

## 王中林博士 (Zhong Lin Wang, Ph. D.) 簡介

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### Appointments

2010 – Present	<b>Hightower Chair in Materials Science and Engineering</b> , Georgia Institute of Technology
2006 – Present	<b>College of Engineering Distinguished Professor</b> , Georgia Institute of Technology
2004 – Present	<b>Regents' Professor</b> , Georgia Institute of Technology
4/1999 – 2004	<b>Professor</b> , School of Materials Science and Engineering, Georgia Institute of Technology
5/1995 – 4/1999	<b>Associate Professor</b> , School of Materials Science and Engineering, Georgia Institute of Technology
12/1993 – 2/1995	<b>Research Scientist</b> , National Institute of Standards and Technology
9/1990 – 4/1993	<b>Research Associate Professor</b> , Metals and Ceramics Division, Oak Ridge National Laboratory and Department of Materials Science, University of Tennessee
11/1989 – 9/1990	<b>Research Fellow</b> , U.S. Department of Energy, Metals and Ceramics Division, Oak Ridge National Laboratory
10/1988 – 10/1989	<b>Research Fellow</b> , Cavendish Laboratory, University of Cambridge, England
9/1987 – 9/1988	<b>Visiting Lecturer</b> , Department of Materials Science & Engineering, State University of New York at Stony Brook

### Research Accomplishments:

Dr. Wang has made original and innovative contributions to the synthesis, discovery, characterization and understanding of fundamental physical properties of oxide nanobelts and nanowires, as well as applications of nanowires in energy sciences, electronics, optoelectronics and biological science. He is the leader figure in ZnO nanostructure research. His discovery and breakthroughs in developing nanogenerators establish the principle and technological road map for harvesting mechanical energy from environment and biological systems for powering a personal electronics. His research on self-powered nanosystems has inspired the worldwide effort in academia and industry for studying energy for micro-nano-systems, which is now a distinct disciplinary in energy research and future sensor networks. He coined and pioneered the field of piezotronics and piezo-phototronics by introducing piezoelectric potential gated charge transport process in fabricating new electronic and optoelectronic devices. This historical breakthrough by redesign CMOS transistor has important applications in smart MEMS/NEMS,

nanorobotics, human-electronics interface and sensors. Wang also invented and pioneered the *in-situ* technique for measuring the mechanical and electrical properties of a single nanotube/nanowire inside a transmission electron microscope (TEM).

Dr. Wang is a pioneer and world leader in nanoscience and nanotechnology for his outstanding creativity and productivity. He has authored and co-authored **5** scientific reference and textbooks and over **700** peer reviewed journal articles (**14** in *Nature* and *Science*, **6** in *Nature sister journals*), **45** review papers and book chapters, edited and co-edited **14** volumes of books on nanotechnology, and held **32** patents. Dr. Wang is the world's top 5 most cited authors in nanotechnology. His entire publications have been cited for over **48,000** times. The H-index of his publications is **107**. He has delivered over **700** keynote, plenary and invited talks at international and national conferences as well as universities and research institutes worldwide.

Dr. Wang was elected as a foreign member of the Chinese Academy of Sciences in 2009, member of European Academy of Sciences in 2002, fellow of American Physical Society in 2005, fellow of AAAS in 2006, fellow of Materials Research Society in 2008, fellow of Microscopy Society of America in 2010, and fellow of the World Innovation Foundation in 2002. He is an honorable professor of over 10 universities in China and Europe. He received 2012 Edward Orton Memorial Lecture Award from American Ceramic Society, 2011 MRS Medal from the Materials Research Society, 1999 Burton Medal from Microscopy Society of America, 2001 S.T. Li prize for Outstanding Contribution in Nanoscience and Nanotechnology, the 2009 Purdy Award from American Ceramic Society, NanoTech Briefs, Top50 award in 2005, the 2000 and 2005 Georgia Tech Outstanding Faculty Research Author Awards, Sigma Xi 2005 sustain research awards, Sigma Xi 1998 and 2002 best paper awards, NSF CAREER in 1998. His breakthrough researches in the last 15 years have been featured by over 50 media world wide including *CNN*, *BBC*, *FOX News*, *New York Times*, *Washington Post*, *NPR radio*, *Time Magazine*, *National Geography Magazine*, *Discovery Magazine*, *New Scientists*, and *Scientific America*. Dr. Wang is the #25 in the list of the world's greatest scientists (<http://superstarsofscience.com/scientists>).

### **Selected Publications**

1. X. D. Wang, J. H. Song, J. Liu, and Z. L. Wang, *Direct current nanogenerator driven by ultrasonic wave*, **Science**, 316: p.102-105 (2007).
2. Z. L. Wang and J. H. Song, *Piezoelectric Nanogenerators Based on Zinc Oxide Nanowire Arrays*, **Science**, 312: p.242-246 (2006).
3. P. X. Gao, Y. Ding, W. Mai, W. L. Hughes, C. Lao and Z.L. Wang, *Conversion of Zinc Oxide Nanobelt into Superlattice-Structured Nanohelices*, **Science**, 309: p.1700-1704 (2005).
4. X. Y. Kong, Y. Ding, R. S. Yang, Z. L. Wang, *Single-crystal Nanorings Formed by Epitaxial Self-coiling of Polar-nanobelts*, **Science**, 303: p.1348-1351 (2004).
5. Z. W. Pan, Z. R. Dai and Z. L. Wang, *Nanobelts of Semiconducting Oxides*, **Science**, 291: p.1947-1949 (2001).
6. X. D. Feng, D. C. Sayle, Z. L. Wang, S. Paras, B. Santora, T. Sutorik, T. X. T. Sayle, Y. Yang, Y. Ding, X. D. Wang, Y. Her, *Converting Ceria Polyhedral Nanoparticles into Single-Crystal Nanospheres*, **Science**, 312:

p.1504-1508 (2006).

7. H. Zeng, J. Li, J. -P. Liu, Z. L. Wang, S. Sun, *Exchange-coupled Nanocomposites Magnets by Nanoparticle Self-assembly*, **Nature**, 420: p.395-398 (2002).
8. P. Poncharal, Z. L. Wang, D. Ugarte and W. A. de Heer, *Electrostatic Deflections and Electromechanical Resonances of Carbon Nanotubes*, **Science**, 283: p.1513-1516 (1999).
9. S. Frank, P. Poncharal, Z. L. Wang, and W. A. de Heer, *Carbon Nanotube Quantum Resistors*, **Science**, 280: p.1744-1746 (1998).
10. T. S. Ahmadi, Z. L. Wang, T. C. Green, A. Henglein and M. A. El-Sayed, *Shape-controlled Synthesis of Colloidal Platinum Nanoparticles*, **Science**, 272: p.1924-1926 (1996).