

Jeff Tza-Huei Wang

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Mechanical Engineering
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Education

Ph.D. Mechanical Engineering, University of California, Los Angeles, 1998 - 2002
M.S. Mechanical Engineering, National Taiwan University, 1992 - 1994
B.S. Mechanical Engineering, National Taiwan University, 1988 - 1992

Awards

- Best Paper/Travel Award, the First World Congress for Chinese Biomedical Engineers, held in Taipei, Taiwan, December 11-15, 2002. December 11, 2002
- Johns Hopkins University Provost's Undergraduate Research Award (PURA) awarded to Wang's undergraduate student Marcos Kuroki, 2004
- Johns Hopkins University Provost's Undergraduate Research Award (PURA) awarded to Wang's undergraduate student Eric Simone, 2003
- CAREER Award, National Science Foundation July 01, 2006 - June 30, 2011

Professional Activities

- Served in the NSF Nanoscale Interdisciplinary Research Teams (NIRT) -Bioengineering Panel
- Member in the U.S. delegate attending the First US-China Nanotechnology Forum, hosted by National Science Foundation and Chinese Academy of Sciences, Beijing, May 17-19, 2004. (Dr. Wang is one of the three junior members in the delegate)
- Served in the NSF Nanoscale Interdisciplinary Research Teams (NIRT) -Bioengineering Panel, 2005
- Editorial board member of Nanomedicine: Nanotechnology, Biology and Medicine, 2005 -
- Conference Section Chair : The International Conference on Bio-nano-Informatics (BNI) Fusion, 20-22, July 2005, Marina del Rey, California, USA
- Technical Program Committee: The 7th IEEE International Conference on Nanotechnology (IEEE NANO-2007), Aug 2-4, 2007, Hong Kong
- Member of the Technical Committee on Nanosensors and Nanoactuators for the IEEE Nanotechnology Council, 2006-
- Technical Program Committee. The First Annual IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE NEMS 2006)
- Biomechanics Committee, Mechanical Engineering Department, Johns Hopkins University
- Engineering Mechanics Undergraduate Curriculum Committee, Mechanical Engineering Department, Johns Hopkins University
- Serve as a reviewer for grant proposals submitted to the following organizations:
 - National Institutes of Health, Center for Scientific Review Special Emphasis Panel, 2006
 - National Institutes of Health, NCI SBIR Topic 219, Platform Biosensor Technologies for Point-of-Care Diagnostics, 2006
 - Excellence Research Project of National Taiwan University, Taipei, Taiwan, 2006
 - Pilot Research Program, NIEHS Center in Molecular Toxicology, Vanderbilt University, 2006
 - U.S. Army Research Office, Chemical and Biological Defense Basic Research Program, 2006

Publications: Book Chapters

1. Wang, T. H., C. Puleo, H. C. Yeh. "Single Molecule DNA Detection." INTEGRATED BIOCHIPS FOR DNA ANALYSIS. Landes Bioscience, 2007. (*In Press*)
2. Liu, K., Y.P. Ho and T.H. Wang. "Nanoparticle-based Sensor Assemblies for Biomolecules Detection." BOTTOM-UP NANOFABRICATION: Supramolecules, Self-Assemblies, and Organized Films. , 2007. (*Submitted*)

3. Wang, T.H. and C. M. Ho, . "Nano/Micro Technologies for Detecting a Single DNA Molecule." *Frontiers in Biomedical Engineering*. KluwerAcademic/Plenum Publishers, 2003. 477-493.

Publications: Journals

1. Nalayanda, D.D. , C.M. Puleo, W.B. Fulton, S. Hosmane, T. H. Wang and F. Abdullah. "Characterization of Alveolar Epithelial and Microvascular Endothelial Cell Growth within a Microfluidic device: Building the foundation for engineering a living alveolo-capillary interface within microchannels ". (2007) (*In Preparation*)
2. Chao, S.Y, Y.P. Ho, V. Bailey and T.H. Wang. "Quantification of Low-Concentration DNA Using Single-molecule Detection and Velocity Measurement in a Microchannel". (2007) (*In Preparation*)
3. Bailey V., T. C. Lim and T. H. Wang . "Investigation of Quantum Dot Mediated FRET using BOBO-3 as an Acceptor". (2007) (*In Preparation*)
4. Yeh, H.C. and T.H. Wang. "Fast-blinking kinetics of cyanine dye Cy5 for DNA quantification and for detection of single-nucleotide differences". (2007) (*In Preparation*)
5. Ho, Y.P., H.H. Chen, K.W. Leong and T.H. Wang. "Evaluating the Intracellular Stability and Unpacking of DNA Nanocomplexes by Quantum Dots-FRET". *Journal of Controlled Release* 116 (2006):83-89
6. Yeh, H.C., Y.P. Ho. and T.H. Wang. "Homogeneous point mutation detection by quantum dot-mediated two-color fluorescence coincidence analysis". *Nucleic Acids Research* 34. 5 (2006):e35
7. Puleo, C.M. , K. Liu, and T.H. Wang. "Pushing miRNA quantification to the limits: high-throughput miRNA gene expression analysis using single-molecule detection". *Nanomedicine* 1. 1 (2006):123
8. Yeh, H.C., C. Puleo, T.C. Lim, Y.P. Ho, P. Giza, R.C. Huang and T.H. Wang. "A microfluidic-FCS platform for investigation on the dissociation of Sp1-DNA complex by doxorubicin". *Nucleic Acids Research* 34. 21 (2006):e144
9. Zhang C., S.Y. Chao., T.H. Wang. "Comparative Quantification of Nucleic Acids Using Single-Molecule Detection and Molecular Beacons". *The Analyst* 130. 4 (2005):483-488
10. Zhang C., S.C. Yeh, M. Kuroki and T.H. Wang. "Single Quantum Dot-Based DNA Nanosensor ". *Nature Materials* 4. 11 (2005):826-831
11. Wang T.H., Y. Peng, C.Chen, P.K. Wong and C.M. Ho . "Single-molecule tracing on a fluidic microchip for quantitative detection of low-abundance nucleic acids ". *Journal of the American Chemical Society* 127. 15 (2005):5354-5359 (Highlighted in the Nanozone in Nature, 2005)
12. Yeh, H.C, Y.P. Ho, and T.H. Wang. "Quantum-dot mediated biosensing assays for specific nucleic acid detection". *Nanomedicine: Biol. Med.* 1. 2 (2005):115-121
13. Ho, Y.P.,M.C. Kung, S. Yang, T.H. Wang . "Multiplexed Hybridization Detection with Multicolor Colocalization of Quantum Dot Nanoprobes". *Nano Letters* 5. 9 (2005):1693-1697
14. Yeh, H.C., S.Y. Chao, Y.P. Ho and T.H. Wang. "Single-Molecule Detection and Probe Strategies for Rapid and Ultrasensitive Genomic Detection". *Current Pharmaceutical Biotechnology* 6. 6 (2005):453-461
15. Wong P. K., T. H. Wang, J. H. Deval, and C. M. Ho. "Electrokinetics in Micro Devices for Biotechnology Applications". *IEEE/ASME Transactions on Mechatronics* 9. 2 (2004):366-376
16. Wong P.K., C.Y. Chen, T.H. Wang and C.M. Ho. "Electrokinetic Bioprocessor for Concentrating Cells and Molecules". *Analytical Chemistry* 76. 23 (2004):6908-6914

Publications: Patents

1. Wang, T. H.. "Method for determining standard cycle time of a stage dynamically". US patent, US5825650 (1997) (*Published*)
2. Ho, C. M., J. Liao, and T. H. Wang. "Ultrasensitive Molecule Detection of Urinary Tract Infection". US Patent (*Submitted*)
3. Ho, C.M., and T.H. Wang. "Electronics Integrated With Bio-Reactor/Channel For Detection Or Fabrication Of Bio-Materials". US Patent (*Submitted*)
4. Ho C.M., J. Miller, J. Huang, T.H. Wang, and M. Liu. "Electrochemical Detection of Mismatch in Nucleic Acids(EDEMNA)". (*Submitted*)