

Curriculum Vitae

Peng Zhang

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Education

9/2003-4/2009 Northwestern Polytechnical University, **Ph.D.** in *Precise Instrument and Mechanics*

9/2001-3/2004 Northwestern Polytechnical University, **M.S.** in *Optical Engineering*

9/1997-7/2001 Northwestern Polytechnical University, **B.S.** in *Applied Physics*

Employment History

1/2011- present University of California, Berkeley, *Postdoctoral scholar*

5/2009-12/2010 San Francisco State University, *Postdoctoral scholar*

5/2006-4/2009 Northwestern Polytechnical University, *Lecturer*

4/2004-4/2006 Northwestern Polytechnical University (NPU), *Teaching assistant*

Teaching Experience

1. **Lecturer** for *Principles of Lasers* for undergraduate students (2005-2008)
2. **Lecturer** for *Modern Optical Measurement Technology* for undergraduate students (2005-2007)
3. **Lab Instructor** for *Modern Optics Laboratory* for undergraduate students (2006)

Research Experience

1. Hybrid nonlinearity

- A. Theoretically predict and experimentally demonstrated the concept of hybrid nonlinearity (coexistence of self-focusing and -defocusing).
- B. Proposed and demonstrated series of nonlinear light dynamics under hybrid nonlinearity in both continuum and discrete regimes, including spatial solitons, optical vortices, and lattice solitons.

2. Ionic-type periodic photonic structure

- A. Introduced the concept of “ionic-type periodic photonic structure” with both positive and negative potentials and established a *Geometrical Structure Factor* for such lattices.
- B. Proposed and demonstrated bandgap engineering with optically induced lattices.
- C. Proposed and demonstrated optical control over normal and anomalous diffraction, positive and negative refraction, and optical Bloch modes in reconfigurable photonic lattices.

3. Three-dimensional photonic lattice

- A. Experimentally demonstrated reconfigurable three-dimensional photonic lattices with optical induction method.
- B. Experimentally demonstrated enhanced discrete diffraction, coherent destructive tunneling, anomalous diffraction, negative refraction, as well as image transmission in such 3D lattices.

4. Refractive index engineering in nonlinear crystals

- A. Proposed and experimentally demonstrated visualizations of the light-induced refractive index changes in nonlinear crystals by using *digital holography*.

- B. Systemically studied the light-induced index changes in nonlinear crystals, including the relationship between the index change and time, intensity profile, as well as transverse beam shape.
- C. Proposed and demonstrated a method to obtain desired distribution of light-induced index changes by solving the reversed problem of nonlinear index changes.

5. Light-induced 3D light circuits

- A. Systematically studied laser micromachining, spatial optical solitons, and various structure-light illumination techniques for fabrication of variety of optical waveguides and waveguide arrays.
- B. Proposed a novel optical induction technique by combining laser micromachining, structure-light illumination, and soliton induction methods to build 3D optical circuits.

6. Self-accelerating beams

- A. Theoretically and experimentally demonstrated both linear and nonlinear *nonparaxial accelerating beams* as exact solutions of Helmholtz equation.
- B. Experimentally demonstrated the generation and dynamic trajectory control of plasmonic Airy beams on a two-dimensional metal surface.
- C. Theoretically and experimentally demonstrated both linear and nonlinear control of Airy beams.
- D. Experimentally demonstrated abruptly focusing beams and optical bottles with circular Airy beams.

7. Optical tweezers with novel light beams

- A. Proposed and experimentally demonstrated the generation and nonlinear self-trapping of optical propellers with Moiré technique.
- B. Invented Moiré-based rotating optical tweezers for micro-particles and bacteria.
- C. Proposed and demonstrated manipulation of absorbing particles in air with single optical bottle beams generated by Moiré technique.
- D. Experimentally demonstrated micro-particle guiding with abruptly focusing Airy beams.

Selected Publications

1. **Peng Zhang**, Yi Hu, Drake Cannan, Alessandro Salandrino, Tongcang Li, Roberto Morandotti, Xiang Zhang, and Zhigang Chen. Generation of linear and nonlinear nonparaxial accelerating beams. *Optics Letters* 2012 (in press).
2. **Peng Zhang**, Nikolaos K. Efremidis, Alexandra Miller, Peigen Ni, and Zhigang Chen. Reconfigurable 3D photonic lattices by optical induction for optical control of beam propagation. *Applied Physics B* 2011, 104(3): 553-560. (Invited paper)
3. **Peng Zhang**, Sheng Wang, Yongmin Liu, Xiaobo Yin, Changgui Lu, Zhigang Chen, and Xiang Zhang. Plasmonic Airy beams with dynamically controlled trajectories. *Optics Letters* 2011, 36(16): 3191-3193. (Featured by **OSA News**, **LBL News**, **OPN**, **Laser Focus World**, and **New Scientists**)
4. **Peng Zhang**, Jai Prakash, Ze Zhang, Matthew S. Mills, Nikolaos K. Efremidis, Demetrios N. Christodoulides and Zhigang Chen. Trapping and guiding micro-particles with morphing auto-focusing Airy beams. *Optics Letters* 2011, 36(15): 2883-2885.
5. **Peng Zhang**, Ze Zhang, Jai Prakash, Simon Huang, Daniel Hernandez, Matthew Salazar, Demetrios N. Christodoulides and Zhigang Chen. Trapping and transporting aerosols with a single optical bottle beam generated by Moiré techniques. *Optics Letters* 2011, 36(8): 1491-1493.
6. **Peng Zhang**, Nikolaos K. Efremidis, Alexandra Miller, Yi Hu, and Zhigang Chen. Observation of coherent destruction of tunneling and unusual beam dynamics due to negative coupling in three-dimensional photonic lattices. *Optics Letters* 2010, 35(19): 3252-3254.
7. **Peng Zhang**, Simon Huang, Yi Hu, Daniel Hernandez, and Zhigang Chen. Generation and nonlinear

- self-trapping of optical propelling beams. *Optics Letters* 2010, 35(18): 3129-3131. (**Cover story**)
8. **Peng Zhang**, Cibo Lou, Sheng Liu, Fajun Xiao, Xiaosheng Wang, Jianlin Zhao, Jingjun Xu, and Zhigang Chen. Incomplete Brillouin zone spectra and controlled Bragg reflection with ionic-type photonic lattices. *Phys. Rev. A Rapid Communication* 2010, 81(4): 041801(R).
 9. **Peng Zhang**, Cibo Lou, Sheng Liu, Jianlin Zhao, Jingjun Xu, and Zhigang Chen. Tuning of Bloch modes, diffraction and refraction by two-dimensional lattice reconfiguration. *Optics Letters* 2010, 35(6): 892-894.
 10. **Peng Zhang**, Robert Egger, and Zhigang Chen. Optical induction of three-dimensional photonic lattices and enhancement of discrete diffraction. *Optics Express* 2009, 17(15): 13151-13156.
 11. **Peng Zhang**, Sheng Liu, Cibo Lou, Yuhan Gao, Jianlin Zhao, Jingjun Xu, and Zhigang Chen. Hybrid nonlinearity supported by nonconventionally biased photorefractive crystal. *Applied Physics B* 2009, 95(3): 559-563.
 12. **Peng Zhang**, Cibo Lou, Sheng Liu, Fajun Xiao, Jianlin Zhao, Jingjun Xu, and Zhigang Chen. Band-gap engineering and light manipulation with reconfigurable egg-crate photonic lattices. December special issue *Optics and Photonics News: Optics in 2008* 2008, 19(12): 25.
 13. **Peng Zhang**, Sheng Liu, Jianlin Zhao, Cibo Lou, Jingjun Xu, and Zhigang Chen. Optically induced transition between discrete and gap solitons in a nonconventionally biased photorefractive crystal. *Optics Letters* 2008, 33(8): 878-880.
 14. **Peng Zhang**, Jianlin Zhao, Fajun Xiao, Cibo Lou, Jingjun Xu, and Zhigang Chen. Elliptical discrete solitons supported by enhanced photorefractive anisotropy. *Optics Express* 2008, 16(6): 3865-3870.
 15. **Peng Zhang**, Jianlin Zhao, Cibo Lou, Xiaoyu Tan, Yuhan Gao, Qian Liu, Dexing Yang, Jingjun Xu, and Zhigang Chen, Elliptical solitons in nonconventionally biased photorefractive crystals, *Optics Express* 2007, 15(2): 536-544.
 16. **Peng Zhang**, Yanghua Ma, Jianlin Zhao, Dexing Yang, and Honglai Xu. One-dimensional spatial dark soliton-induced channel waveguides in lithium niobate crystal. *Applied Optics*. 2006, 45(10): 2273-2278.
 17. **Peng Zhang**, Dexing Yang, Jianlin Zhao, and Meirong Wang. Photo-written waveguides in iron-doped lithium niobate crystal employing binary optical masks. *Optical Engineering*. 2006, 45(7): 074603.
 18. **Peng Zhang**, Jianlin Zhao, Honglai Xu, Yidong Sun, Dexing Yang, and Meirong Wang. Refractive index changes induced by sheet beams with various intensity distributions in LiNbO₃:Fe crystal, *Science in China G*, 2005, 48(4): 399-412.
 19. **Peng Zhang**, Dexing Yang, Jianlin Zhao, Kun Su, Jianbo Zhou, Bili Li, and Dongsheng Yang. Light-induced array of three-dimensional waveguides in lithium niobate employing two-beam interference field. *Chinese Physics Letters*. 2004, 21(8): 1558-1561.
 20. **Peng Zhang**, Jianlin Zhao, Dexing Yang, Bili Li, and Dongsheng Yang. Optical masks prepared by using liquid crystal light valve for light-induced photorefractive waveguides. *Applied Optics*. 2003, 42(20): 4208-4211.
 21. **Peng Zhang**, Jianlin Zhao, Dexing Yang, Bili Li, and Chen Xu. Optically induced photorefractive waveguides in KNSBN:Ce crystal. *Optical Materials*. 2003, 23(1-2):299-303.

Patents

1. A test instrument for holographic combiner. **Chinese practical new patent**. Patent No.: ZL200720126109.5
2. Graded-index bulk glass optical current transducer. **Chinese national invention patent**. Patent No.: ZL200810017457.8

3. A new type of graded-index bulk glass optical current transducer. **Chinese national invention patent.** Patent No.: ZL200810017458.2
4. Graded-index bulk glass optical current transducer. **Chinese practical new patent.** Patent No.: ZL200820028254.5
5. A new type of graded-index bulk glass optical current transducer. **Chinese practical new patent.** Patent No.: ZL200820028255.9
6. High resolution image recording system for digital holography. **Chinese national invention patent.** Patent No.: ZL200710018669.3

Grants

1. The NPU Foundation for Fundamental Research, **200,000RMB** (2007-2009)
2. The Open Foundation of Key Laboratory of Weak-Light Nonlinear Photonics, Ministry of Education, Nankai University, **20,000RMB** (2007-2009)
3. The Doctorate Foundation of NPU, **80,000RMB** (2005-2008)
4. The Youth for NPU Teachers Scientific and Technological Innovation Foundation **20,000RMB** (2004-2006)
5. The Postgraduate Seeds Foundation of NPU, **10,000RMB** (2003-2004)

Awards

1. Second Class Award for Science and Technology of Shaanxi Province (2008)
2. First Class Award for Science and Technology of Colleges and University of Shaanxi Province (2007)
3. The prize for the best poster of the Sino-German DAAD Summer School “Frontiers in Optics: from Nonlinear to Extreme Optics” (2007)
4. Advisor of excellent Bachelor’s thesis of NPU (2007)
5. First class Master’s thesis award of NPU (2004)
6. First class Bachelor’s thesis award of NPU (2001)

Selected Other Honors

1. Pacemaker to Outstanding Graduate Students in NPU (2005)
2. Excellent Graduate Student for Scientific and Technological Research of School of Science in NPU, 2005
3. Excellent Student Leader of NPU (1999) and All-Round Excellent Student of NPU (2000)
4. Man’s Team Champion in Shaanxi Provincial Young College Teacher Championship (2004)
5. Man’s Team Third Place Holder in Shaanxi Provincial Table Tennis College Student Championship (2003)
6. Man’s Singles Champion in Graduate Student Table Tennis Championship of NPU (2002)
7. Man’s Singles Champion in “Sanhang Cup” Table Tennis Championship of NPU (2000, 2001)

Other Activities

1. Session presider of Optical Society of America (OSA) 93rd and 95th Annual meeting (Frontiers in Optics).
2. Member of APS, OSA, SPIE, and Chinese Optical Society (COS).
3. Referee for international journals, books and awards, including *Phys. Rev. Lett.*, *Phys. Rev. A*, *Phys. Rev. B*, *Opt. Lett.*, *Opt. Express*, *Electron. Lett.*, *JOSA B*, *J. Lightwave Technol.*, *Appl. Opt.*, *J. Opt.*, *Opt. Commun.*, *Appl. Phys. B*, *J. Phys. B*, *J. Phys. D*, and *Chin. Opt. Lett.*
4. President of Table Tennis Student Association of NPU (1999-2000).
5. Participated National Table Tennis College Student Championship in China (1999, 2000).

Full Publication List

Invited Book Chapters

1. **Peng Zhang**, Cibo Lou, Yi Hu, Sheng Liu, Jianlin Zhao, Jingjun Xu, and Zhigang Chen, “Spatial beam dynamics mediated by hybrid nonlinearity,” **Invited Book Chapter**, in “Nonlinear photonics and novel optical phenomena,” Z. Chen and R. Morandotti ed. (Springer, 2012).
2. Yi Hu, G. A. Siviloglou, **Peng Zhang**, D. N. Christodoulides, and Zhigang Chen, “Self-accelerating Airy beams: generation, control, and applications,” **Invited Book Chapter**, in “Nonlinear photonics and novel optical phenomena,” Z. Chen and R. Morandotti ed. (Springer, 2012).

Peer Reviewed Journals

1. **Peng Zhang**, Yi Hu, Drake Cannan, Alessandro Salandrino, Tongcang Li, Roberto Morandotti, Xiang Zhang, and Zhigang Chen. Generation of linear and nonlinear nonparaxial accelerating beams. *Optics Letters* 2012 (in press).
2. **Peng Zhang**, Nikolaos K. Efremidis, Alexandra Miller, Peigen Ni, and Zhigang Chen. Reconfigurable 3D photonic lattices by optical induction for optical control of beam propagation. *Applied Physics B* 2011, 104(3): 553-560 (**Invited paper**).
3. **Peng Zhang**, Sheng Wang, Yongmin Liu, Xiaobo Yin, Changgui Lu, Zhigang Chen, and Xiang Zhang. Plasmonic Airy beams with dynamically controlled trajectories. *Optics Letters* 2011, 36(16): 3191-3193. (Featured by **OSA Release, LBL News, OPN, Laser Focus World, and New Scientists**)
4. **Peng Zhang**, Jai Prakash, Ze Zhang, Matthew S. Mills, Nikolaos K. Efremidis, Demetrios N. Christodoulides and Zhigang Chen. Trapping and guiding micro-particles with morphing auto-focusing Airy beams. *Optics Letters* 2011, 36(15): 2883-2885.
5. **Peng Zhang**, Ze Zhang, Jai Prakash, Simon Huang, Daniel Hernandez, Matthew Salazar, Demetrios N. Christodoulides and Zhigang Chen. Trapping and transporting aerosols with a single optical bottle beam generated by Moiré techniques. *Optics Letters* 2011, 36(8): 1491-1493.
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7. **Peng Zhang**, Simon Huang, Yi Hu, Daniel Hernandez, and Zhigang Chen. Generation and nonlinear self-trapping of optical propelling beams. *Optics Letters* 2010, 35(18): 3129-3131. (**Cover story**)
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9. **Peng Zhang**, Cibo Lou, Sheng Liu, Jianlin Zhao, Jingjun Xu, and Zhigang Chen. Tuning of Bloch modes, diffraction and refraction by two-dimensional lattice reconfiguration. *Optics Letters* 2010, 35(6): 892-894.
10. **Peng Zhang**, Robert Egger, and Zhigang Chen. Optical induction of three-dimensional photonic lattices and enhancement of discrete diffraction. *Optics Express* 2009, 17(15): 13151-13156.
11. **Peng Zhang**, Sheng Liu, Cibo Lou, Yuhao Gao, Jianlin Zhao, Jingjun Xu, and Zhigang Chen. Hybrid nonlinearity supported by nonconventionally biased photorefractive crystal. *Applied Physics B* 2009, 95(3): 559-563.
12. **Peng Zhang**, Cibo Lou, Sheng Liu, Fajun Xiao, Jianlin Zhao, Jingjun Xu, and Zhigang Chen. Band-gap engineering and light manipulation with reconfigurable egg-crate photonic lattices. December special

- issue *Optics and Photonics News (Optics in 2008)* 19(12): 25 (2008).
13. **Peng Zhang**, Sheng Liu, Jianlin Zhao, Cibo Lou, Jingjun Xu, and Zhigang Chen. Optically induced transition between discrete and gap solitons in a nonconventionally biased photorefractive crystal. *Optics Letters* 2008, 33(8): 878-880.
 14. **Peng Zhang**, Jianlin Zhao, Fajun Xiao, Cibo Lou, Jingjun Xu, and Zhigang Chen. Elliptical discrete solitons supported by enhanced photorefractive anisotropy. *Optics Express* 2008, 16(6): 3865-3870.
 15. **Peng Zhang**, Qian Liu, Yuxuan Ren, Xiaoyu Tan, Hongying Yang, and Jianlin Zhao. Soliton-induced real-time planar waveguide and its guiding property in SBN:Cr crystal. *Acta Photonica Sinica* 2008, 37(5): 935-939.
 16. **Peng Zhang**, Jianlin Zhao, Cibo Lou, Xiaoyu Tan, Yuhan Gao, Qian Liu, Dexing Yang, Jingjun Xu, and Zhigang Chen, Elliptical solitons in nonconventionally biased photorefractive crystals, *Optics Express* 2007, 15(2): 536-544.
 17. **Peng Zhang**, Yanghua Ma, Jianlin Zhao, Dexing Yang, and Honglai Xu. One-dimensional spatial dark soliton-induced channel waveguides in lithium niobate crystal. *Applied Optics*. 2006, 45(10): 2273-2278.
 18. **Peng Zhang**, Dexing Yang, Jianlin Zhao, and Meirong Wang. Photo-written waveguides in iron-doped lithium niobate crystal employing binary optical masks. *Optical Engineering*. 2006, 45(7): 074603.
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 20. **Peng Zhang**, Dexing Yang, Jianlin Zhao, Honglai Xu, and Kun Su. Fabrication of waveguides with arbitrary index profiles in LiNbO₃:Fe crystal by white light irradiation. *Acta Photonica Sinica*. 2005, 34(10): 1456-1460.
 21. **Peng Zhang**, Dexing Yang, Jianlin Zhao, Kun Su, Jianbo Zhou, Bili Li, and Dongsheng Yang. Light-induced array of three-dimensional waveguides in lithium niobate employing two-beam interference field. *Chinese Physics Letters*. 2004, 21(8): 1558-1561.
 22. **Peng Zhang**, Jianlin Zhao, Dexing Yang, Bili Li, and Dongsheng Yang. Optical masks prepared by using liquid crystal light valve for light-induced photorefractive waveguides. *Applied Optics*. 2003, 42(20): 4208-4211.
 23. **Peng Zhang**, Jianlin Zhao, Dexing Yang, Bili Li, and Chen Xu. Optically induced photorefractive waveguides in KNSBN:Ce crystal. *Optical Materials*. 2003, 23(1-2):299-303.
 24. **Peng Zhang**, Jianlin Zhao, Dexing Yang, Meirong Wang, and Yidong Sun. Analyses of guiding properties of light-induced planar waveguides in LiNbO₃:Fe crystals. *Acta Physica Sinica* 2004, 53(10): 3369-3374.
 25. Fajun Xiao, **Peng Zhang**, Sheng Liu, and Jianlin Zhao. Discrete soliton interaction in quasi one-dimensional optically induced photonic lattice. *Acta Physica Sinica* 2012, 61(13): 134207.
 26. Ioannis Chremmos, **Peng Zhang**, Jai Prakash, Nikolaos K. Efremidis, Demetrios N. Christodoulides, and Zhigang Chen. Fourier-space generation of abruptly autofocusing beams and optical bottle beams. *Optics Letters* 2011, 36(18): 3675-3677.
 27. Fajun Xiao, **Peng Zhang**, Sheng Liu, and Jianlin Zhao, Tunable oscillation of discrete solitons triggered by coherent interactions. *Journal of Optics A* 2011, 13(10): 105101. (Cover story)
 28. Jianke Yang, **Peng Zhang**, Masami Yoshihara, Yi Hu, and Zhigang Chen, Image transmission using stable solitons of arbitrary shapes in photonic lattices. *Optics Letters* 2011, 36(5): 772-774.
 29. Simon Huang, **Peng Zhang**, Xiaosheng Wang, and Zhigang Chen. Observation of soliton interaction and planet-like orbiting in Bessel-like photonic lattices. *Optics Letters* 2010, 35(13): 2284-2286.
 30. Yi Hu, **Peng Zhang**, Cibo Lou, Simon Huang, Jingjun Xu, and Zhigang Chen. Optimal control of the

- ballistic motion of Airy beams. *Optics Letters* 2010, 35(13): 2260-2262.
31. Nikolaos K. Efremidis, **Peng Zhang**, Zhigang Chen, Demetrios N. Christodoulides, Christian E. Rüter, and Detlef Kip. Wave propagation in waveguide arrays with alternating positive and negative couplings. *Physical Review A* 2010, 81(5): 053817.
 32. Xuetao Gan, **Peng Zhang**, Sheng Liu, Youming Zheng, Jianlin Zhao, and Zhigang Chen. Stabilization and breakup of optical vortices in presence of hybrid nonlinearity. *Optics Express* 2009, 17(25): 23130-23136.
 33. Sheng Liu, **Peng Zhang**, Xuetao Gan, Fajun Xiao, and Jianlin Zhao. Visualization of Bragg reflection of complex photonic lattices by employing Brillouin zone spectroscopy. *Applied Physics B* 2010, 99(4): 727-731.
 34. Sheng Liu, **Peng Zhang**, Xuetao Gan, Fajun Xiao, and Jianlin Zhao. Interaction of in-band and in-gap lattice soliton trains in optically induced two-dimensional photonic lattices. *Chinese Physics B* 2010, 19(6): 065203.
 35. Fajun Xiao, **Peng Zhang**, Sheng Liu, Xuetao Gan, and Jianlin Zhao. Incoherent interaction between one- and two-dimensional solitons in noncentrosymmetric photorefractive media. *Chinese Physics B* 2010, 19(4): 044208.
 36. Sheng Liu, **Peng Zhang**, Cibo Lou, Fajun Xiao, and Jianlin Zhao. Numerical simulations of discrete propagations of light waves in optically induced planar waveguide arrays. *Journal of Modern Optics*. 2009, 56(5): 677-684.
 37. Sheng Liu, **Peng Zhang**, Fajun Xiao, Dexing Yang, and Jianlin Zhao. Influence of parameters on light propagation dynamics in optically induced planar waveguide arrays, *Science in China G*, 2009, 52(5): 747-754.
 38. Sheng Liu, **Peng Zhang**, Fajun Xiao, Xuetao Gan, and Jianlin Zhao. Analysis of linear defect modes in two-dimensional photonic lattices by employing Brillouin zone spectroscopy. *Acta Physica Sinica* 2009, 58(8): 5467-5472.
 39. Xuetao Gan, **Peng Zhang**, Sheng Liu, Fajun Xiao, and Jianlin Zhao. Solitary wave evolution of optical planar vortices in self-defocusing photorefractive media. *Chinese Physics Letters*. 2008, 25(9), 3280-3283.
 40. Yuhan Gao, **Peng Zhang**, Sheng Liu, Taian Huang, Dexing Yang, and Jianlin Zhao. Visualizations of dynamics of light-induced index changes during thermal fixing by employing the digital holography. *Acta Photonica Sinica*, 2008, 37(5): 964-968.
 41. Fajun Xiao, **Peng Zhang**, Sheng Liu, and Jianlin Zhao. Coherent interactions between discrete spatial solitons in light-induced planar waveguide arrays. *Acta Physica Sinica* 2008, 57(4): 2529-2536.
 42. Fajun xiao, **Peng Zhang**, Sheng Liu, and Jianlin Zhao, Coherent and incoherent interactions between discrete-soliton trains in two-dimensional light-induced photonic lattices, *Chinese Physics Letters*. 2007, 24(12): 3435-3438.
 43. Yanghua Ma, **Peng Zhang**, Jianlin Zhao, and Tao Peng. Numerical investigations of interactions among planar bright photorefractive screening solitons. *Acta Photonica Sinica*. 2006, 35(2): 252-256.
 44. Honglai Xu, **Peng Zhang**, Jianlin Zhao, Yuhan Gao, Zhijun Ye, and Dexing Yang. Optimum exposure intervals for light-induced optical waveguides in lithium niobate crystals by laser micromachining. *Acta Physica Sinica*. 2006, 55(6):3100-3105.
 45. Dexing Yang, **Peng Zhang**, Jianlin Zhao, and Kun Su. Planar waveguide array with Bragg grating and its fabrication method by laser irradiation. *Acta Photonica Sinica* 2004, 33(12): 1432-1435.
 46. Jianlin Zhao, **Peng Zhang**, Jianbo Zhou, Dexing Yang, Dongsheng Yang, and Enpu Li. Visualizations of light-induced refractive index changes in photorefractive crystals employing digital holography.

- Chinese Physics Letters*. 2003, 20(10): 1748-1751.
47. Sheng Liu, Yi Hu, **Peng Zhang**, Xuetao Gan, Cibo Lou, Daohong Song, Jianlin Zhao, Jingjun Xu, and Zhigang Chen, Tunable self-shifting Bloch modes in anisotropic hexagonal photonic lattices. *Optics Letters* 2012 (in press).
 48. Sheng Liu, Yi Hu, **Peng Zhang**, Xuetao Gan, Cibo Lou, Daohong Song, Jianlin Zhao, Jingjun Xu, and Zhigang Chen, Symmetry-breaking diffraction and dynamic self-trapping in optically induced hexagonal photonic lattices. *Applied Physics Letters* 2012, 100(6): 061907.
 49. Sheng Liu, Yi Hu, **Peng Zhang**, Xuetao Gan, Fajun Xiao, Cibo Lou, Daohong Song, Jianlin Zhao, Jingjun Xu, and Zhigang Chen, Anomalous interactions of spatial gap solitons in optically induced photonic lattices. *Optics Letters* 2011, 36(7): 1167-1169.
 50. Yi Hu, Simon Huang, **Peng Zhang**, Cibo Lou, Jingjun Xu, and Zhigang Chen. Persistence and break-down of Airy beams driven by an initial nonlinearity. *Optics Letters*. 2010, 35(23): 3952-3954.
 51. Yi Hu, Robert Egger, **Peng Zhang**, Xiaosheng Wang, and Zhigang Chen. Interface solitons excited between a simple lattice and a superlattice. *Optics Express*. 2010, 18(14): 14679-14684.
 52. Yi Hu, Cibo Lou, **Peng Zhang**, Jingjun Xu, and Zhigang Chen. Saddle lattice solitons: a perfect balance between hybrid nonlinearity and anisotropic diffraction. *Laser & Optoelectronics Progress (Chinese Optics 2009)* 2010, 47(3): 03SC06.
 53. Yi Hu, Cibo Lou, **Peng Zhang**, Jingjun Xu, Jianke Yang, and Zhigang Chen. Saddle solitons: A balance between bi-diffraction and hybrid nonlinearity. *Optics Letters*. 2009, 34(21): 3259-3261.
 54. Meirong Wang, Wangmin Zhou, **Peng Zhang**, Hao Zhang, and Jianlin Zhao. Investigations of magneto-optical properties of BGO crystal utilized for optical fiber current sensor. *Acta Photonica Sinica* 2006, 35(1): 100-104.
 55. Jianlin Zhao, Bili Li, **Peng Zhang**, Dexing Yang, and Zhenwei Li. Experimental investigation of the phase conjugation by photorefractive four-wave mixing in SBN:Cr crystals. *Acta Physica Sinica* 2004, 53(8):2583-2588.
 56. Dexing Yang, Jianlin Zhao, **Peng Zhang**, Bili Li, and Xiqi Feng. The index changes of waveguides fabricated by light irradiation in LiNbO₃:Fe crystals. *Acta Physica Sinica* 2003, 52(5):1179-1183.
 57. Eugenia Eugenieva, Daohong Song, Anna Bezryadina, **Peng Zhang**, Zhigang Chen, and Neal B. Abraham. Self-trapping and stabilization of double-charged optical vortices in optically-induced periodic structures. *Journal of Modern Optics* 2010, 57(14-15): 1377-1387.
 58. Zhuoyi Ye, Sheng Liu, Cibo Lou, **Peng Zhang**, Yi Hu, Daohong Song, Jianlin Zhao, and Zhigang Chen. Acceleration control of Airy beams with optically-induced refractive-index gradient. *Optics Letters*. 2011, 36(16): 3230-3232.
 59. Yi Hu, Cibo Lou, Sheng Liu, **Peng Zhang**, Jianlin Zhao, Jingjun Xu, and Zhigang Chen. Orientation-dependent excitations of lattice soliton trains with hybrid nonlinearity. *Optics Letters*. 2009, 34(7): 1114-1116.
 60. Jianglei Di, Jianlin Zhao, Hongzhen Jiang, **Peng Zhang**, Qi Fan, Weiwei Sun. High resolution digital holography microscopy with wide view field based on synthetic aperture technique using linear CCD scanning. *Applied Optics*. 2008, 47(30): 5654-5659.
 61. Dexing Yang, Xiarui Guo, Haibin Wang, **Peng Zhang**, Hongli Xiang, and Jianlin Zhao. Recording method and fabrication of layered multiple volume holographic gratings for WDM. *Acta Photonica Sinica* 2007, 36(11): 1975-1978.
 62. Jun Wang, Jianlin Zhao, Qi Fan, and **Peng Zhang**. A novel synthetical method for phase unwrapping. *Chinese Journal of Lasers* 2006, 33(6):795-799.
 63. Jianlin Zhao, Bili Li, Dexing Yang, **Peng Zhang**, and Zhenwei Li. Light-induced refractive index changes in doped SBN crystals under external electric field. *Acta Photonica Sinica* 2003,

- 32(12):1487-1491.
64. Jianlin Zhao, Bili Li, Dexing Yang, **Peng Zhang**, and Xiqi Feng. Experiment of light writing planar waveguides array in LiNbO₃:Fe crystal. *Acta Photonica Sinica* 2003, 32(4):421-424.
 65. Meirong Wang, Jianlin Zhao, Wangmin Zhou, Peifeng Wei, and **Peng Zhang**. Optical fiber current sensor based on BGO crystal with enhanced Faraday rotation by reflections. *Acta Photonica Sinica* 2008, 37(6): 1186-1190.
 66. Qi Fan, Jianlin Zhao, Jun Wang, Jianglei Di, and **Peng Zhang**. Analysis of numerical reconstruction of lensless Fourier transform holograms. *Acta Photonica Sinica* 2007, 36(10): 1824-1828.
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