

Education

An education background that combines engineering and physics: post-doc in materials and mechanics at Lawrence Livermore National Laboratory (1995-1997), PhD in nuclear engineering from UCLA (1995), MS in theoretical nuclear physics from Institute of Atomic Energy at the Chinese Academy of Sciences (1987), and BS in physics from Hebei Normal University of China (1984).

University experience

- Northeastern University: Professor and Department Chair of Mechanical and Industrial Engineering, Northeastern University (2013-now).
- University of Connecticut: Connecticut Clean Energy Fund Endowed Professor (in Sustainable Energy at the Department of Mechanical Engineering (2009-2013)).
- Rensselaer Polytechnic Institute: Professor (2006-2009) & Associate Professor (2002-2006) with tenure granted in 2005.
- Hong Kong Polytechnic University: Associate Professor (1999-2002) & Assistant Professor (1998-1999).
- *Supervision of 40+ PhD students and post-docs; plus numerous MS, undergraduate, and pre-college students.*

Major laboratory experience

- Lawrence Livermore National Laboratory: Term Staff Member (1997-1998) & Post-doc Staff (1995-1997).
- Institute of Atomic Energy, Chinese Academy of Sciences: Assistant Physicist (1988-1990) & Practice Physicist (1987-1988).
- Bells Laboratories and Oak Ridge National Lab: Visiting Scientist.

Honors & Awards

- Elected Fellow, Society of Engineering Science
- Elected Fellow, American Society of Mechanical Engineers
- Elected Member, Connecticut Academy of Science and Engineering
- Elected Senior Member, Chinese Mechanical Engineering Society
- Royal Society of London KTP Visiting Professor at Hong Kong Polytechnic University
- Hseu Shen Tsien Engineering Science Professor at Institute of Mechanics of Chinese Academy of Sciences
- Connecticut Clean Energy Endowed Professor at University of Connecticut
- Recipient of Research Excellence Awards at each of the three previous universities: University of Connecticut, Rensselaer Polytechnic Institute, and Hong Kong Polytechnic University
- Recipient of Outstanding Faculty Advisor Award, School of Engineering, University of Connecticut

Sponsors of research

National Science Foundation (US); Office of Basic Energy Science of Department of Energy (US); Defense Threat Reduction Agency (US); Nuclear Regulatory Commission (US); UTC Hamilton

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and Sundstrand (US); Lawrence Livermore National Laboratory (US); Army Research Office (US); Interconnect Focus Center (US); Hong Kong Research Grants Council (Hong Kong/China); German DAAD – Hong Kong Research Grants Council (Germany and Hong Kong/China).

Research interests and outcomes

- The primary focus of research is the physical vapor deposition of nanorods – via a combination of theories, atomistic simulations, and experiments.
- The second focus of research is the development of atomistic simulation methods – including interatomic potentials and polycrystalline Monte Carlo algorithms.
- Other research interests include solar energy, mechanics of nanostructures, and materials degradation by radiation and/or corrosion.
- The following are ten representative publications out of 100+ (with 4000+ citations and H-index of 31+ according):
 1. Hanchen Huang, *A Framework of Growing Crystalline Nanorods*, **JOM** 64 (2012) 1253.
 2. Hanchen Huang and H. van Swygenhoven (authors and editors), *Atomistic Simulations of Mechanics of Nanostructures (Overview)*, **MRS Bulletin** 34 (2009) 160.
 3. Hanchen Huang, *Insights: Multiscale Modeling and Simulation*, in **Sandia Technology**, Fall 2007.
 4. Hanchen Huang, *Texture Evolution During Thin Film Deposition*, in **Handbook of Materials Modeling**, Springer, 2005.
 5. X. B. Niu, S. P. Stagon, Hanchen Huang*, J. K. Baldwin, and A. Misra, “Smallest Metallic Nanorods Using Physical Vapor Deposition”, **Physical Review Letters** 110, 136102 (2013);
 6. L. G. Zhou and Hanchen Huang,* *A Characteristic Length Scale of Nanorods Diameter during Growth*, **Physical Review Letters** 101 (2008) 266102; featured in **DoE Office of Science Weekly** with the title “*Surface Science Breakthrough: Reason for Nanorod Growth Discovered*”.
 7. H. W. Shim and Hanchen Huang*, *Nanowebs and Nanocables of Silicon Carbide*, **Nanotechnology** 18 (2007) 335607.
 8. Jian Wang, Hanchen Huang*, S. V. Kesapragada, and Daniel Gall, *Growth of Y-shaped Nanorods through Physical Vapor Deposition*, **Nano Letters** 5 (2005) 2505.
 9. S. J. Liu, Hanchen Huang*, and C. H. Woo, *Schwoebel-Ehrlich Barrier: From Two to Three Dimensions*, **Applied Physics Letters** 80 (2002) 3295; **Highlighted in NATURE on June 27, 2002**.
 10. Hanchen Huang, G. H. Gilmer, and T. Diaz de la Rubia, *An Atomistic Simulator for Thin Film Deposition in Three Dimensions*, **Journal of Applied Physics** 84 (1998) 3636.