Biographical Sketch

Min Ouyang

Current Professional Appointments

Professor of Physics, University of Maryland – College Park
Affiliate Appointment in the Department of Materials Science & Engineering

Academic Record

2002-2004	CNSI Postdoctoral Fellow in Physics, UCSB
Nov. 2001	Ph.D. in Chemistry, Harvard University
1999	A.M. in Chemistry, Harvard University
1997	M.S. in Electronics, Peking University
1996	B.S. in Electronics, Peking University

Professional Honors & Awards (2005- present)

2013 Scialog Fellow, Research Corporation
2010 University of Maryland CMPS Discovery Award
2007 Beckman Young Investigator Award
2007 ONR Young Investigator Award
2006 Ralph E. Powe Award
2006 Alfred P. Sloan Fellow
2006 NSF CAREER Award

Patent and Invention Disclosure

US 20120267605 Methods for the Production of Nanoscale Heterostructures

Selected Publications

36. H. Cun *et al.*, Tuning Structural and Mechanical Properties of Two-Dimensional Molecular Crystals: The Roles of Carbon Side Chains. *Nano Lett*. **12**, 1229 (2012).

35. J. Zhang, Y. Tang, K. Lee & M. Ouyang, Tailoring Light-Matter-Spin Interactions in Colloidal Hetero-Nanostructures. *Nature* **466**, 91 (2010).
(related news article: New Type of Light-Matter Interaction: Advance in Quantum Computing and Energy Conversion Technology. http://www.sciencedaily.com/releases/2010/07/100702152409.htm).

34. J. Zhang, Y. Tang, K. Lee & M. Ouyang, Nonepitaxial Growth of Hybrid Core-Shell Nanostructures with Large Lattice Mismatches. *Science* **327**, 1634 (2010).
(related news article: Chemical Thermodynamics Overtakes Epitaxy. http://www.computescotland.com/3191.php)

33. Y. Tang, A.F. Goncharov, V.V. Struzhkin, R.J. Hemley & M. Ouyang, Spin of Semiconductor Quantum Dots under Hydrostatic Pressure. *Nano Lett.* **10**, 358 (2010).

32. J. Zhang, Y. Tang, L. Weng & M. Ouyang, Versatile Strategy for Precisely Tailored Core@Shell Nanostructures with Single Shell Layer Accuracy: the Case of Metallic Shell. *Nano Lett.* **9**, 4061 (2009).

31. Y. Zhang, Y. Tang, K. Lee & M. Ouyang, Catalytic and Catalyst-free Synthesis of CdSe Nanostructures with Single-Source Molecular Precursor and Related Device Application. *Nano Lett*. **9**, 437 (2009).

30. K. Lee, Y. Tang & M. Ouyang, Self-ordered, Controlled Structure Nanoporous Membranes Using Constant Current Anodization. *Nano Lett.* **8**, 4624 (2008).

29. Y. Tang & M. Ouyang, Tailoring Properties and Functionalities of Metal Nanoparticles through Crystallinity Engineering. *Nature Materials* **6**, 754 (2007)

(related News & Views article: Is perfect better? *Nature Materials* **6**, 716 (2007)).

26. M. Ouyang & D.D. Awschalom, Coherent Spin Transfer between Molecularly Bridged Quantum Dots. *Science* **301**, 1074 (2003)

(related news article: Quantum dots chemically wired for spintronics, *Science* **301**, 580 (2003)).

25. M. Ouyang, J.-L. Huang & C.M. Lieber, Fundamental Electronic Properties and Applications of Single-Walled Carbon Nanotubes. *Acc.Chem.Res.* **35**, 1018 (2002) (invited review).

24. M. Ouyang, J.-L. Huang & C.M. Lieber, Scanning Tunneling Microscopy Studies of the One-Dimensional Electronic Properties of Single-Walled Carbon Nanotubes. *Annu.Rev.Phys.Chem.* **53**, 091801 (2002) (invited review).

23. M. Ouyang, J.-L. Huang & C.M. Lieber, Determination of One Dimensional Energy Dispersion of Single-Walled Carbon Nanotubes by Resonant Electron Scattering. *Phys.Rev.Lett*. **88**, 066804 (2002).

22. M. Ouyang, J.-L. Huang, C.L. Cheung & C.M. Lieber, Atomically Resolved Single-Walled Carbon Nanotube Intramolecular Junctions. *Science* **291**, 97 (2001).

21. M. Ouyang, J.-L. Huang, C.L. Cheung & C.M. Lieber, Energy Gaps in "Metallic" Single-Walled Carbon Nanotubes. *Science* **292**, 702 (2001)

(related news article: Burn and Interrogate, *Science* **292**, 650 (2001)).

20. J.T. Hu[*], M. Ouyang[*], P.D. Yang & C.M. Lieber, Controlled Growth and Electrical Properties of Heterojunctions of Carbon Nanotubes and Silicon Nanowires. *Nature* **399**, 48 (1999). [*] ***Contributed equally to this work***

Synergistic Activities

1. External review panels:

- NSF DMR-CMP review Panel (2010, 2013);
- DOE review Panel (2012);
- NSF MRI/IMR review Panel (2008, 2012, 2013);

• Proposal reviewer for *NSF*, *U.S. Civilian Research & Development Foundation (CRDF)*, *The Netherlands Organisation for Scientific Research (NOW) funds*, and *World Scientific Press*;

• Journal referee for *Science*, *Nature*, *Nano Lett.*, *Phys.Rev.Lett*., *J.Phys.Chem.A&B&C*, *J.Solid State Chem*., *Appl.Phys.Lett*., *Phys.Rev.B*., *J.Am.Chem.Soc*., *IEEE Transactions*, *J.Phys.Cond.Matt*., *J.Phys.D*., *ACS Nano*, *Adv.Mater*., *Acta Materialia*, *J.Nanoscience and Nanotechnology*, *Nanotechnology*, *Rev.Sci.Instru*., and *Nanoscale Res.Lett.*

2. Conference organization: conference session chair of *Seeing at the Nanoscale I* (2003); sorter and program organizer for APS March meeting (2005); and organization committee of International Workshop on Nanostructure & Nanodevices (2005-present).

3. Communication of excitement of science to non-scientists and educational outreach programs: Summer REU program (one of Dr. Ouyang's summer students, Ms. Paris Alexander, won the first place for Best Poster in the 30th Annual National Society of Black Physicists Conference in Boston, 2007); middle school science conferences primarily in the underrepresented groups, multicultural presentation in middle and elementary schools, annual Physics is Phun, annual Maryland Day, annual Nano Day, lab tours for high school students and the community.

University Services

1. Physics council committee (2005-2007; 2013)

2. Salary advisory committee (2007-2008)

3. Expanded qualifying examination committee (2007-2009, 2013)

4. Physics qualify examination grader (2004, 2005, 2006, 2007, 2008, 2012, 2013)

5. Laboratory committee (2007-present)

6. Undergraduate advising (2005- present)

7. 1st and 2nd yrs graduate advisor (2004- present)

8. Faculty (CM experiment) search committee (2007-2008)

9. CNAM post-doctoral fellowship committee (2007-2009)

10. CNAM colloquium organizer (2007-2010)

11. CNAM central facility committee (2009)

12. University Nanocenter lab manager search committee (2005)

13. University TEM shared facility oversight committee (2006-present)

14. Physics qualify examination framer (2010)

15. Teaching review of junior faculty (2012)

16. Teaching interview with faculty candidate (2013)

17. Physics Faculty Committees Election (2013- present)

Teaching Activities

1. Course and Curriculum Development: Dr. Ouyang has independently developed and opened a new course (2/3 lecture+1/3 laboratory integrated in one semester) for senior undergraduates and graduates in physics, chemistry and engineering (this course is cross-listed in three colleges of physics, chemistry and engineering); Dr. Ouyang has modified two existing lab manuals for undergraduate introductory laboratory courses.

2. Dr. Ouyang has taught a new course developed by himself (Spring 2008, Spring 2009, Spring 2010): PHYS499M/ENMA489X (*Physics, Materials Chemistry and Device Applications at the Nanoscale*).

3. Dr. Ouyang has taught a large introductory physics lecture course for engineering major (~100 students/class) (Spring 2006, Spring 2007, Spring 2011, Spring 2012, Spring 2013, Spring 2014): PHYS270 (General Physics: Electrodynamics, Light, Relativity and Modern Physics)

4. Dr. Ouyang has taught two large introductory physics laboratory courses for engineering major (~500 students/semester) (Fall 2007, Fall 2008, Fall 2009): PHYS261 (General Physics Laboratory I: Vibrations, Waves, Heat, Electricity and Magnetism) and PHYS 271 (General Physics Laboratory II: Electrodynamics, Light, Relativity and Modern Physics).

5. Dr. Ouyang has taught an introductory physics laboratory course for physics major (~30 students/semester) (Fall 2004, Fall 2005, Fall 2006, Fall 2012, Fall 2013): PHYS275 (Experimental Physics I: Mechanics, Heat and Field).

Advising Activities

1. Postdoctoral researchers:

Dr. Youxiang Zhang (Associate professor of chemistry in Wuhan University);

Dr. Jiatao Zhang (Professor of materials science in the Beijing Institute of Technology, Beijing).

Dr. Jianxiao Gong (from 2013- present)

Dr. Lin Weng (from 2013- present)

Dr. Pengpeng Wang (from 2014-present)

2. Graduate students:

Dr. Yun Tang (graduated in Summer 2009, and currently a full professor in FuDan University);

Dr. Qi Liu (co-advised; and currently research scientist in Institute of Microelectronics, P.R. China)

Dr. Kwan Lee (graduated in 2011, and currently a senior engineer in Samsung, Korea);

3. Undergraduate summer students: Nick Du (2011), Izath Aguilar (2008), Paris Alexander (2006), Lina Gonzalez (2006), Garry Brock (2005).