

Jinyao Tang

8N-20 Kadoorie Biological Science Bldg., the University of Hong Kong, Pokfulam, Hong Kong

Email: Jinyao@hku.hk Office: (+852) 2299 0369

EDUCATION and TRAINING

University of California, Berkeley

Berkeley, CA

Postdoctoral Fellow

10/2008-10/2012

Department of Chemistry

Advisor: Prof. Peidong Yang

Columbia University, Graduate School of Arts and Sciences

New York, NY

Ph.D. in Chemistry

08/2008

Department of Chemistry

Thesis Title: *Encoding Molecular-Wire Formation within Nanoscale Sockets and Mass Transport in Single Wall Carbon Nanotube*

Advisor: Prof. Colin Nuckolls

University of Science and Technology of China

Anhui, China

B.S. in Chemical Physics

07/2003

Department of Chemical Physics

Advisor: Prof. Jianguo Hou

PROFESSIONAL AND RESEARCH EXPERIENCE

The University of Hong Kong

Hong Kong Island, Hong Kong

Assistant Professor in Department of Chemistry

10/2012-present

Lawrence Berkeley National Laboratory

Berkeley, CA

Postdoctoral Research Scientist

07/2008 - 10/2012

- Develop silicon based nanostructure as high efficient thermoelectric material for energy conversion
- Develop nanowire based high efficiency solar cells
- Develop nanowire based high efficiency photoelectrochemical cells for solar fuels

Columbia University

New York, NY

Graduate Research Assistant

01/2004 - 07/2008

- Invented a novel process to fabricate molecular scale nanogaps for molecular electronics application
- Developed a two-step modular assemble method to bridge nanogaps with organic molecules
- Studied the electric properties of organic nanostructures, including nanoribbons and nanowires
- Explored the methodology of detecting and sensing the solution flow through individual single walled carbon nanotube and developed its applications in DNA sequencing

University of Science and Technology of China

Anhui, China

Undergraduate Research Assistant

10/2007 - 06/2008

TECHNICAL SKILLS

Specialize in complex nano-micro device fabrication and system integrating.

Electric and thermal characterization and imaging of nano-devices and solar cells.

SELECTED CONFERENCES

1. EIPBN 2006
Poster (Student Awards): “Chemically Responsive Molecular Transistors Fabricated by Self-Aligned Lithography and Chemical Self-Assembly”
2. APS March 2006
Presentation: “Self-aligned lithography and in-situ assembly of chemically responsive single-molecule transistors”
3. ACS March 2010
Presentation: “Holey Silicon film as efficient thermoelectric material”
4. Cleantech 2012
Invited Presentation: “Solution processed nanowire for solar energy conversion”
5. International Workshop on Materials Science and Materials Chemistry for Energy at Peking University 2012
Invited Presentation: “Nanoscience for Sustainable Energy”

SELECTED PUBLICATIONS

1. Tang, Jinyao. “Thermoelectric performance of Silicon nanomembranes” in SILICON NANOMEMBRANES: FUNDAMENTAL SCIENCE AND APPLICATIONS Wiley-VCH (2015), Ed. J. A.Rogers and J.-H. Ahn.
2. Liu, Chong; Tang, Jinyao; Chen, Hao Ming; Liu, Bin; Yang, Peidong. **Nano Letters**, 13 (6) 2989–2992 **2013**.
“A Fully Integrated Nanosystem of Semiconductor Nanowires for Direct Solar Water Splitting”
2. Liu, Chong; Sun, Jianwei; Tang, Jinyao; Yang, Peidong. **Nano Letters** 12, 5407-5411, (2012).
“Zn-Doped p-Type Gallium Phosphide Nanowire Photocathodes from a Surfactant-Free Solution Synthesis”
3. Tang, Jinyao; Huo, Ziyang; Brittman, Sarah; Yang, Peidong. **Nat. Nanotechnol.** (2011), **6**(9), 568-572
“Solution-processed core-shell nanowires for efficient photovoltaic cells.”
4. Cao, Di; Pang, Pei; He, Jin; Luo, Tao; Park, Jae Hyun; Krstic, Predrag; Nuckolls, Colin; Tang, Jinyao; Lindsay, Stuart. **ACS Nano.** (2011) **5**(4), 3113-3119.
“Electronic Sensitivity of Carbon Nanotubes to Internal Water Wetting.”
5. Lin, Feng; Hoang, Dat Tien; Tsung, Chia-Kuang; Huang, Wenyu; Lo, Sylvia Hsiao-Yun; Wood, Jennifer B.; Wang, Hungta; Tang, Jinyao; Yang, Peidong. **Nano Res.** (2011) **4**(1): p. 61-71.
“Catalytic properties of Pt cluster-decorated CeO₂ nanostructures.”
6. Tang, Jinyao; Wang, Hung-Ta; Lee, Dong Hyun; Fardy, Melissa; Huo, Ziyang; Russell, Thomas P.; Yang, Peidong. **Nano Lett.** 10 (2010), 4279
“Holey Silicon Film as Efficient Thermoelectric Material.”
7. Liu, Haitao; He, Jin; Tang, Jinyao; Liu, Hao; Pang, Pei; Cao, Di; Krstic, Predrag; Joseph, Sony; Lindsay, Stuart; Nuckolls, Colin. **Science** (2010), 327(5961), 64-67.
“Translocation of Single-Stranded DNA through Single-Walled Carbon Nanotubes.”
8. Jeon, Seokwoo; Lee, Changgu; Tang, Jinyao; Hone, James; Nuckolls, Colin. **Nano Res.** (2008), Vol. 1, No. 5, 427-433.
“Growth of Serpentine Carbon Nanotubes on Quartz Substrates and Their Electrical Properties.”
9. Tang, Jinyao; Wang, Yiliang; Klare, Jennifer E.; Tulevski, George S.; Wind, Shalon J.; Nuckolls, Colin. **Angew. Chem., Int. Ed.** (2007), 46(21), 3892-3895. (selected as Inside Cover)
“Encoding Molecular-Wire Formation within Nanoscale Sockets.”
10. Guo, Xuefeng; Myers, Matthew; Xiao, Shengxiong; Lefenfeld, Michael; Steiner, Rachel; Tulevski, George S.; Tang, Jinyao; Baumert, Julian; Leibfarth, Frank; Yardley, James T.; Steigerwald, Michael L.; Kim, Philip; Nuckolls, Colin. **Proc. Natl. Acad. Sci. U. S. A.** (2006), 103(31), 11452-11456.
“Chemoresponsive Monolayer Transistors”

11. Xiao, Shengxiong; Tang, Jinyao; Beetz, Tobias; Guo, Xuefeng; Tremblay, Noah; Siegrist, Theo; Zhu, Yimei; Steigerwald, Michael; Nuckolls, Colin **J. Am. Chem. Soc.** (2006), 128 (33), 10700–10701

“Transferring Self-Assembled, Nanoscale Cables into Electrical Devices.”

12. Chen, Zhihong; Appenzeller, Joerg; Lin, Yu-Ming; Sippel-Oakley, Jennifer; Rinzler, Andrew G.; Tang, Jinyao; Wind, Shalom J.; Solomon, Paul M.; Avouris, Phaedon. **Science** (2006), 311(5768), 1735.

“An integrated logic circuit assembled on a single carbon nanotube.”

13. Tang, Jinyao; Wang, Yiliang; Nuckolls, Colin; Wind, Samuel J. **J. Vac. Sci. Technol. B** (2006), 24(6), 3227-3229.

“Chemically Responsive Molecular Transistors Fabricated by Self-Aligned Lithography and Chemical Self-Assembly”

14. Tang, Jinyao; De Poortere, E. P.; Klare, Jennifer E.; Nuckolls, Colin; Wind, Samuel J. **Microelectron Eng.** (2006), 83(4-9), 1706-1709.

“Single-Molecule Transistor Fabrication by Self-Aligned Lithography and In Situ Molecular Assembly.”

PATENTS

1. Methods for Fabricating Nanoscale Electrodes and Uses Thereof.

U.S. Pat. Appl. Publ. (2007), US 2007/0059645 A1.

2. Nanopore and Carbon Nanotube Based DNA Sequencer

PCT Int. Appl. (2009), WO/2009/117517, PCT/US2009/037563.

3. Formation of Nanoscale Carbon Nanotube Electrodes using a self-aligned Nanogap Mask

U.S. Pat. Appl. Publ. (2011), US 2011/0268884 A1.

4. Nanostructured Silicon with Useful Thermoelectric Properties

U.S. Pat. Appl. Publ. (2012) 20120282435 A1

5. Mobility controlled single macromolecule in nanofluidic system and its application as macromolecule sequencer

U.S. Pat. Pending. Application Number: 13615087

Selective Awards

- Early Career Award 2014-2015, Research Grand Council, Hong Kong