

Curriculum Vitae

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Education

2003-2006	Tulane Univ., USA	Ph.D., Chemical & Biomolecular Engineering
2000-2003	Fudan Univ., China	M.S., Polymer Chemistry & Physics
1995-1999	Donghua Univ., China	B.E., Materials Science & Engineering

Employment

2008-present	Professor	Fudan University, Shanghai, China
2006-2008	Director's Postdoctoral Fellow	Los Alamos National Laboratory, USA

Honor and Award

2012	Distinguished Young Scientist, National Natural Science Foundation of China
2012	Outstanding Young Scholar, Department of the Central Committee
2011	Shanghai Professor of Special Appointment (Eastern Scholar), Shanghai Government
2010	Li Foundation Heritage Prize for Excellence in Creativity, USA
2010	Young Scientist Award, Chinese Chemical Society
2010	Shanghai Leading Talent, Shanghai Government
2010	Excellent Graduate Advisor at Fudan University
2009	CCS-Wiley Youth Chemical Paper Prize, Chinese Chemical Society
2009	New Century Talent, Ministry of Education of China
2009	Rising Young Scientist Award by Elsevier and Science News
2009	Pujiang Talent, Science and Technology Commission of Shanghai Municipality
2006	Chinese Government Awards for Outstanding Self-Financed Students Abroad
2006	Director's Postdoctoral Fellowship at Los Alamos National Lab, US Department of Energy
2005	Freeman-EAS Award, the American Institute of International Education
2005	American Institute of Chemists Outstanding Research Award
2004	Shanghai Government Awards for Outstanding Graduate Achievements/Thesis

Academic Service

2012.10-2016.10	The sixth Council Director of the Chinese Society for Composite Materials
2012-present	Editor Board Member, Scientific Reports published by Nature
2010-2011	Guest Editor, Journal of Nanotechnology
2010-present	Editor, Journal of Chemical Engineering and Materials Science
2009-present	Editor, International Journal of Physical Sciences
2009-present	Editorial Board Member, Journal of Developmental Biology and Tissue Engineering

- 2009-2010 Leading Guest Editor, Journal of Nanomaterials
- 2008.10-
present Adjunct Professor, Tongji University
- 2007-2008 Moderator, Division of Polymeric Materials Science and Engineering,
American Chemical Society
- 2007-2008 Ambassador, American Institute of Chemical Engineering

Conference Organizer

- 2011.11 Organizer, 2011 China-Korea Joint Symposium on Nanoscience and
Nanotechnology
- 2010.9 Organizer, China-Australia Joint Symposium for Young Scientists
- 2009 Organizer, The First Sino-US Forum on Nano Biomedicine
- 2008 Organizer, American Chemical Society Annual Meeting
- 2007 Organizer, American Institute of Chemical Engineering Annual Meeting

Conference Chair

- 2013.1 Chair, IEEE International Electronics Conference
- 2012.10 Chair, The Society for the Advancement of Material and Process
Engineering Conference
- 2011.4 Chair, China-Finland Workshop on Biomanufacturing and Evaluation
Techniques
- 2010.4 Chair, Materials Research Society Annual Meeting
- 2009 Chair, The First Sino-US Forum on Nano Biomedicine
- 2008 Chair, American Chemical Society Annual Meeting
- 2007 Chairs of three sessions, American Institute of Chemical Engineering
Annual Meeting

Fund support

- 2013-2016 ¥2M, National Natural Science Foundation of China for Distinguished Young
Scientists (PI)
- 2012-2015 ¥2M, Department of the Central Committee for Outstanding Young Scholars
(PI)
- 2012-2015 ¥1.5M, Zhuoyue Project of Fudan University
- 2012-2015 ¥2.6M, The Program for Professor of Special Appointment (Eastern Scholar)
at Shanghai Institutions of Higher Learning (PI)
- 2012-2014 ¥500K, Science and Technology Commission of Shanghai Municipality (PI)
- 2011-2015 ¥800K, 973 Project from Ministry of Science and Technology of China (PI)
- 2011-2013 ¥1M, International Cooperation Project from Ministry of Science and
Technology of China (PI)
- 2011-2013 \$40K, Li Foundation Heritage Prize in USA (PI)
- 2010-2015 \$300K, CINT of US Department of Energy (PI)
- 2010-2012 ¥250K, National Natural Science Foundation of China (PI)
- 2010-2012 ¥40K, the Scientific Research Foundation for the Returned
Overseas Chinese Scholars, State Education Ministry (PI)
- 2010-2012 ¥500K, Ministry of Education of China (PI)
- 2010-2013 ¥670K, General Motor Company, USA (PI)

2010-2012	¥450K, Science and Technology Commission of Shanghai Municipality (PI)
2009-2011	¥250K, Science and Technology Commission of Shanghai Municipality (PI)
2008-2011	¥800K, Fudan University (PI)
2006-2008	\$240K, Los Alamos National Lab, US Department of Energy (PI)

Graduate and Postdoctoral Advisees

Current	Tao Chen, Sanqing Huang, Xuemei Sun, Guozheng Guan, Xuli Chen, Houpu
Graduate	Li, Yongfeng Luo, Zhibin Yang, Fanjing Cai, Hui Zhang, Zhenbo Cai, Wenhan
Students	Guo, Jin Ren, Huijuan Lin, Longbin Qiu, Lei Kuang, Minxian Xu, Pengchen Wan
Current	Li Li
Postdoc	

Research Interest

- (2) **Novel optoelectronic and electronic materials:** Development of advanced materials with emphasis on aligned carbon nanotubes and conjugated polymers for the applications in organic solar cell, lithium ion battery, and other devices.
- (1) **Novel structural materials:** Aligned carbon nanotube/polymer and silica/polymer composite materials with emphasis on the excellent mechanical properties.

Invited Book Chapter

- (2) Chapter 12: Polymer composites with carbon nanotubes in alignment; Book name: Carbon Nanotube-polymer composites; INTECH, 2011.
- (1) Chapter 16: Self-directed assembly of organosilanes into helically mesoporous nanocomposites; Book name: Mesoporous Materials: Properties, Preparation and Applications; Nova Science Publishers Inc., 2009.

Publication (total 61 with 2 at *Nature Nanotechnology*, 10 at *Adv Mater*, 4 at *JACS*, 6 at *Angew Chem Int Ed*, 1 at *PRL*, 1 at *Nano Lett*, 1 at *Acc Chem Res* and 1 at *Chem Soc Rev*)

- (61) Yang, Z.; Sun, H.; Chen, T.; Qiu, L.; Peng, H.* “Highly efficient photovoltaic wires based on graphene/platinum composite fibres”, *Nature Nanotechnolgy* 2012, NNANO-12081283.
- (60) Yang, Z.; Chen, T.; He, R.; Li, H.; Lin, H.; Li, L.; Zou, G.; Jia, Q.; Peng, H.* “A novel carbon nanotube/polymer composite film for electrode of organic solar cell”, *Polym. Chem.* 2012, PY-ART-11-2012-021021, accepted. ([invited article](#))
- (59) Chen, T.; Cai, Z.; Qiu, L.; Li, H.; Ren, J.; Lin, H.; Yang, Z.; Sun, X.; Peng, H.* “Synthesis of aligned carbon nanotube composite fibers with high performances by electrochemical deposition”, *J. Mater. Chem. A* 2012, DOI: 10.1039/C2TA01039A, published online.
- (58) Zhang, H.; Qiu, L.; Li, H.; Zhang, Z.; Yang, Z.; Peng, H.* “Aligned carbon nanotube/polymer composite film with anisotropic tribological behavior”, *J. Colloid & Interface Sci.* 2012, JCIS-12-2252, accepted.
- (57) Sun, X.; Chen, T.; Yang, Z.; Peng, H.* “The alignment of carbon nanotubes: an effective route to extend their excellent properties to macroscopic scale”, *Acc. Chem. Res.* 2012, ar-2012-00221r, published online. ([invited review article](#))

- (56) Yang, Z.; Li, L.; Luo, Y.; He, R.; Qiu, L.; Lin, H.; **Peng, H.*** “An integrated device for both photoelectric conversion and energy storage based on free-standing, penetrated and aligned carbon nanotube film”, *J. Mater. Chem.* 2012, 22, TA-ART-08-2012-000113, published online.
- (55) Cai, Z.; Li, L.; Ren, J.; Qiu, L.; Lin, H.; **Peng, H.*** “Flexible, weaveable and efficient microsupercapacitor wires based on polyaniline composite fibers incorporated with aligned carbon nanotubes”, *J. Mater. Chem.* 2012, 22, TA-ART-09-2012-000274, published online.
- (54) Ren, J.; Li, L.; Chen, C.; Chen, X.; Cai, Z.; Qiu, L.; Wang, Y.*; Peng, H.* “Twisting carbon nanotube fibers for both wire-shaped micro-supercapacitor and micro-battery”, *Adv. Mater.* 2012, adma.201203445, published online. (cover story)
- (53) Guo, W.; Liu, C.; Zhao, F.; Sun, X.; Yang, Z.; Chen, T.; Chen, X.; Qiu, L.; Hu, X.; **Peng, H.*** “A novel electromechanical actuation of carbon nanotube fiber”, *Adv. Mater.* 2012, 24, 5379-5384.
- (52) Chen, T.; Qiu, L.; Yang, Z.; Kia, H. G.; **Peng, H.*** “Designing aligned inorganic nanotubes at the electrode interface: towards highly efficient photovoltaic wires”, *Adv. Mater.* 2012, 24, 4623-4628.
- (51) Sun, X.; Qiu, L.; Cai, Z.; Meng, Z.; Chen, T.; Lu, Y.; **Peng, H.*** “Hierarchically tunable helical assembly of achiral porphyrin-incorporated alkoxy silane”, *Adv. Mater.* 2012, 24, 2906-2910.
- (50) Chen, T.; Qiu, L.; Yang, Z.; Cai, Z.; Ren, J.; Li, H.; Lin, H.; Sun, X.; **Peng, H.*** “An integrated energy wire for both photoelectric conversion and storage”, *Angew. Chem. Int. Ed.* 2012, 51, anie.201207023. (Awarded as “VIP paper” by this journal, cover story)
- (49) Sun, X.; Wang, W.; Qiu, L.; Guo, W.; Yu, Y.; **Peng, H.*** “Unusual reversible photomechanical actuation in polymer/nanotube composites”, *Angew. Chem. Int. Ed.* 2012, 51, 8520-8524. (Highlighted by *Noteworthy Chemistry*, American Chemical Society)
- (48) Wang, W.; Sun, X.; Wu, W.; **Peng, H.***; Yu, Y.* “Photoinduced deformation of crosslinked liquid-crystalline polymer film oriented by a highly aligned carbon nanotube sheet”, *Angew. Chem. Int. Ed.* 2012, 51, 4644-4647. (Highlighted by *Nature China*)
- (47) Chen, T.; Qiu, L.; Cai, Z.; Gong, F.; Yang, Z.; Wang, Z.*; **Peng, H.*** “Intertwined aligned carbon nanotube fiber based dye-sensitized solar cells”, *Nano Lett.* 2012, 12, 2568-2572.
- (46) Qiu, L.; Sun, X.; Yang, Z.; Guo, W.; **Peng, H.*** “Preparation and application of aligned carbon nanotube/polymer composite material”, *Acta Chimica Sinica* 2012, 70, 1523-1532. (invited article, cover story)
- (45) Yang, Z.; Li, L.; Lin, H.; Luo, Y.; He, R.; Qiu, L.; Ren, J.; **Peng, H.*** “Penetrated and aligned carbon nanotubes for counter electrodes of highly efficient dye-sensitized solar cells”, *Chem. Phys. Lett.* 2012, 549, 82-85.
- (44) Chen, T.; Qiu, L.; Li, H.; **Peng, H.*** “Polymer photovoltaic wire based on aligned carbon nanotube fiber”, *J. Mater. Chem.* 2012, 22, 23655-23658.
- (43) Guan, G.; Qiu, Z.; Sun, X.; Yang, Z.; Qiu, L.; Ma, Q.; **Peng, H.*** “A Nanotube colorant for synthetic fibers with much improved properties”, *J. Mater. Chem.* 2012, 22, 18653-

18657.

- (42) Guo, W.; Liu, C.; Sun, X.; Yang, Z.; Kia, H. G.; **Peng, H.*** “Aligned carbon nanotube/polymer composite fibers with improved mechanical strength and electrical conductivity”, *J. Mater. Chem.* 2012, 22, 903-908.
- (41) Cai, F.; Chen, T.; **Peng, H.*** “All carbon nanotube fiber electrode–based dye–sensitized photovoltaic wire”, *J. Mater. Chem.* 2012, 22, 14856-14860.
- (40) Huang, S.; Yang, Z.; Zhang, L.; He, R.; Chen, T.; Cai, Z.; Luo, Y.; Lin, H.; Cao, H.; Zhu, X.; **Peng, H.*** “A novel fabrication of well distributed and aligned carbon nanotube film electrode for dye-sensitized solar cell”, *J. Mater. Chem.* 2012, 22, 16833-16838.
- (39) Huang, S.; Lin, H.; Qiu, L.; Zhang, L.; Cai, Z.; Chen, T.; Yang, Z.; Yang, S.; **Peng, H.*** “Perpendicularly aligned carbon nanotube/olefin composite films for the preparation of graphene nanomaterials”, *J. Mater. Chem.* 2012, 22, 16209-16213.
- (38) Chen, X.; Li, L.; Sun, X.; Kia, H. G.; **Peng, H.*** “A novel synthesis of graphene nanoscrolls with tunable dimension at a large scale”, *Nanotechnology* 2012, 23, 407640.
- (37) Li, L.; Zhang, L.; Ren, J.; Zhang, H.; Sun, X.; Li, H.; Chen, T.; **Peng, H.*** "Intriguing hybrid nanotubes with tunable structures", *Chem. Phys. Lett.* 2011, 516, 204-207.
- (36) Luo, H.*; Zou, G.; Wang, H.; Lee, J. H.; Lin, Y.; **Peng, H.**; Lin, Q.; Deng, S.; Bauer, E.; McCleskey, T. M.; Burrell, A. K.; Jia, Q.* “Controlling crystal structure and oxidation state in molybdenum nitrides through epitaxial stabilization”, *J. Phys. Chem. C* 2011, 115, 17880-17883.
- (35) Yang, Z.; Sun, X.; Chen, X.; Yang, Z.; Xu, G.; He, R.; An, Z.; Li, Q.*; **Peng, H.*** "Structure and property dependence of carbon nanotube fiber on heating treatment". *J. Mater. Chem.* 2011, 21, 13772-13775.
- (34) Yang, Z.; Chen, T.; He, R.; Guan, G.; Li, H.; **Peng, H.*** "Aligned carbon nanotube sheet for electrode of organic solar cell". *Adv. Mater.* 2011, 23, 5636-5639.
- (33) Huang, S.; Li, L.; Yang, Z.; Zhang, L.; Saiyin, H.; Chen, T.; **Peng, H.*** "A new and general fabrication of aligned carbon nanotube/polymer film for electrode application". *Adv. Mater.* 2011, 23, 4707-4710.
- (32) Chen, T.; Cai, Z.; Yang, Z.; Li, L.; Sun, X.; Huang, T.; Yu, A.; Kia, H. G.; **Peng, H.*** "Nitrogen-doped carbon nanotube composite fiber with a core-sheath structure for novel electrode". *Adv. Mater.* 2011, 23, 4620-4625.
- (31) Li, L.; Yang, Z.; Gao, H.; Zhang, H.; Ren, J.; Sun, X.; Chen, T.; Kia, H. G.; **Peng, H.*** “Vertically aligned and penetrated carbon nanotube/polymer composite film and promising electronic applications”. *Adv. Mater.* 2011, 23, 3730-3735.
- (30) Chen, X.; Li, L.; Sun, X.; Liu, Y.; Luo, B.; Wang, C.; Bao, Y.; Xu, H.; **Peng, H.*** “Magnetochromatic polydiacetylene by incorporation of Fe₃O₄ nanoparticles”. *Angew. Chem. Int. Ed.* 2011, 50, 5486-5489.
- (29) Chen, T.; Wang, S.; Yang, Z.; Feng, Q.; Sun, X.; Li, L.; Wang, Z.*; **Peng, H.*** “Flexible, light-weight, ultrastrong, and semiconductive carbon nanotube fiber for highly efficient novel solar cell”, *Angew. Chem. Int. Ed.* 2011, 50, 1815-1819. (Highlighted by *NPG Asia Materials, Nature Asia-Pacific et al.*)
- (28) Sun, X.; Chen, T.; Huang, S.; Li, L.; **Peng, H.*** “Chromatic polydiacetylene with novel sensitivity”. *Chem. Soc. Rev.* 2010, 39, 4244-4257. (invited review article)

- (27) Sun, X.; Chen, T.; Huang, S.; Cai, F.; Chen, X.; Yang, Z.; Li, L.; Lu, Y.; **Peng, H.*** “UV-induced chromatism of polydiacetylenic assemblies”. *J. Phys. Chem. B* **2010**, 114, 2379-2383.
- (26) **Peng, H.***; Lin, C. “Nanomaterials for cancer diagnosis and therapy”. *J. Nanomater.* 2010, 92901.
- (25) **Peng, H.***; Sun, X.; Cai, F.; Chen, X.; Zhu, Y.; Liao, G.; Chen, D.; Li, Q.; Lu, Y.; Zhu, Y.; Jia, Q. “Electrochromatic carbon nanotube/polydiacetylene nanocomposite fibres”. *Nature Nanotechnology* **2009**, 4, 738-741. (Highlighted by *Nature China*, *NPG Asia Materials*, et al. and Ranked #1 of “Top Ten Research Highlights” in 10/11 2009 by *Nature Asia-Pacific*)
- (24) Sun, X.; Chen, T.; Huang, S.; Cai, F.; Chen, X.; Yang, Z.; Lu, Y.; **Peng, H.*** “Stimuli-sensitive assemblies of homopolymers”. *Langmuir* **2009**, 25, 11980-11983.
- (23) **Peng, H.***; Sun, X. “Macroporous carbon nanotube arrays with tunable pore sizes and their template applications”. *Chem. Commun.* **2009**, 1058-1060.
- (22) Peng, H.*; Sun, X.; Zhao, P.; Chen, D. "Core-cross-linked polymer micelles via living polymerizations". *Mater. Sci. Eng. C* 2009, 29, 746-750.
- (21) Peng, H.*; Sun, X. “Highly aligned carbon nanotube/polymer composites with much improved electrical conductivities”. *Chem. Phys. Lett.* 2009, 471, 103-105.
- (20) **Peng, H.***; Chen, D.; Huang, J.; Chikkannanavar, S. B.; Hanisch, J.; Peterson, D. E.; Doorn, S. K.; Lu, Y.*; Zhu, Y.*; Jia, Q.* “Strong and ductile colossal carbon tubes with walls of rectangular macro-pores”. *Phys. Rev. Lett.* **2008**, 101, 145501. (Highlighted by *Nature News*, *Science News*, et al.)
- (19) **Peng, H.***; Menka, J.; Peterson, D. E.; Zhu, Y.*; Jia, Q.* “Composite carbon nanotube/silica fibers with improved mechanical strengths and electrical conductivities”. *Small* **2008**, 4, 1964-1967.
- (18) Yang, L.; **Peng, H.**; Mague, J.; Ashbaugh, H. S.; Lu, Y.* “Multi-scale assembly of perylenediimide-bridged silsesquioxane”. *Adv. Funct. Mater.* **2008**, 18, 1526-1535. (The 2nd most-accessed article of this journal in 5/2008)
- (17) **Peng, H.***; Zhu, Y.; Peterson, D. E.; Lu, Y.* “Nanolayered carbon/silica superstructures via organosilane assembly”. *Adv. Mater.* **2008**, 20, 1199-1204.
- (16) **Peng, H.***; Lu, Y. “Squarely mesoporous and functional nanocomposites by self-directed assembly of organosilane”. *Adv. Mater.* **2008**, 20, 797-800.
- (15) **Peng, H.***; Jain, M.; Li, Q.; Peterson, D. E.; Zhu, Y.*; Jia, Q.* “Vertically aligned pearl-like carbon nanotube arrays for fiber spinning”. *J. Am. Chem. Soc.* **2008**, 130, 1130-1131.
- (14) **Peng, H.*** “Aligned carbon nanotube/polymer composite films with robust flexibility, high transparency, and excellent conductivity”. *J. Am. Chem. Soc.* **2008**, 130, 42-43. (Awarded as “JACS Select” by this journal)
- (13) **Peng, H.*** “Unusual assembly of small organic building molecules in common solvent”. *J. Phys. Chem. B* **2007**, 111, 8885-8890.
- (12) Shen, W.; Wang, H.; **Peng, H.**; Nie, L.; Chen, D.*; Jiang, M. “Facile preparation of stabilized polymeric nanotubes using sacrificial yttrium hydroxide nanotubes as template

and block copolymer micelles as precursor”. *Chem. Commun.* **2007**, 2360–2362.

- (11) Cheng, F.; Yang, X.; **Peng, H.**; Chen, D.*; Jiang, M. “Well-controlled formation of polymeric micelles with a nanosized aqueous core and their applications as nanoreactors”. *Macromolecules* **2007**, 40, 8007–8014.
- (10) **Peng, H.**; Lu, Y.* “Supramolecular assemblies with tunable morphologies from homopolymer and small organic molecules”. *Langmuir* **2006**, 22, 5525–5527. ([The 9th most-accessed article of this journal in 4-7/2006](#))
- (9) Pang, J.; Yang, L.; McCaughey, B. F.; **Peng, H.**; Ashbaugh, H. S.; Brinker, C. J.; Lu, Y.* “Thermochromatism and structural evolution of metastable polydiacetylenic crystals”. *J. Phys. Chem. B* **2006**, 110, 7221–7225.
- (8) Pang, J.; Yang, L.; Douglas A. Loy; **Peng, H.**; Mague, J.; Ashbaugh, H. S.; Brinker, C. J.; Lu, Y.* “Mesoscopically ordered organosilica and carbon-silica hybrids with uniform morphology by surfactant-assisted self-Assembly of organo bis-silanetriols”. *Chem. Commun.* **2006**, 14, 1545–1547.
- (7) **Peng, H.**; Tang, J.; Yang, L.; Pang, J.; Ashbaugh, H. S.; Brinker, C. J.; Yang, Z.; Lu, Y.* “Responsive periodic mesoporous polydiacetylene/silica nanocomposites”. *J. Am. Chem. Soc.* **2006**, 128, 5304–5305.
- (6) **Peng, H.**; Tang, J.; Pang, J.; Chen, D.; Yang, L.; Ashbaugh, H. S.; Brinker, C. J.; Yang, Z.*; Lu, Y.* “Polydiacetylene/silica nanocomposites with tunable mesostructure and thermochromatism from diacetylenic assembling molecules”. *J. Am. Chem. Soc.* **2005**, 127, 12782–12783. ([Highlighted as “Heart Cut” paper by the American Chemical Society in 2005](#))
- (5) **Peng, H.**; Chen, D.*; Jiang, M. “A novel one-step approach to core-stabilized nanoparticles at high solid contents”. *Macromolecules* **2005**, 38, 3550–3553. ([The 2nd most-accessed article of this journal in 2005](#))
- (4) **Peng, H.**; Chen, D.*; Jiang, M. “Self-organization of PFOA/PS-b-P4VP in their common solvent methanol-containing chloroform”. *J. Phys. Chem. B* **2003**, 107, 12461–12464.
- (3) **Peng, H.**; Chen, D.*; Jiang, M. “Self-assembly of formic acid/PS-b-P4VP complexes into vesicles in their common solvent chloroform”. *Langmuir* **2003**, 19, 10989–10992.
- (2) Chen, D.*; **Peng, H.**; Jiang, M.* “Crosslinking-induced micellization of diblock copolymers: a novel one-step approach to core-stabilized micelles at high solid contents”. *Macromolecules* **2003**, 36, 2576–2578.
- (1) Dou, H.; Jiang, M.*; **Peng, H.**; Chen, D.; Hong, Y. “pH-dependent micellization and micelle to hollow sphere transition of hydroxyethyl cellulose- graft-poly (acrylic acid) in aqueous solution”. *Angew. Chem. Int. Ed.* **2003**, 42, 1516–1519.

International Patent

- (4) Peng, H.; Peterson, D. E.; Zhu, Y.; Jia, Q. “Fibrous composites comprising carbon nanotubes and silica”. US Patent, issued date: 2011.10.11, patent number: 8034448.
- (3) Peng, H.; Peterson, D. E.; Zhu, Y.; Jia, Q. “Carbon microtubes”, US Patent, issued date: 2011.1.14, patent number: 7959889B2.

- (2) Chen, D.; Jiang, M.; Peng, H. “Method for preparation of block copolymer nanoparticles”. World Patent, issued date: 2003.8.14, patent number: 066712; US Patent, issued date: 2007.1.23, patent number: 7166306B2; European Patent, issued date: 2006.4.26, patent number: 1472309.
- (1) Peng, H.; Peterson, D. E.; Zhu, Y.; Jia, Q. “Carbon nanotube/polydiacetylene composites”. US Patent, issued date: 2011.5.5, patent number: 12/807,040.

Chinese Patent

- (24) Peng, H.; Yang, Z.; Li, L. “A new method to prepare aligned carbon nanotube/polymer composite film”, Chinese Patent, issued date: 2011.3.1, patent number: ZL 2011 1 0048216.1.
- (23) Peng, H.; Sun, X. “A new method on the synthesis of carbon nanotube composite fibers with excellent properties”, Chinese Patent, issued date: 2012.6.5, patent number: ZL 2009 1 0200009.6.
- (22) Peng, H.; Wang, Z.; Chen, T.; Wang, S. “Organic solar cells based on carbon nanotube fibers”, Chinese Patent, issued date: 2012.5.30, patent number: ZL 2010 1 0504015.3.
- (21) Peng, H.; Sun, X. “Synthesis of a reversibly electrochromatic composite fiber”, Chinese Patent, issued date: 2012.1.4, patent number: 10055192.5.
- (20) Chen, D.; Jiang, M.; Peng, H. “Method for preparation of block copolymer nanoparticles”. Chinese Patent, issued date: 2005.5.4, patent number: 02110775.0.
- (19) Chen, D.; Jiang, M.; Peng, H. “Making polymer nanometer micelles with core-shell structure by living polymerization”. Chinese Patent, issued date: 2005.3.30, patent number: 02110774.2.
- (18) Qiu, Z.; Guan, G.; Ma, Q.; Peng, H. “Preparation of black para-aramid fibers”. Chinese Patent, application date: 2012.10.30, application number: 201210307908.8.
- (17) Peng, H.; Chen, T.; Fang, X. “An integrated wire device to simultaneously realizing photoelectric conversion and energy storage”, Chinese Patent, application date: 2012.10.26, application number: 2012102600602460.
- (16) Peng, H.; Lin, H.; Li, L. “Supercapacitor based on aligned carbon nanotube/polyaniline composite film as electrode”, Chinese Patent, application date: 2012.9.12, application number: 2012091200307990.
- (15) Peng, H.; Huang, S.; Lin, H.; Zhang, L.; Cai, Z. “A new method to prepare graphene nanoribbons with tunable sizes”, Chinese Patent, application date: 2012.7.16, application number: 2012071600158210.
- (14) Peng, H.; Yang, Z.; Huang, S.; Zhang, L.; Cai, Z. “A method to high performance aligned carbon nanotube film electrode”, Chinese Patent, application date: 2012.7.3, application number: 2012070300535530.
- (13) Peng, H.; Chen, T.; Qiu, L. “A novel dye-sensitized fiber solar cell based on carbon nanotube fibers”, Chinese Patent, application date: 2011.7.2, application number: 2012070200203970.
- (12) Peng, H.; Zhang, H. “Synthesis and application of highly aligned carbon nanotube/polymer composite thin films, Chinese Patent, application date: 2012.5.30, application number: 2012053000318980.

- (11) Peng, H.; Guo, W. "A new method to aligned helical carbon nanotube fibers and their applications", Chinese Patent, application date: 2012.5.22, application number: 2012052200701840.
- (10) Peng, H.; Yu, Y.; Sun, X. "A new method to prepare liquid crystal polymer/carbon nanotube composite film", Chinese Patent, application date: 2012.3.26, application number: 2012032600370780.
- (9) Peng, H.; Yang, Z.; Li, L. "Dye-sensitized solar cell based on aligned carbon nanotube film as counter electrolyte", Chinese Patent, application date: 2012.1.5, application number: 2012010500145030.
- (8) Peng, H.; Chen, T.; Qiu, L. "A new method to prepare fiber-shaped dye-sensitized solar cells", Chinese Patent, application date: 2012.12.12, application number: 201110409883.8.
- (7) Peng, H.; Chen, T.; Qiu, L. "A wire-shaped dye-sensitized solar cell based on carbon nanotube fibers", Chinese Patent, application date: 2011.12.12, application number: 201110408012.4.
- (6) Peng, H.; Huang, S.; Yang, Z. "A new method to prepare aligned carbon nanotube/polymer composite film", application date: Chinese Patent, 2011.8.11, application number: 201110229604.X.
- (5) Peng, H.; Yang, Z.; Chen, T. "Dye-sensitized solar cell using carbon nanotube/polymer composite film as a counter electrode", Chinese Patent, application date: 2011.8.3, application number: 201110219730.7.
- (4) Peng, H.; Yang, Z.; Chen, T. "Dye-sensitized solar cell based on the aligned carbon nanotube", Chinese Patent, application date: 2011.8.3, 201110219731.1.
- (3) Peng, H.; Chen, T.; Cai, Z. "Synthesis and application of core-sheath composite fibers based on carbon nanotubes", Chinese Patent, application date: 2011.8.2, application number: 201110217865.X.
- (2) Peng, H.; Yang, Z.; Li, L. "Preparation and application of aligned carbon nanotube/polymer composite film", Chinese Patent, application date: 2011.6.23, application number: 201110170137.8.
- (1) Peng, H.; Guo, W. "A new method to prepare aligned carbon nanotube/polymer composite fiber", Chinese Patent, application date: 2011.5.20, application number: 201110131244.x.

Selected Invited Presentation at International Conference

- (23) **Peng, H.** "Aligned carbon nanotube materials for optoelectronic applications". *IEEE International Electronics Conference*, Singapore, January 2013.
- (22) **Peng, H.** "Novel photovoltaic devices in a wire format". *The 1st Chungju-Suzhou international workshop on novel nanomaterials*, Suzhou, China, November 2012.
- (21) **Peng, H.** "Aligned carbon nanotube/polymer composite materials for photoelectric conversion and energy storage". *The Society for the Advancement of Material and Process Engineering Conference*, Beijing, China, October 2012.
- (20) **Peng, H.** "Aligned carbon nanotube/polymer materials for electronic applications". *International Conference on Emerging Advanced Materials*, Brisbane, Australia,

October 2012.

- (19) **Peng, H.** “Novel responsive polymer materials incorporated with aligned carbon nanotubes”. *1st Polymer Chemistry International Symposium*, Shanghai, China, September 2012.
- (18) **Peng, H.** “Organic optoelectronic materials and devices based on aligned carbon nanotubes”. *The 5th International Symposium on Polymer Chemistry*, Changchun, China, June 2012.
- (17) **Peng, H.** “Organic optoelectronic materials and devices based on aligned carbon nanotubes”. *International Symposium on Bio, Organic & Nano Electronics*, Nanjing, China, April 2012.
- (16) **Peng, H.** “Aligned carbon nanotubes for dye-sensitized solar cells”. *2011 Shanghai International Nanotechnology Cooperation Symposium*, Shanghai, China, October 2011.
- (15) **Peng, H.** “Aligned carbon nanotube/polymer materials for electronic applications”. *2011 China-Korea Joint Symposium on Nanoscience and Nanotechnology*, Shanghai, China, November 2011.
- (14) **Peng, H.** “Novel polymer and dye-sensitized solar cells based on aligned carbon nanotubes”. *Global Organic Photo-Voltaic Conference*, Hangzhou, China, October 2011.
- (13) Chen, T.; Yang, Z.; **Peng, H.** “Carbon Nanotube Fiber For Photovoltaic Application”. *19th Annual International Conference on Composites or Nano Engineering*, Shanghai, China, July 2011.
- (12) Sun, X.; **Peng, H.** “Highly Aligned Carbon Nanotube/Polymer Composites With Much Improved Electrical Conductivities”. *19th Annual International Conference on Composites or Nano Engineering*, Shanghai, China, July 2011.
- (11) **Peng, H.** “Functional materials for biomedical applications”. *2011 China and Finland Workshop on Biomanufacturing and Evaluation Techniques*, Tianjing, China, April 2011.
- (10) **Peng, H.** “Optoelectronic polymer materials based on aligned carbon nanotubes”. *Sino-US symposium on Nanoscale Science and Technology (5th Sino-US Nano Forum)*, Suzhou, China, June 2010.
- (9) **Peng, H.** “Highly aligned carbon nanotube composites”. *2010 Spring Materials Research Society Meeting*, San Francisco, CA, April 2010.
- (8) **Peng, H.** “Highly aligned carbon nanotube/polymer composites”. *2009 International Conference on Advanced Fibers and Polymer Materials*, Shanghai, China, October 2009.
- (7) **Peng, H.** “Intelligent Polymer Micelles”. *1st Sino-USA Forum on Nano Biomedicine*, Shanghai, China, May 2009.
- (6) **Peng, H.** “Chromatic Polydiacetylene Nanocomposites”. *2009 Sino-French Bilateral Seminar on Macromolecular and molecular Science*, Shanghai, China, May 2009.
- (5) **Peng, H.;** Zhu, Y.; Jia, Q. “Novel carbon nanotube/polymer composite nanomaterials”. *The 236th American Chemical Society National Meeting*, Philadelphia, PA, August 2008. (session presentation)

- (4) **Peng, H.;** Zhu, Y. “Polymer nanocomposites containing aligned carbon nanotubes”. *2007 Fall American Chemical Institute of Chemical Engineers National Meeting*, Salt Lake City, Utah, November 2007.
- (3) **Peng, H.;** Zhu, Y. “Chromatic carbon nanotube fibers”. *2007 Fall Materials Research Society Meeting*, Boston, MA, November 2007.
- (2) **Peng, H.;** Zhu, Y. “Organic core-shell nanoobjects by living anionic polymerization”. *The 233rd American Chemical Society National Meeting*, Chicago, IL, March 2007.
- (1) **Peng, H.;** Zhu, Y. “Supramolecular assembly in common organic solvent from block copolymer and organic acid”. *The 233rd American Chemical Society National Meeting*, Chicago, IL, March 2007.

Other Conference Presentation

- (22) **Peng, H.;** Tang, J.; Yang, L.; Ashbaugh, H. S.; Lu, Y. “Responsive polydiacetylene/silica nanocomposites”. *2006 Fall American Institute of Chemical Engineers National Meeting*, San Francisco, CA, November 2006.
- (21) **Peng, H.;** Yang, L.; Ashbaugh, H. S.; Lu, Y. “Hierarchical assemblies from bridged perylene diimide silsesquioxane building molecules”. *2006 Fall American Institute of Chemical Engineers National Meeting*, San Francisco, CA, November 2006.
- (20) **Peng, H.;** Tang, J.; Yang, L.; Ashbaugh, H.; Lu, Y. *2006 Fall American Institute of Chemical Engineers National Meeting*, San Francisco, CA, November 2006. “Responsive nanocomposites through hierarchical assembly”.
- (19) Yang, L.; **Peng, H.;** Lu, Y.; Ashbaugh, H. “Self-assembly of organic semiconductor molecules: experiments, molecular modeling and simulation”. *2006 Fall American Institute of Chemical Engineers National Meeting*, San Francisco, CA, November 2006.
- (18) Yang, L.; **Peng, H.;** Lu, Y.; Ashbaugh, H. “Experimental and theoretical study of light-responsive polydiacetylene nanocomposites”. *2006 Fall American Institute of Chemical Engineers National Meeting*, San Francisco, CA, November 2006.
- (17) **Peng, H.** “Self-assembly of homopolymer/small organic building molecules in the common solvent”. *The 232nd American Chemical Society National Meeting*, San Francisco, CA, September 2006.
- (16) **Peng, H.;** Tang, J.; Lu, Y. “Chromatically responsive ordered mesoporous materials”. *The 5th International Mesoporous Materials Symposium (IMMS 2006)*, Shanghai, China, August 2006.
- (15) **Peng, H.;** Lu, Y. “Polydiacetylene/silica nanocomposites with tunable mesostructure and thermochromatism from diacetylenic assembling molecules”. *The 231st American Chemical Society National Meeting*, Atlanta, GA, March 2006.
- (14) **Peng, H.;** Chen, D.; Lu, Y. “pH-responsive self-assembly of homopolymers and the applications as drug delivery”. *The 230th American Chemical Society National Meeting*, Washington, DC, August 2005.
- (13) **Peng, H.** “Supramolecular self-assembly with tunable morphologies”. *The 230th American Chemical Society National Meeting*, Washington, DC, August 2005.
- (12) **Peng, H.** “Temperature-responsive supramolecular assembly”. *The 230th American Chemical Society National Meeting*, Washington, DC, August 2005.

- (11) **Peng, H.** “Self-assembly of Formic acid/PS-b-P4VP complexes into vesicles in their common solvent chloroform”. *The 229th American Chemical Society National Meeting*, San Diego, CA, March 2005.
- (10) **Peng, H.** “Crystallization induced self-assembly of perfluorooctanoic acid/ PS-b-P4VP in the common solvent”. *The 229th American Chemical Society National Meeting*, San Diego, CA, March 2005.
- (9) **Peng, H.;** Lu, Y. “Functional conjugated nanocomposites through assembly of silica and conjugated oligomers”. *Spring Materials Research Society Meeting*, San Francisco, CA, March 2005.
- (8) **Peng, H.;** Lu, Y. “Responsive supramolecular particles from assemblies of homopolymers”. *Spring Materials Research Society Meeting*, San Francisco, CA, March 2005.
- (7) **Peng, H.;** Lu, Y. “Supramolecular assembly of thermo-sensitive hierarchical hollow spheres”. *Spring Materials Research Society Meeting*, San Francisco, CA, March 2005.
- (6) **Peng, H.;** De Kee, D.; Lu, Y. “Thermo-sensitive self-labeled hierarchical polymeric hollow spheres by supramolecular assembly”. *5th Louisiana Conference on Advance Materials and Emerging Technologies*, New Orleans, LA, January 2005.
- (5) **Peng, H.;** Nohyphen, L. B.; De Kee, D.; Lu, Y. “Self-directed assembly of mesoscopically ordered polydiacetylene/silica nanocomposites from bridged silsesquioxanes”. *The 5th Louisiana Conference on Advance Materials and Emerging Technologies*, New Orleans, LA, January 2005.
- (4) **Peng, H.;** Lu, Y. “Self-directed assembly of mesoscopically ordered polydiacetylene/silica nanocomposites from bridged silsesquioxanes”. *2004 Fall Materials Research Society Meeting*, Boston, MA, December 2004.
- (3) **Peng, H.;** Lu, Y. “Polydiacetylene/silica nanocomposites”. *2004 Fall American Institute of Chemical Engineers National Meeting*, Austin, TX, November 2004.
- (2) **Peng, H.;** Chen, D.; Jiang, M. “Crosslinking-induced micellization of diblock copolymer”. *The 39th World Polymer Congress of IUPAC*, Beijing, China, July 2002.
- (1) Chen, D.; **Peng, H.;** Jiang, M. “Organic acids induced micellization of polystyrene-block-poly (4-vinyl pyridine)”. *The 39th World Polymer Congress of IUPAC*, Beijing, China, July 2002.