvard University,
Cambridge, MA

HONORS and AWARDS

White Prize for Excellence in Teaching of Physics	2013 and 2014
SPIE 2013 Green Photonics Award	2013
Harvard University Certificate of Distinction in Teaching	2013
SPIE 2011 Photonics West best student paper	2011
Harvard Graduate Consortium on Energy and Environment – Fellowship	2009 – 2010
Purcell Fellowship – One-year full stipend and tuition to study at Harvard	2007– 2008
Wesleyan Bertman Prize – Creativity in approach to physics research	2007
Phi Beta Kappa – Undergraduate honors society, Wesleyan University chapter	2006
Freeman Scholar – Four-year full scholarship to study at Wesleyan University	2003 – 2007

TEACHING and ADVISING

Wesleyan University
PHYS 342 – Experimental Optics, Spring 2017

Stanford University
MATSCI 153 – Nanostructure and Characterization, Winter 2015, 2016
MATSCI 164 – Mechanical Behavior Laboratory, Autumn 2015

PUBLICATIONS

In Preparation:

1. Dynamic optical control of van der Waals/Casimir interactions in layered transition metal dichalcogenides, E.M. Mannebach, C. Nyby, F. Ernst, Y. Zhou, J. Tolsma, Y. Li, **M.-J**. **Sher**, I.-C. Tung, H. Zhou, Q. Zhang, K.L. Seyler, G. Clark, Y. Lin, D. Zhu, J.M. Glownia, M.E. Kozina, S. Song, S. Nelson, A. Mehta, Y. Yu, A. Pant, O. Burak Aslan, A. Raja, Y. Guo, A. DiChiara, W. Mao, L. Cao, S. Tongay, T.F. Heinz, X. Xu, A.H. MacDonald, E. Reed, H. Wen, A. M. Lindenberg (*submitted*)

Refereed Publications:

1. Ultrafast terahertz-field-driven ionic response in ferroelectric $BaTiO_3$, F.C. Chen, Y. Zhu, S. Liu, Y. Qi, H.Y. Hwang, N.C. Brandt, J. Lu, F. Quirin, H. Enquist, P. Zalden, T. Hu, J. Goodfellow, **M.-J. Sher**, M.C. Hoffmann, D. Zhu, H. Lemke, J. Glownia, M. Chollet, A. R.Damodaran, J. Park, Z. Cai, I.W. Jung, M.J. Highland, D.A. Walko, J. W.Freeland, P.G. Evans, A. Vailionis, J. Larsson, K.A. Nelson, A.M. Rappe, K. Sokolowski-Tinten, L. W. Martin, H. Wen, A.M. Lindenberg, *Phys. Rev. B*, 94, 180104(R), (2016)
2. THz-driven ultrafast spin-lattice scattering in amorphous metallic ferromagnets, S. Bonetti, M.C. Hoffmann, **M.-J. Sher**, Z. Chen, S.-H. Yang, M.G. Samant, S.S.P. Parkin, H.A. Dürr, *Phys. Rev. Lett.*, 117, 087205, (2016)
3. Mechanism for Broadband White-Light Emission from Two-Dimensional (110) Hybrid Perovskites, T. Hu, M.D. Smith, E.R. Dohner, **M.-J.** Sher, X. Wu, M. Trinh, A. Fisher, J. Corbett, X.-Y. Zhu, H.I. Karunadasa, A.M. Lindenberg, *J. Phys. Chem. Lett.*, 7, 2258 (2016)
4. Picosecond electric field induced threshold switching in phase-change materials, P. Zalden, M.J. Shu, F. Chen, X. Wu, Y. Zhu, H. Wen, S. Johnston, Z.-X. Shen, P. Landreman, M. Brongersma, S. W. Fong, H.-S. Philip Wong, **M.-J. Sher**, P. Jost, M. Kaes, M. Salinga, A. von Hoegen, M. Wuttig, A.M. Lindenberg, *Phys. Rev. Lett.*, 117, 067601 (2016)
5. Time- and Temperature-Independent Local Carrier Mobility and Effects of Regioregularity in Polymer-Fullerene Organic Semiconductors, **M.-J. Sher**, J.A. Bartelt, T.M. Burke, A. Salleo, M.D. McGehee, A.M. Lindenberg, *Adv. Electron. Mater.,* 2, 1500351, (2016)
6. Transient terahertz photoconductivity measurements of minority-carrier lifetime in tin sulfide thin films: Advanced metrology for an early stage photovoltaic material, R. Jaramillo, **M.-J. Sher**, B.K. Ofori-Okai, V. Steinmann, C. Yang, K. Hartman, K. A. Nelson, A.M. Lindenberg, R. G. Gordon, T. Buonassisi, *J. Appl. Phys.*, 119, 035101 (2016)
7. Femtosecond-laser hyperdoping silicon in an SF_6 atmosphere: the dopant incorporation mechanism, **M.-J. Sher**, N. Mangan, M. J. Smith, Y.-T. Lin, S. Marbach, T.M. Schneider, S. Gradečak, M.P. Brenner, E. Mazur, *J. Appl. Phys.*, 117, 125301 (2015)
8. Ultrafast electronic and structural response of monolayer MoS2 under intense photoexcitation conditions, E.M. Mannebach, K.N. Duerloo, L. Pellouchoud, **M.-J. Sher**, S. Nah, Y. Kuo, Y. Yu, A. Marshall, L. Cao, E.J. Reed, A.M. Lindenberg, *ACS Nano*, 8, 10734 (2014)
9. Picosecond carrier recombination dynamics in chalcogen-hyperdoped silicon, **M.-J. Sher**, C.B. Simmons, J.J. Krich, A.J. Akey, M.T. Winkler, D. Recht, T. Buonassisi, M.J. Aziz, and A.M. Lindenberg, *Appl. Phys. Lett.,* 105, 053905 (2014)
10. Intermediate band conduction in femtosecond-laser hyperdoped silicon, **M.-J. Sher** and E. Mazur, *Appl. Phys. Lett.,* 105, 032103 (2014)
11. Improving dopant incorporation during femtosecond- laser doping of Si with a Se thin-film dopant precursor, M.J. Smith, **M-J Sher**, B. Franta, Y.-T. Lin, E. Mazur and S. Gradecak, *Appl. Phys. A*, 114, 1009 (2014)
12. Mid-infrared absorptance of silicon hyperdoped with chalcogen via fs-laser irradiation, **M.-J. Sher**, Y.-T. Lin, M.T. Winkler, E. Mazur, C. Pruner and A. Asenbaum, *J. Appl. Phys.*, 113, 063520 (2013)

13. Extended X-ray absorption fine structure spectroscopy of selenium-hyperdoped silicon, B. K. Newman, E. Ertekin, J.T. Sullivan, M.T. Winkler, M.A. Marcus, S. Fakra, **M.-J. Sher**, E. Mazur, J. C. Grossman and T. Buonassisi, J. Appl. Phys., 114, 133507 (2013)

14. Selenium segregation in femtosecond-laser hyperdoped silicon revealed by electron tomography G. Haberfehlner, M.J. Smith, J. Idrobo, G. Auvert, **M.-J. Sher**, M.T. Winkler, E. Mazur, N. Gambacorti, S. Gradečak and P. Bleuet *Microscopy and Microanalysis* 19, 716 (2013)

15. The origins of pressure-induced phase transformations during the surface texturing of silicon using femtosecond laser irradiation, M.J. Smith, **M.-J. Sher**, B. Franta, Y.-T. Lin, E. Mazur and S. Gradečak, *J. Appl. Phys*., 112, 083518 (2012)

16. Studying femtosecond-laser hyperdoping by controlling surface morphology, M.T. Winkler, **M.-J. Sher**, Y.-T. Lin, M.J. Smith, H. Zhang, S. Gradečak , E. Mazur, *J. Appl. Phys*., 111, 093511 (2012)

17. Pulsed-laser hyperdoping and surface texturing for photovoltaics, **M.-J. Sher**, M.T. Winkler, E. Mazur, *MRS Bulletin*, 36, 439 (2011)

18. Reactivation of sub-bandgap absorption in hyper-doped silicon, **M.-J. Sher**, B.K. Newman, E. Mazur, T. Buonassisi, *Appl. Phys. Lett.*, 98, 251905 (2011)

19. Insulator-to-metal transition in sulfur-doped silicon, M.T. Winkler, D. Recht, **M.-J.Sher**, A.J. Said, E. Mazur and M.J. Aziz, *Phys. Rev. Lett.*, 106, 178701 (2011)

20. Pressure-induced phase transformations during femtosecond-laser doping of silicon, M.J. Smith, Y.-T. Lin, **M.-J. Sher**, M.T. Winkler, E. Mazur, S. Gradečak, *J. Appl. Phys.*, 110, 053524 (2011)

21. The effects of a thin film dopant precursor on the structure and properties of fs- laser irradiated silicon, M.J. Smith, M.T. Winkler, **M.-J. Sher**, Y.-T. Lin, E. Mazur, S. Gradečak, *Appl. Phys. A*, 105, 795 (2011)

Conference Proceedings:

1. *Green Photonics Award for laser-assisted manufacturing and micro/nano fabrication*
   The photovoltaic potential of femtosecond-laser textured amorphous silicon, **M-J. Sher**, K. Hammond, L. Christakis, E. Mazur, *SPIE 2013 Photonics West Conference Proceedings*, 2013, San Francisco, CA

2. Light trapping for thin silicon solar cells by femtosecond laser, B.G. Lee, Y.-T. Lin, **M.-J. Sher**, E. Mazur, H.M. Branz, *IEEE Photovoltaic Specialists Conference Proceedings*, 2012, Austin, TX

3. *Green Photonics Award for laser-assisted manufacturing and micro/nano fabrication*
   Femtosecond laser doping and nanostructuring of silicon for photovoltaics, B. Franta, **M-J. Sher**, Y.-T. Lin, K.C. Phillips, E. Mazur, *SPIE 2012 Photonics West Conference Proceedings*, 2012, San Francisco, CA

4. Illuminating the mechanism for sub-bandgap absorption in chalcogen doped silicon materials for PV applications, B.K. Newman, J.T. Sullivan, M.T. Winkler, **M.-J. Sher**, M.A. Marcus, S. Fakra, M.J. Smith, S. Gradecak, E. Mazur, T. Buonassisi, *24th European Photovoltaic Solar Energy Conference Proceedings*, September 21, 2009, Hamburg, Germany