Jay A. Gupta

(a) Professional Preparation

- University of Illinois Urbana-Champaign, B.S. in Chemistry (cum laude), 1996
- University of Illinois Urbana-Champaign, B.S. in Physics (summa cum laude), 1996
- University of California, Santa Barbara, M.A. in Physics, 1999
- University of California, Santa Barbara, Ph.D. in Physics, 2002
- Postdoctoral Fellow, IBM Almaden Research Center, San Jose, 2/2002-8/2004

(b) Appointments

- Associate Professor of Physics, August 2012 to present
- Assistant Professor of Physics, August 2004 – July 2012
- Member, Chemical Physics Interdisciplinary Graduate Program: 2007 - present

(c) Related Publications

1. Lee, D. H. & Gupta, J. A. Tunable field control over the binding energy of single dopants by a charged vacancy in GaAs. *Science* **330,** 1807–10 (2010).
2. Gupta, J. A., R. Knobel, N. Samarth, and D. D. Awschalom. "Ultrafast Manipulation of Electron Spin Coherence." Science **292**, 2458–61 (2001).
3. Gupta, J. A., D. D. Awschalom, Al. L. Efros, and A. V. Rodina. "Spin Dynamics in Semiconductor Nanocrystals." Physical Review B **66** 125307 (2002).
4. Gohlke, David, Rohan Mishra, Oscar D. Restrepo, Donghun Lee, Wolfgang Windl, and Jay Gupta. "Atomic-Scale Engineering of the Electrostatic Landscape of Semiconductor Surfaces." *Nano Letters* **13**, 2418–22 (2013).
5. Lee, D. & Gupta, J. A. Tunable control over the ionization state of single Mn acceptors in GaAs with defect-induced band bending. *Nano Lett*. **11**, 2004–7 (2011).

(d) Other publications

1. Pinchuk, Igor V., Thaddeus J. Asel, Andrew Franson, Tiancong Zhu, Yuan-Ming Lu, Leonard J. Brillson, Ezekiel Johnston-Halperin, Jay A. Gupta, and Roland K. Kawakami. "Topological Dirac Semimetal Na3Bi Films in the Ultrathin Limit via Alternating Layer Molecular Beam Epitaxy." Apl Materials **6**, 086103 (2018).
2. O'Hara, Dante J. et al., , Tiancong Zhu, Amanda H. Trout, Adam S. Ahmed, Yunqiu Kelly Luo, Choong Hee Lee, Mark R. Brenner, Siddharth Rajan, Jay Gupta, David McComb, Roland Kawakami "Room Temperature Intrinsic Ferromagnetism in Epitaxial Manganese Selenide Films in the Monolayer Limit." Nano Letters **18**, 3125–31 (2018).
3. Lee, Donghun, David Gohlke, Anne Benjamin, and Jay A Gupta. "Influence of the Local Environment on Mn Acceptors in GaAs." *Journal of Physics: Condensed Matter* **27**, 154202 (2015).
4. Young, Justin R., Michael Chilcote, Matthew Barone, Jinsong Xu, Jyoti Katoch, Yunqiu Kelly Luo, Sara Mueller, Thaddeus Asel, Susan Fullerton-Shirley, Roland Kawakami, Jay Gupta, Leonard Brillson, Ezekiel Johnston-Halperin "Uniform Large-Area Growth of Nanotemplated High-Quality Monolayer MoS_2." Applied Physics Letters **110**, 263103 (2017).
5. Choi, T., Badal, M., Loth, S., Yoo, J.-W., Lutz, C. P., Heinrich, A. J., Epstein, A J., Stroud, D. G., and Gupta, J. A. Magnetism in Single Metalloorganic Complexes Formed by Atom Manipulation, *Nano letters* **14**, 1196-1201, (2014).

(e) Synergistic activities

1. *Co-director, Ohio State Physics Bridge Program* – (2013-present): Funding for ~ 3 students / year was obtained leveraging funds from the American Physical Society, OSU, and the NSF-funded MRSEC: Center

for Emergent Materials. This program is a 2-year Masters program designed to help promising students from underrepresented groups with insufficient undergraduate preparation, become more qualified to apply for PhD programs. Ongoing role includes a partnership with APS to expand this model to other STEM disciplines via respective professional societies as part of a new NSF-funded program.

2. *Executive Committee – American Vacuum Society, Electronic Materials Processing Division (2012-14).* The EMPD encompasses the science and engineering of materials and interfaces that advance device technology. Primary responsibility is to set sessions and invite speakers for the AVS annual meeting on themes including electronic, optical and magnetic properties of electronic materials, interface and defect engineering and novel materials and processing techniques.

3. Review: **(proposals)** *Petroleum research fund; NSF (CAREER, DMR); U.S. Civilian Research and Development Foundation, DOE (SBIR, BES), Netherlands Foundation for Fundamental Research on Matter (FOM), German DFG, Research Corporation for Science Advancement, Ohio Supercomputing Center, NSF MRI, NSF CMP, Alberta CANADA, Beckman Foundation (young investigators and postdoctoral fellowships), Cy-Terra (Cyprus supercomputing); ACS PRF.* **(journals)***: Physical Review, Science, Nature, Nature Nanotech, Nanoletters, APL, RSI, MRS proceedings, J. Physical Chemistry, ACS Nano, Physica E, JACS, Surface Science, J.Phys.ChemB*

4. *Outreach to high school students* – Columbus Science Center's Electronics Experts lectures (750+ students in 8 states + 1 Canadian province since 2006)

5. *Presentations (personal):* International conferences: 23 invited, 7 contributed; Seminars and colloquia – 29; *presentations* (*students*): International conferences: 4 invited, 47 contributed; seminars and colloquiua-25. Invited panelist, APS Bridge Program / Graduate Education Conference, 2017; SLAC SIMES review (2018).