# Tony Wu


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## EDUCATION

**Massachusetts Institute of Technology, Cambridge, MA**

M.S. in Electrical Engineering and Computer Science, 2011.9~2013.6

- 4 As for required graduate courses
  - Inference and Information, Quantum and Statistical Physics, Optics and Photonics, Solid-State Application

Ph.D. in Electrical Engineering and Computer Science, 2013.9~2016.6 (expected)

- Major in Engineering Physics, focus on Organic Semiconductor (OLED, OPV)
- Minor in Computer Science: Numerical Simulation, Computer Vision (A)

**National Taiwan University, Taipei, Taiwan**

B.S. in Electrical Engineering, B.S. in Physics, 2007.9~2011.6

- Passed the entrance exam with the first place.
- Rank: 6$^{th}$ out of 269 students in the program (about top 2%)
  - Courses: Algorithm, Data Structure, Quantum Mechanics, Microelectronics, Network and Media Lab

## HONORS

**Academic Awards**

National Science Council Grant for Research Project, 2010.7~2011.2
3 Presidential Award (top 5% in a semester) in National Taiwan University
Silver Medal in International Physics Olympiad (IPhO), 2007.7
Gold Medal in Asian Physics Olympiad (APHO), 2007.4

- First Prize in Experimental Competition

## PROJECTS & PUBLICATIONS

**Organic Semiconductor (MIT, Spin & Excitonic Engineering Group)**. Using organic semiconductor for solar cell and light-emitting devices.

- **TC Wu**, NJ Thompson, DN Congreve, E Hontz, SR Yost, T Van Voorhis, MA Baldo. Singlet fission efficiency in tetracene-based organic solar cells. Applied Physics Letters **104**, 193901 (2014).
- SR Yost, J Lee, MWB Wilson, **T Wu**, DP McMahon, RR Parkhurst, NJ Thompson, DN Congreve, A Rao, K Johnson, MY Sfeir, MG Bawendi, TM Swager, RH Friend, MA Baldo, T Van Voorhis. A transferable model for singlet-fission kinetics. Nature chemistry **6**, 492-497 (2014).
- **TC Wu**, DN Congreve, MA Baldo. Solid state photon upconversion utilizing thermally activated delayed fluorescence molecules as triplet sensitizer. Applied Physics Letters **107**, 031103 (2015).
- K Kawasumi, **T Wu**, T Zhu, HS Chae, T Van Voorhis, MA Baldo, TM Swager. Thermally Activated Delayed Fluorescence Materials Based on Homoconjugation Effect of Donor–Acceptor Triptycenes. Journal of the American Chemical Society, (2015).
- W Chang, DN Congreve, E Hontz, ME Bahlke, DP McMahon, S Reineke, **TC Wu**, V Bulović, T Van Voorhis, MA Baldo. Spin-dependent charge transfer state design rules in organic photovoltaics. Nature communications **6**, (2015).

**Dye-Sensitized Solar Cell (NTU)**. Low cost thin film solar cell.

- YC Hsu, **TCC Wu**, IC Cheng, JZ Chen, MR Yang. Dye-Sensitized Solar Cells Made by Polystyrene (PS) Nanoparticle Embedded TiO2 Paste. Japanese Journal of Applied Physics **50**, (2011).

**Course Projects.**

- Computer Vision, MIT, 2013.
  - High Dynamic Motion Blur Photography. Utilizing multiple photo to create better dynamic motion blur with normal cameras.
- Network and Media Lab, NTU, 2011.
  - Online video chat program.
  - Real time multiplayer android game.
  - Human gesture mirroring robot project.
- Algorithm, NTU, 2008.
  - Global routing for optimized circuit design.

**Personal Projects.**

- Automated instrument control package for Spin & Excitonic Engineering Group in python
- Website designs
  - Aquafresco.co: A new startup company on recycling waste water
  - Catana Lab: Harvard Medical School research group. http://catanalab.github.io/website/
- Coal Map. http://verysure.github.io/coalmap/
  - Open source project for plotting coal plants that should be substituted by alternative energy solar or wind.
  - Won **first prize** in MIT Clean Earth Hackathon

## TEACHING EXPERIENCES

Tutors:

- Physics, math, electromagnetics, C++, Microelectronics

National Experimental High School Science Camp:

- Founder
- Physics and calculus

National Taiwan University Electrical Engineering Summer Camp:

- C++ and Java
- Design and modify Java mobile games (Chess; Tanks) for AI implementation

## SKILLS

Programming:

- Python, C, C++, Javascript, Java, Matlab, CSS, HTML

Laboratory Experience:

- Thermal Deposition Chamber, Clean Room Work Experiences, Furnace, Sputter

Swimming (National Intercollegiate Athletic Games):

- Silver Medal, 4x200 meter Freestyle Relay, 2010.5
- Bronze Medal, 4x100 meter Freestyle Relay, 2010.5
- Broke Champion Record in heats, 4x200 meter Freestyle Relay, 2009.5