

# MERVIN ZHAO

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CONTACT INFORMATION	6400 Christie Ave., APT 1304 Emeryville, CA 94608 USA	<i>Mobile:</i> (774) 310 1337 <i>E-mail:</i> zhaomw@berkeley.edu
EDUCATION	<b>University of California</b> , Berkeley, CA. USA Ph.D., Applied Physics <i>Designated Emphasis in Nanoscale Science &amp; Engineering</i> <b>Cornell University</b> , Ithaca, New York. USA B.A., Chemistry	<b>Jun 12 – May 17</b> <b>Aug 08 – Jan 12</b>
RESEARCH	<b>University of California</b> , Berkeley, CA. USA <i>Applied Science and Technology Ph.D Student</i> Advisor: Professor <a href="#">Xiang Zhang</a> <ul style="list-style-type: none"><li>• Solid state growth (CVD) of nanomaterials (e.g. two-dimensional materials, perovskites)</li><li>• Post-silicon materials for next-generation transistor and logic applications</li><li>• Non-linear optics for microscopy and spectroscopy</li><li>• Emergent physics in two-dimensional materials and heterostructures</li><li>• Data analysis in MATLAB and modeling in Mathematica</li><li>• Collaborated with world-famous groups on ionic liquids and electron microscopy</li><li>• One of <a href="#">Quora's</a> most viewed writers on Graphene</li></ul> <b>Cornell University</b> , Ithaca, New York. USA <i>Undergraduate Researcher, Research Assistant</i> Advisor: Professor <a href="#">Dan Luo</a> <ul style="list-style-type: none"><li>• Solution based synthesis of nanomaterials</li><li>• Bottom-up fabrication using DNA-based rational self assembly</li><li>• Small-angle x-ray scattering of self-assembled supracrystals</li></ul> <b>Harvard Medical School</b> , Boston, Massachusetts. USA <i>Summer Research Student</i> Advisor: Professor <a href="#">Alan Beggs</a> <ul style="list-style-type: none"><li>• Genetic testing using molecular biology techniques</li></ul>	<b>Jun 12 – May 17</b> <b>Aug 09 – May 12</b> <b>Jun – Aug 08, 09</b>
AWARDS	<ul style="list-style-type: none"><li>• Ross Tucker Memorial Award</li><li>• Materials Research Society Graduate Student Award</li><li>• National Science Foundation Graduate Research Fellowship (NSF GRFP)</li><li>• The Anselmo J. Macchi Fellowship Fund for Graduate Students in Engineering</li><li>• ΦBK Honor Society</li></ul>	
PUBLICATIONS	[7] J. Xiao, M. Zhao, Y. Wang, X. Zhang. Excitons in layered two-dimensional semiconductors and their applications, <i>Nanophotonics</i> . <b>2017</b> Accepted.  [6] M. Zhao, Y. Ye, Y. Han, Y. Xia, H. Zhu, S. Wang, Y. Wang, D. A. Muller, X. Zhang. Large-scale chemical assembly of atomically thin transistors and circuits, <i>Nature Nanotechnology</i> . <b>2016</b> 11, 954-959. <ul style="list-style-type: none"><li>• Highlighted by <a href="#">IEEE Spectrum</a>, <a href="#">Ars Technica</a>, and <a href="#">LBL News</a>.</li><li>• Patent filed (Inventor)</li></ul>	

- [5] M. Zhao, Z. Ye, R. Suzuki, Y. Ye, H. Zhu, J. Xiao, Y. Wang, Y. Iwasa, X. Zhang. Atomically Phase-Matched Second-Harmonic Generation in a 2D Crystal, *Light: Science & Applications*. **2016** 5, e16131.
- [4] Y. Ye, J. Xiao, H. Wang, Z. Ye, H. Zhu, M. Zhao, Y. Wang, J. Zhao, X. Yin, X. Zhang. Electrical generation and control of the valley carriers in a monolayer transition metal dichalcogenide, *Nature Nanotechnology*. **2016** 11, 598-602.
- [3] Y. Ye, Z. Ye, M. Gharghi, H. Zhu, M. Zhao, Y. Wang, X. Yin, X. Zhang. Exciton-dominant electroluminescence from a diode of monolayer MoS<sub>2</sub>, *Applied Physics Letters*. **2014** 104 (193508).
- [2] S.J. Tan, J.S. Kahn, T.L. Derrien, M.J. Campolongo, M. Zhao, DM. Smilgies, D. Luo. Crystallization of DNA-Capped Gold Nanoparticles in High-Concentration, Divalent Salt Environments, *Angewandte Chemie International Edition*. **2014** 53 (5).
- [1] M. J. Campolongo, S. J. Tan, DM. Smilgies, M. Zhao, Y. Chen, I. Xhangolli, W. Cheng, D. Luo. Crystalline Gibbs Monolayers of DNA-Functionalized Nanoparticles at the Air-Water Interface, *ACS Nano*. **2011** 5 (10), 7978-7985.

#### PRESENTATIONS

- Large-scale chemical assembly of atomically thin transistors and circuits, *2016 MRS*
- Chemical assembly of atomically thin transistors and circuits in a large scale, *2016 APS*
- Second-harmonic generation in an atomic phase-matched nonlinear 2D crystal, *2015 SPIE*
- Second-harmonic generation in a phase-matched nonlinear 2D Crystal, *2015 CLEO*
- Second-harmonic generation in a phase-match free nonlinear 2D Crystal, *2015 APS*

#### Poster Presentations

- Atomically phase-matched second-harmonic generation in a 2D Crystal, *2015 MRS*
- Investigating onset of nanoparticle crystallization, *2011 Cornell Research Forum*
- Investigating onset of nanoparticle crystallization, *2011 Cornell BioExpo*
- Optimizing synthesis of dendrimer-like DNA, *2010 Cornell Research Forum*