**E. G. WANG** (Enge WANG)
Provost & Vice President, Peking University
Chair Professor of Physics

CAS Member, TWAS Member
APS Fellow, IoP (UK) Fellow (FinstP), ECWIF (UK) Fellow
Director Emeritus, Beijing National Laboratory for Condensed Matter Physics
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## Academic Experience and Education

1985-1987, Exchange graduate student, Princeton University (USA)
1990, PhD in Physics, Peking University (China)
1990-1991, Postdoc, in Dingsheng Wang's group, Institute of Physics (CAS, China)
1991-1992, Postdoc, in Guy Allan's group, Laboratoire d'Etude des Surface at Interfaces (CNRS, France)
1992-1995, Postdoc/Research Staff, University of Houston (USA)
1995-now, Professor, Institute of Physics (CAS, China)
1999-2007, Director, Institute of Physics (CAS, China)
2000-now, Honorary Professor, Department of Physics, Hong Kong University (Hong Kong)
2000-2001, Founding Director, International Center for Quantum Structures (CAS, China)
2001-2002, JSPS Professor, Tohoku University (Japan)
2004-2009, Founding co-Director, Beijing National Laboratory for Condensed Matter Physics (China)
2006, Distinguished Lecturer, Australian National University (Australia)
2006-2007, AvH Professor, Fritz-Haber Institute der MPG (Germany)
2008-2009, GCEP Visiting Scholar, Department of Applied Physics, Stanford University, USA (http://gcep.stanford.edu/outreach/sabbatical.html)
2008-2009, Deputy General Secretary, Chinese Academy of Sciences
2008-2009, Executive President, Graduate University of Chinese Academy of Sciences
2009(Oct. – Dec.), Visiting Professor, Kavli Institute for Theoretical Physics, UC Santa Barbara, (USA)
2009-2010, Chair Professor of Physics, Dean of the School of Physics and the Graduate School, Peking University
2011- Provost & Vice President, Peking University

## Awards and Honors

1988, 2nd Place Student Awards for Outstanding Research, Peking University (China)
1994, "100 Talent Programme", Chinese Academy of Sciences (China)
1995, Outstanding Young Research Foundation, Chinese National Science Foundation (China)

1995, Outstanding Postdoctor Awards, Ministry of Education (China)
1996, Distinguished Young Research Awards, Hong Kong "Qiu Shi" Science Foundation (Hong Kong)
1997, 1st Place Young Scientist Awards, Chinese Academy of Sciences (China)
1999, "Yeng-Ke" Award for Outstanding Young Researcher, Chinese Academy of Sciences (China)
2001 Japan Society for the Promotion of Science (JSPS) Scholar, Tohoku University, (Japan)
2003, The 1st Place of the Science and Technology Awards of Beijing (China)
2003, The 2001-2002 Outstanding Research Awards, Chinese Academy of Sciences (China)
2003, The 2002-2003 Achievement in Asia Award (AAA) of the Overseas Chinese Physics Association (OCPA, USA)
2003, The 2003-2004 IBM Faculty Awards (USA)
2004, The 2nd Place of the National Science and Technology Awards, Ministry of Science and Technology (China)
2005, The Third World Academy of Sciences (TWAS) Prize in Physics, Trieste (Italy)
2005, Humboldt Research Award, Alexander von Humboldt Stiftung/Foundation, Bonn, (Germany)
2005, Outstanding Science and Technology Achievement Prize, Chinese Academy of Sciences (China)
2005, "Zhou Pei-Yuan Physics Awards", Chinese Physical Society (China)
2007, The Best Invited Speaker, 31st Annual Condensed Matter and Materials Meeting, Australian and New Zealand Institutes of Physics and Royal Australian Chemical Institute, Wagga-Wagga, (Australia)
2007, Distinguished Lecturer, Australian Research Council Nanotechnology Network (ARCNN, Australia)
2008,GCEP Visiting Scholar, Department of Applied Physics, Stanford University, USA (http://gcep.stanford.edu/outreach/sabbatical.html)
2008, Distinguished Chinese Visiting Scholar, Hong Kong Polytech University, Hong Kong (China)
2008, The 1st Place of the Science and Technology Awards of Beijing, with Xuedong Bai et al.
2010, Distinguished Science and Technology Awards, Ho Leung Ho Lee Foundation, Hong Kong
2010, The first "Ten Outstanding Scientists in China"
2011, The 2nd Place of the National Science and Technology Awards, Ministry of Science and Technology (China)
2011, The Asian Consortium on Computational Materials Science (ACCMS) Award, Singapore

## Fellowships and Professional Activities

2008-now, Academician, the Academy of Sciences for the Developing World (TWAS)
2007-now, Academician, the Chinese Academy of Sciences (China)
2006-now, Fellow, American Physics Society (USA)
2003-now, Fellow (FinstP), The Institute of Physics (UK)
2006-now, Fellow, The Executive Council of the World Innovation Foundation, The Institute of National Economic Enrichment and Development, Huddersfield (UK)

2010 – , Board Member, MRS Pacific Rim Subcommittee (PACRIM)
2007 - , Director, Commission on International Exchange, Chinese Physical Society
2008-2009, Deputy General Secretary, Chinese Academy of Sciences
2008-2009, Executive President, Graduate University of Chinese Academy of Sciences
2005-2008, Vice Chair of C10 Committee, The International Union of Pure and Applied Physics (IUPAP)
2004-2009, Founding co-Director, Beijing National Laboratory for Condensed Matter Physics
2005-now, China Science Advisory Committee, Institute of Physics Publishing, UK
2003-2007, Secretary General, The Chinese Physical Society (CPS)
2000-2001, Founding Director, International Center for Quantum Structures, Chinese Academy of Sciences
1999-2003, Chairman, Surface Science Division, Chinese Physical Society
1997-1999, Director, State Key Lab for Surface Physics, IOP/CAS

1999-now, Symposium Co-Organizer of more than 10 international conferences including APS(2005), MRS(2004), IUMRS (1999)
2000-now, Chairman over 10 international conferences including the 3rd Conference of the Asian Consortium for Computational Materials Science (2005)

## Professional Advisor Committees

1996-1999, Scientific Council, Center for Condensed Matter Physics, Chinese Academy of Sciences
2004-2005, Adjunct Advisor, International Center for Young Scientists (ICYS), National Institute for Materials Sciences, Tsukuba, Japan
2005-now, Member, Scientific Advisor Committee, Shanghai Synchrotron Radiation Facility, Shanghai, China
2006-now, The External Advisor Committee, Center for Advanced Interdisciplinary Research in Materials (CIMAT), University of Chile, Santiago, Chile
2006-2009, International Advisor, National Institute for Materials Science, Tsukuba, Japan
2007-now, International Advisor Board, Materials Simulation Laboratory, University College London, UK
2007-now, Advisor Board, Kavli Institute of Theoretical Physics, Beijing, China
2010-now, Board Member, MRS Pacific Rim Subcommittee (PACRIM), USA
2010-now, International Advisory Panel of NGS (Graduate School for Integrative Sciences and Engineering), National University of Singapore, Singapore (http://www.nus.edu.sg/ngs/iap.html)
2010-now, Board Member, PIRE-ECCI International Advisory Board, University of California Santa Barbara (PIRE -- The Partnership for International Research and Education). (http://pire-ecci.ucsb.edu/iab.html)
2010-now, Advisor Board, Kavli Institute for Astronomy and Astrophysics at Peking University, Beijing, China
2011, Member of the International Advisory Committee, the annual Conference on Computational Physics (CCP), Oak Ridge National Laboratory, Oak Ridge, Tennessee, USA.
2011, Advisory Committee, Graduate School and Research Center, Monash University, Australia
2011, Member, International Advisory Council, King Abdullah University for Science and Technology, Saudi Arabia

## Editorial Boards

2011–now, Executive Editor, AIP Advances, American Institute of Physics (US)
1998-now, Editorial Board, Materials Science Foundations (Switzerland)
1999-now, Editorial Board, Chinese Physics
2002-2006, Editorial Board, Chinese Journal of Chemical Physics
2004-now, Editorial Board, Journal of Computational and Theoretical Nanoscience, American Scientific Publishers
2005-now, Editorial Board, Nanoscale Research Letters, Ibiblio
2005-now, Advisory Editorial Board, Journal of Physics: Condensed Matter, Institute of Physics Publishing
2006-now, Associate Editor，Science and Technology of Advanced Materials，Elsevier Publishing
2006-now, Editorial Board, Solid State Communication, Elsevier Publishing
2007-now, Associate Editor, IEEE Transactions on Nanotechnology, IEEE Inc.
2008-now, Editorial Board, The Open Condensed Matter Physics Journal, Bentham Science Publishing
2008-now, Associate Editor-in-Chief, Frontiers of Physics in China, Higher Education Press, China
2008-2012, Editorial Board, International Journal of Modern Physics B (IJMPB) and Modern Physics Letters B (MPLB), World Scientific Publishing, Singapore
2008-now, Associate Editor，Bulletin of Chinese Academy of Sciences，Science Press, China
2008-2012, Editorial Board, Science in China, Academic Journals Publisher, China
2008-now, Editorial Board, Science and Technology Review, Chinese Association for Science and Technology Publishers

## Current or past supervisor

Completed supervision of 28 Ph.D. theses including two dual degrees in University of Sciences and Technologies of Lille (France) and one in Chalmers University of Technology (Sweden), 7 M.S. theses, and 9 post-doctoral fellows. About fifteen of them joined the faculty of major universities/institutes in China, Japan, North America, and Europe. Present group: 1 post-doctoral fellow plus 9 graduate students.

Among his students, Dr. Wenguang Zhu got 2004 MRS Graduate Student Silver Awards, Dr. Shenyuan Yang got 2008 MRS Graduate Student Silver Awards, Dr. Guangyu Zhang got the “100 Excellent PhD theses in China” (2006), Dr. Guangyu Zhang (2003) and Dr. Jianjun Yang (2004) got the President Awards of Chinese Academy of Sciences for excellent research. Dr. Kaihui Liu got the Best Presentation Award, ICYS-ICMR Summer School on Nanomaterials, Tsukuba, Japan(2007) and Dr. Wangyang Fu got the Best Speaker Award, the 14th Vietnam School of Physics, Quy Nhon, Vietnam(2008). Mr. Lei Liu got the Best Poster Award, the 4th International Conference on New Diamond and Nano Carbons (NDNC 2010).

## Research Interests

Wang's research focuses on surface physics; the approach is a combination of atomistic simulation of nonequilibrium growth, chemical vapor deposition of light-element nanomaterials, and water behaviors in confinement system. One of the original contributions is the development of the Reaction-Limited-Aggregation (RLA) theory. Within this model, a fractal-to-compact island shape transition can be induced by either decreasing the growth temperature or increasing the deposition flux. This counterintuitive finding is just the opposite to the prediction of the classic Diffusion-Limited-Aggregation (DLA) model, and is in excellent qualitative agreement with experimental observations in the presence of surfactant. He and his coworkers also predicted a three-dimensional Ehrlich-Schwoebel barrier; attracted News and Views in Nature (June 2002). Another contribution is the model proposal and experimental validation of a true upward atomic diffusion; attracted Physics News Update in June 2003 and News and Views in Nature as well as Science Week in June 2004. His group experimentally realized tubular graphite cone, polymerized CN nanobells, which attracted News reports of Materialstoday (June 2003) and Analytical Chemistry (July 2003), and single-walled boron-carbon-nitrogen nanotubes. He also developed an in situ study of the properties of these individuals. Recently, he researches water behaviors in confinement. He proposed a two-dimensional tessellation ice, which has attracted a lot of interest and has finally been observed in experiments. His work on the water-surface coupling and the strength of the hydrogen bonds at the interfaces provides a fundamental understanding of water on surface at molecular level. Meanwhile he studied proton ordering and premelting of ice surface.

## **Invited Talks** (selection out of 82 since 1996; with 4 APS, 4 MRS, 5 IUMRS)

1996, The 17th International Semiconductor Meeting (Nordic), Trondheim, Norway (Jun. 17 –20), "Synthesis and Characterization of Pure Nanocrystalline C-N Film."
1997, International Conference on Characterization and Processing of Advanced Materials, Hong Kong (May 19 – 22). "Research on Carbon Nitrides."
2000, The 6th IUMRS, Hong Kong (July 24-27), "Novel Formation and Decay Mechanisms of Nanostructure on Surface"
2000, MRS Fall Meeting, Boston (Nov.27-Dec.1) "Pattern Selection of Surface-based Nanostructures".
2001, American Ceramic Society 103rd Meeting, Indianapolis (April 22-25), "Nitride-related Nanomaterials by Chemical Vapor Deposition".
2001, APS March Meeting, Seattle (March 12-17), "Morphological Evolution and Control in Submomolayer Epitaxy".
2002, MRS Fall 2002 Meeting, Boston (Dec.2 – 7) "Island Shape Selection and Stability in Epitaxial Growth".
2003, Inter. Union MRS (IUMRS) & Inter. Conf. on Adv. Mater. (ICAM)， Yokohama, Japan (Oct. 8 – 13), "Water-metal Interaction Based on *ab initio* Density Functional Study".
2003, Plenary Talk, The Chinese Physical Society (CPS) Fall Meeting, Hefei (Sept.17- 20) "The Fate of Migrating Atoms on Surface."
2004, Keynote Lectures, International Conference on Computational & Experimental Engineering and Sciences, Madeira, Portugal (July 26-29). "Atomic-scale Study of Surface-based Nanostructures: Formation and Decay"
2004, APS March Meeting, Montreal, Quebec, Canada (March 22-26,) "Attempts in CNT Engineering: Nanocone, Nanobell, and Beyond".
2004, The 4th European Congress on Computational Methods in Applied Sciences and Engineering, Jyvaskyla, Finland (July 24 –28) "Kinetics-driven Adatom Processes in Thin Film Growth".

2005, The 10th International Conf. On New Diamond Science and Technology (ICNDST10), Tsukuba, Japan, (May 11 – 14) “A step up to monochiral multi-walled carbon nanotubes”

2005, Key Lecture, Workshop on Interface Disorder in Nanosystems, Leiden, Netherlands. (June 20 – 23) “Kinetics-driven atomic processes in formation and decay of surface-based nanostructure”.

2006, Conf. on Computational Physics 2006 (CCP2006), Gyeongju, Korea, (Aug 29 – Sept. 1) “Dopant control in dilute magnetic semiconductors: Subsurfactant action”.

2006, Keynote Lecture, the 11th Inter. Conf. On Theoretical Aspects of Catalysis (ICTAC-11), Schmochwitz, Germany (June 11 – 14) “Interpretation and prediction of nanostructural evolution based on first-principles studies”

2006, Key Lecture, CIAR Nanoelectronics，Banff, Alberta, Canada.( Nov.9-12) “A step up to self-assembly”

2007, The 31st Annual Condensed Matter and Materials Meeting, Wagga Wagga, Australia (Feb.6-9) “A step up to self-assmebly”

2007, Swiss NanoConvertion 2007, Bern, Swiss (June 27–30) “Who controls the fate of migrating atoms on surface?”

2007, International Conference on Materials for Advanced Technologies (ICMAT), Singapore (July 1-6) “A molecular picture of water on NaCl surface”

2007, MRS Fall Meeting, Boston (Nov.26-30) “Towards the Single-Walled B-C-N Nanotubes:Fabrication and Electronic Property”.

2008, International Conference on Smart Materials-Smart/Intelligent Materials and Nano Technology & 2nd International Workshop on Functional Materials and Nanomaterials (April 22-25), Chiang Mai, Thailand, “Impurity Decoration for Growth Control: above, below, and at the Surface”.

2008, The Second General Meeting of ACCMS-VO (Jan.26-28), Sendai, Japan, “Fundamentals of Impurity at Growth Front: Above, Below, and At the Surface”

2009, Frontiers in Condensed Matter Physics and Nanoscale Materials, A Symposium in Celebration of Steven G. Louie’s 60th Birthday, 4 Le Conte Hall (March 21–22, 2009), Berkeley, USA, “Ice Ih Surfaces: Unexpectedly Cold”.

2009, MRS Fall Meeting, Boston (Nov.30-Dec.4) “Individual single/double walled carbon nanotube and its electronic properties”.

2009, The Third Internaitonal Conference on One-dimensional Nanomaterials (ICON 2009) Atlanta, GA, USA, (Dec. 7-9, 2009) “Individual single/double walled carbon nanotube and its electronic properties”.

2010, APS March Meeting, Portland, Oregon, Canada (March 15-19, 2010) “Physics in China: The Past and Next Decade”.

2010, Plenary Talk, The 4th international New Diamond and Nano Carbons Conference (NDNC 2010), Suzhou, China (May 16-20, 2010) “Individual single/double walled carbon nanotube and its electronic properties”

2010, New Frontier of Surface Physics, Baton Rouge, USA (Nov.30, 2010) “A different world: With and without water”

2011, The 6th Conference of the Asian Consortium on Computational Materials Science (ACCMS-6), Singapore (September 6 – 9, 2011) “Ice surface: Insights from computer simulation”

2011, The Lorentz Workshop on Challenges in modelling the reaction chemistry of interstellar dust, Leiden , Netherlands (September 19 – 23, 2011) “Water on Surfaces: From cluster to overlayer”

## Invited Seminars and Colloquiums(selection out of 100 since 1987)

In **USA** including Harvard Univ., Stanford Univ., Columbia Univ., UC Berkeley, Univ. of Michigan, Rice Univ., Rutgers Univ., Univ. of Texas at Austin, UC Irvine, Univ. of Tennessee, Univ. of Missouri, Univ. of Houston, Oklahoma State Univ., Michigan Tech Univ., UC San Diego, Oak Ridge National Laboratory, Lawrence Berkeley National Laboratory, Ames National Laboratory, Louisiana State University, Univ. of South Florida;
In **Europe** including Oxford Univ., Cambridge Univ., Univ. College London, Queen Mary Univ. of London, Edinburgh Univ., Univ. of Genova, Technical University of Denmark, Univ. of Erlangen, Univ. of Heidelberg, Univ. of Basel, EMPA (Swiss), TU Delft, Univ of Leiden;
In **Asia** including Univ. of Tokyo, Univ. of Kyoto, Univ. of Tohoku, Univ. of Hiroshima， Univ. of Osaka, Institute for Materials Science (Japan), National Institute for Materials Science (Japan), Univ. of Hong Kong, Hong Kong Univ. of Science and Technology, Chinese Univ. of Hong Kong, King Saud University (Saudi Arabia), Peking Univ., Tsinghua Univ., Chin. Univ. of Science and Technology, Fudan Univ., Zhongshan Univ., Wuhan Univ., Liaoning Univ., Jilin Univ., National Tsinghua Univ. (Taiwan), National Chiaotung Univ. (Taiwan), National Univ. of Singapore, Mahidol University (Thailand), National Physical Laboratory (India), Indian Institute of Technology (New Delhi, India), Council of Scientific and Industrial Research (India), National Institute of Science, Technology and Development Studies (India);
In **all other places** including Australia National Univ., Univ. of New South Wales, Univ. of Queensland, Monash University, ANSTO (Australia), Univ. of Chile;

## Lectures in Universities

2010, Surface Physics, School of Physics, Peking Univ., Fall Semester, 2010
2008, <<Principles of Surface Physics>> by F. Bechstedt, Springger-Verlag, Graduate University of Chinese Academy of Sciences, Beijing, Oct. 2008-Jan. 2009
2007, ARCNN Distinguished Lectures I-V(in English), Australia National Univ., Australia, Feb.2-16.
2005, Lectures (in English), Advanced Study Institute on Frontiers in Computational Methods and their Applications in Physical Sciences, Chinese University of Hong Kong Nov.26-Dec.7
1) Introduction to density functional theory and its application
2) First-principles Kinetic Monte Carlo methods applied to surface
3) Simulation study of water molecules on surface: hydrogen bonding and phase transitions

## Recent Selected Publications (Selection out of 270 since 1987)

In the above areas, he is the author of over 270 papers in peer-reviewed journals (4 in Science, 2 in Natures , 23 in PRL, 7 JACS, 40 in APL, 5 in Nanolett, and 9 invited review articles), coeditor of 1 MRS proceeding, and coinventor on 6 patents. He is an ISI highly-cited researcher in physics with over 6000 citations (with h-index of 38 including 9 of his papers cited over a hundred times each).

[46] M.Watkins, D. Pan, **E. G.Wang**, A. Michaelides, J. VandeVondele and B. Slater, ***Nature Materials*** 10, 794(2011) (online 10.1038/NMAT3096, 04 September 2011), “Large variation of vacancy formation energies in the surface of crystalline ice” (Highlighted as News and Views in ***Nature***

***Materials*** 10, 725 (2011))

[45] Wangyang Fu, Shengyong Qin, Lei Liu, Tae-Hwan Kim, Sondra Hellstrom, Wenlong Wang, Wenjie Liang, Xuedong Bai, An-Ping Li, and **Enge Wang**, ***Nano Letters*** 11, 1913(2011), "Ferroelectric Gated Electrical Transport in CdS Nanotetrapods".

[44] Lei Liu, Yingli Zhang, Wenlong Wang, Changzhi Gu, Xuedong Bai, and Enge Wang, ***Adv. Mater.*** 23, 1246(2011), "Nanosphere Lithography for the Fabrication of Ultranarrow Graphene Nanoribbons and On-Chip Bandgap Tuning of Graphene"

[43] Zhiyong Wang, Hong Li, Zheng Liu, Zujin Shi, Jing Lu, Kazu Suenaga, Soon-Kil Joung, Toshiya Okazaki, Zhennan Gu, Jing Zhou, Zhengxiang Gao, Guangping Li, Stefano Sanvito, **Enge Wang**, and Sumio Iijima, ***J. AM. CHEM. SOC.*** 132, 13840(2010), "Mixed Low-Dimensional Nanomaterial: 2D Ultranarrow MoS2 Inorganic Nanoribbons Encapsulated in Quasi-1D Carbon Nanotubes"

[42] Qianfan Zhang, Wenxing Zhang, Wenhui Wan, Yi Cui, and **Enge Wang**, ***Nano Letters*** 9，921 (2010) "Lithium Insertion In Silicon Nanowires: An ab Initio Study".

[41] Jian-Tao Wang, Changfeng Chen, **Enge Wang**, and Yoshiyuki Kawazoe, ***Phys. Rev. Lett.*** 105, 116102(2010) "Magic Monatomic Linear Chains for Mn Nanowire Self-Assembly on Si(001)"

[40] Peng Gao, Zhenchuan Kang, Wangyang Fu, Wenlong Wang, Xuedong Bai, and **Enge Wang**, ***J. AM. CHEM. SOC.*** 132, 4197(2010), "Electrically Driven Redox Process in Cerium Oxides"

[39] Wangyang Fu, Zhi Xu, Xuedong Bai, Changzhi Gu, and **Enge Wang**, ***Nano Letters*** 9，921 (2009) "Intrinsic Memory Function of Carbon Nanotube-based Ferroelectric Field-Effect Transistor".

[38] Kaihui Liu, Wenlong Wang, Zhi Xu, Xuedong Bai, **Enge Wang**, Yagang Yao, Jin Zhang, and Zhongfan Liu, ***J. Am. Chem. Soc.***131, 62 (2009) Chirality-Dependent Transport Properties of Double-Walled Nanotubes Measured in Situ on Their Field-Effect Transistors".

[37] Qianfan Zhang, G. Wahnstron, M.E. Bjorketun, S.W. Gao, and **Enge Wang**, ***Physics Review Letters*** 101,215902(2008) "Path Integral Treatment of Proton Transport Processes in $BaZrO_3$".

[36] Ding Pan, Li-Min Liu, Gareth A. Tribello, Ben Slater, Angelos Michaelides, and **Enge Wang**, ***Phys. Rev. Lett.*** 101, 155703(2008) "Surface Energy and Surface Proton Order of Ice Ih".

[35] Zhi Xu, Wengang Lu, Wenlong Wang, Changzhi Gu, Kaihui Liu, Xuedong Bai, **E.G. Wang**, and Hongjie Dai, ***Adv. Mater.*** 20, 3615(2008). "Converting Metallic Single-Walled Carbon Nanotubes into Semiconductors via Boron-Nitrogen co-doping".

[34] Xiaolin Li, Guangyu Zhang, Xuedong Bai, Xiaoming Sun, Xinran Wang, **Enge Wang** and Hongjie Dai, ***Nature Nanotechnology*** 3, 538(2008). "Highly conducting graphene sheets and Langmuir–Blodgett films"

[33] Wenlong Wang, Y. Bando, Chunyi Zhi, Wangyang Fu, **E.G. Wang**, and D. Golberg, ***J. Am. Chem. Soc***. 130, 8144(2008). "Aqueous Noncovalent Functionallization and Controlled Near-Surface Carbon Doping of Multiwalled Boron Nitride Nanotubes"

[32] Mina Yoon, Shenyuan Yang, Christian Hicke, **E.G. Wang**, David Geohegan, and Zhenyu Zhang, ***Phys. Rev. Lett.*** 100, 206806(2008) "Calcium as the Superior Coating Metal in Functionalization of Carbon Fullerenes for High-Capacity Hydrogen Storage"

[31] Lei Liao,Kaihui Liu, Wenlong Wang, Xuedong Bai, **E.G. Wang**, Yueli Liu, Jinchai Li, and Chang Liu， ***J. Am. Chem. Soc***. 129, 9562(2007). "Multiwall Boron Carbonitride/Carbon Nanotube Junction and Its Rectification Behavior"

[30] Lixin Zhang, **E.G. Wang**, Q.K. Xue, S.B. Zhang, and Z. Zhang, ***Phys. Rev. Lett.*** 97,126103(2006). "Generalized Electron Counting in Determination of Metal-Induced Reconstruction of Compound Semiconductor Surfaces"

[29] J.T. Wang, C. Chen, **E.G. Wang**, D.S. Wang, H. Mizuseki, and Y. Kawazoe, ***Phys. Rev. Lett.*** 97, 046103(2006). "Two-stage rotation mechanism for group-V precursor dissociation on Si(001)."

[28] W. L. Wang, X. D. Bai, K. H. Liu, Z. Xu, D. Golberg, Y. Bando, and **E. G. Wang**，***J. Am. Chem. Soc***. 128, 6530(2006). "Direct Synthesis of B-C-N Single-Walled Nanotubes by Bias-Assisted Hot Filament Chemical Vapor Deposition"

[27] Zhi Xu, X.D. Bai, Z.L. Wang, and **E.G. Wang**, ***J. Am. Chem. Soc***. 128, 1052(2006). "Multiwall carbon nanotubes made of monocharility graphite shells".

[26] Y. Guo, Y.F. Zhang, X.Y. Bao, T.Z. Han, Z. Tang, L.X. Zhang, W.G. Zhu, **E.G. Wang**, Q. Niu, Z.Q. Qiu, J.F. Jia, Z.X Zhao, and Q.K. Xue, ***Science*** 306, 1915(2004), "Superconductivity modulated by quantum size effects".

[25] Y. Jia, W.G. Zhu, **E.G. Wang**, Y.P. Huo, and Zhenyu Zhang, ***Phys. Rev. Lett.*** 94，086101(2005), "Initial stages of Ti growth on diamond (100) surfaces: From single adatom diffusion to quantum

wire formation"
[24] N. Y. Huang, J. C. She, Jun Chen, S. Z. Deng, N. S. Xu, H. Bishop, S. E. Huq, L. Wang, D. Y. Zhong, **E. G. Wang**, and D. M. Chen, ***Phys. Rev. Lett.*** 93, 075501(2004)," Mechanism responsible for initiating carbon nanotube vacuum breakdown"
[23] Wenguang Zhu, H. H. Weitering, **E. G. Wang,** Efthimios Kaxiras and Zhenyu Zhang, ***Phys. Rev. Lett.*** 93, 126102(2004), "Contrasting growth modes of Mn on Ge(100) and Ge(111) surfaces: subsurface segregation versus intermixing"
[22] Jiandong Guo, Chunlei Yang, Z. M. Li, Ming Bai, H. J. Liu, G. D. Li, **E. G. Wang**, C. T. Chan, Z. K. Tang, W. K. Ge, and Xudong Xiao, ***Phys. Rev. Lett.*** 93, 017402(2004)***,*** "Efficient Visible Photoluminescence from Carbon Nanotubes in Zeolite Templates"
[21] Jianjun Yang, S. Meng, L.F. Xu, and **E. G. Wang**, ***Phys. Rev. Lett.***92,146102(2004) "Ice Tessellation on a Hydroxylated Silica Surface"
[20] W. G. Zhu, F. B. Mongeot, U. Valbusa, **E. G. Wang**, and Zhenyu Zhang, ***Phys. Rev. Lett.*** 92***,*** 106102 (2004) "Adatom Ascending at Step Edges and Faceting on fcc Metal (110) Surfaces".
[19] Y. G. Yao, L. Kleinman, A.H. MacDonald, J. Sinova, T. Jungwirth, D.S. Wang, **E.G. Wang**, and Q. Niu, ***Phys. Rev. Lett.*** 92, 037204(2004). "First principles calculation of anomalous hall conductivity in ferromagnetic bcc Fe".
[18] K.H. Wu, Y. Fujikawa, T. Nagao, Y. Hasegawa, Q.K. Xue, **E.G. Wang**, T. Briere, V. Kumar, Y. Kawazoe, S.B. Zhang, and T. Sakurai, ***Phys. Rev. Lett.*** 91, 126101(2003). "Na adsoeption on the Si(111)-(7X7) surface: From two-dimensional gas to nanocluster array".
[17] F.B. Mongeot, Wenguang Zhu, A. Molle, R. Buzio, C. Boragno, U. Valbusa, **E.G. Wang,** and Zhenyu Zhang, ***Phys. Rev. Lett.*** 91, 016102(2003) "Nanocrystal Formation and Faceting Instability in Al(110) Homoepitaxy True Upward Adatom Diffusion at step Edges and Island Corners".
[16] G. Y. Zhang, X. Jiang, and **E.G. Wang**, ***Science*** 300, 472(2003) "Tubular Graphite Cones."
[15] S. Meng, L. F. Xu, **E. G. Wang**, and S.W. Gao, ***Phys. Rev. Lett.*** 89，176104(2002) "Vibrational Recognition of Hydrogen-bonded Water Networks on a Metal Surface".
[14] J. Wu, **E. G. Wang**, K. Varga, B.G. Liu, S. T. Panfelides, and Zhenyu Zhang, ***Phys. Rev. Lett.*** 89，146103 (2002) "Island Shape Selection in Pt(111) Submonolayer Homoepitaxy without or with CO as Adsorbates".
[13] Y.G. Yao, Ph. Ebert, M.Z. Li, Zhenyu Zhang, and **E.G. Wang**, ***Phys. Rev. B*** 66, 041407(2002) ***(Rapid Communication)*** "Decay Characteristics of Two-dimensional Islands on Strongly Anisotropic Surfaces".
[12] M.Z. Li, J.F. Wendelken, B.G. Liu, **E.G. Wang,** and Zhenyu Zhang, ***Phys. Rev. Lett.*** 86, 2345(2001) "Decay Characteristics of Surface Mounds with Contrasting Interlayer Mass Transport Channels".
[11] J. X. Zhong, **E. G. Wang**, Q. Niu, and Z. Zhang, ***Phys. Rev. Lett.*** 84, 3895 (2000) "Morphological symmetry breaking during epitaxial growth at grazing incidence".
[10] B.G. Liu, J. Wu, **E.G. Wang**, and Zhenyu Zhang, ***Phys. Rev. Lett.*** 83, 1195(1999) "Two-dimensional pattern formation in surfactant-mediated epitaxial growth."
[9] X. Ma and **E.G. Wang,** ***Appl. Phys. Lett.*** 78, 978(2001) "CNx/Carbon Nanotube Junctions Synthesized by Microwave Chemical Vapor Deposition".
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