

## Yilong Han

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- Education**
- **Ph.D.** in Physics 09, 1998 – 12, 2003  
 University of Chicago, USA
  - **B.S.** in Physics 09, 1994 – 06, 1998  
 Peking University (Beijing University), China
- Employment**
- **Associate Professor** 07, 2013 – present
  - **Assistant Professor** 08, 2007 – 06, 2013  
 Physics Department, Hong Kong University of Science and Technology
  - **Postdoctoral fellow** 01, 2004 – 08, 2007  
 University of Pennsylvania, USA

### Personal Information

Born Nov. 2, 1976, Beijing; Male, Chinese citizen

### Research

Experimental Soft Condensed Matter Physics and Statistical Physics

### Journal Publications (\* denotes corresponding author)

- [33] Two-step nucleation processes in solid-solid phase transitions, Y. Peng, F. Wang, Z. Wang, A. Alsayed, Z. Zhang, A. G. Yodh and Y. Han\*, *Nature Materials*, in press
- [32] Z. Zheng\*, R. Ni, F. Wang, M. Dijkstra, Y. Wang and Y. Han\*, Structural signatures of dynamic heterogeneities in monolayers of colloidal ellipsoids, *Nature Communications*, 5, 3829 (2014)
- [31] Y. Shokef\*, Y. Han, A. Souslov, A. G. Yodh and T. C. Lubensky, Buckled colloidal monolayers connect geometric frustration in soft and hard matter, *Soft Matter*, 9, 6565 (2013)
- [30] Y. Han\*, Using colloids to understand the dynamics of melting and crystallization, invited review in *物理 (Physics)* 42, 160-169, (2013)
- [29] Glass transitions in monolayers of colloidal ellipsoids, Z. Zheng\* and Y. Han\*, *AIP Conf. Proc.* 1518, 153 (2013)
- [28] Homogeneous melting of 3D superheated colloidal crystals, Z. Wang, F. Wang, Y. Peng, Z. Zheng, and Y. Han\*, *AIP Conf. Proc.* 1518, 432, (2013)
- [27] X. Ma, W. Chen, Z. Wang, Y. Peng, Y. Han, and P. Tong\*, Test of the universal scaling law of diffusion in colloidal monolayers, *Phys. Rev. Lett.* 110, 078302 (2013)
- [26] Z. Wang, F. Wang, Y. Peng, Z. Zheng, and Y. Han\*, Imaging the homogenous nucleation during the melting of superheated colloidal crystals, *Science* 338, 87 (2012)
- [25] Y. Han\* and D. Grier\*, Colloidal electroconvection in a thin horizontal cell. III. Interfacial and transient patterns on electrodes, *J. Chem. Phys.* 137, 014504 (2012)
- [24] Y. Peng, F. Wang, M. Wong, and Y. Han\*, Self-similarity of phase-space networks of frustrated spin models and lattice gas models, *Phys. Rev. E* 84, 051105 (2011)
- [23] Y. Peng, Z.-R. Wang and Y. Han\*, Melting of microgel colloidal crystals, *J. Phys.: Conf. Ser.* 319, 012010 (2011)
- [22] Z. Zheng, F. Wang and Y. Han\*, Glass transitions in quasi-two-dimensional suspensions of colloidal ellipsoids, *Phys. Rev. Lett.* 107, 065702 (2011) (highlighted by *Editor's Suggestion* and *Physics Viewpoint*)
- [21] Y. Peng, Z.-R. Wang, A. M. Alsayed, A. G. Yodh, and Y. Han\*, Melting of multilayer colloidal crystals confined between two walls, *Phys. Rev. E* 83, 011404 (2011)

- [20] Z.-R. Wang, W. Qi, Y. Peng, A. M. Alsayed, Y. Chen, P. Tong, and Y. Han\*, Two Features at the Two-Dimensional Freezing Transitions, *J. Chem. Phys.* 134, 034506 (2011)
- [19] W. Qi, Z.-R. Wang, Y. Han\*, and Y. Chen\*, Melting in two-dimensional Yukawa systems: A Brownian dynamics simulation, *J. Chem. Phys.* 133, 234508 (2010)
- [18] Z. Zheng and Y. Han\*, Self-diffusion in two-dimensional hard ellipsoid suspensions, *J. Chem. Phys.* 133, 124509 (2010)
- [17] Y. Peng, Z.-R. Wang, A. Alsayed, A. G. Yodh, and Y. Han\*, Melting of colloidal crystal films, *Phys. Rev. Lett.* 104, 205703 (2010) (featured by *Phys. Rev. Focus*)
- [16] Z.-R. Wang, A. Alsayed, A. G. Yodh, and Y. Han\*, Two-dimensional freezing criteria for crystallizing colloidal monolayers, *J. Chem. Phys.* 132, 154501 (2010) (selected by *Virtual Journal of Biological Physics Research*)
- [15] Y. Han\*, Phase-space networks of the six-vertex model under different boundary conditions, *Phys. Rev. E* 81, 041118 (2010).
- [14] Y. Han\*, Phase-space networks of geometrically frustrated systems, *Phys. Rev. E* 80, 051102 (2009).
- [13] Y. Han\*, A. M. Alsayed, M. Nobili and A. G. Yodh, Quasi-two-dimensional diffusion of single ellipsoids: aspect ratio and confinement effects, *Phys. Rev. E* 80, 011403 (2009)
- [12] A. Latka, Y. Han, A. M. Alsayed, A. B. Schofield, A. G. Yodh and P. Habdas\*, Particle dynamics in colloidal suspensions above and below the glass-liquid re-entrance transition, *Europhys. Lett.* 86, 58001 (2009)
- [11] Y. Han\*, Y. Shokef\*, A. M. Alsayed, P. Yunker, T. C. Lubensky and A. G. Yodh, Geometric frustration in buckled colloidal monolayers, *Nature* 456, 898-903 (2008)
- [10] Y. Han\*, N. Y. Ha, A. M. Alsayed, and A. G. Yodh, Melting of two-dimensional diameter tunable colloidal crystals, *Phys. Rev. E* 77, 041406 (2008)
- [9] M. Polin, D. G. Grier\*, and Y. Han, Colloidal electrostatic interactions near a conducting surface, *Phys. Rev. E* 76, 041406 (2007)
- [8] Y. Han, A. M. Alsayed, M. Nobili, J. Zhang, T. C. Lubensky\*, and A. G. Yodh, Brownian motion of an ellipsoid, *Science* 314, 626-630 (2006)
- [7] Y. Han and D. G. Grier\*, Colloidal electroconvection in a thin horizontal cell II: bulk electroconvection of water during parallel-plate electrolysis, *J. Chem. Phys.* 125, 144707 1-7, (2006)
- [6] Y. Han and D. G. Grier\*, Colloidal patterns in a thin electrolysis cell I: microscopic cooperative structures, *J. Chem. Phys.* 122, 164701, 1-11 (2005)
- [5] Y. Han and D. G. Grier\*, Configurational temperatures and interactions in charge-stabilized colloid, *J. Chem. Phys.* 122, 064907, 1-14 (2005)
- [4] D. G. Grier\* and Y. Han, Anomalous attractions in confined charge-stabilized colloid, *J. Phys.- Condens. Matt.* 16, S4145-S4157 (2004)
- [3] Y. Han and D. G. Grier\*, Configurational temperature of charge-stabilized colloidal monolayer, *Phys. Rev. Lett.* 92, 148301 (2004)
- [2] Y. Han and D. G. Grier\*, Confinement-induced colloidal attractions in equilibrium, *Phys. Rev. Lett.* 91, 038302 (2003)
- [1] Y. Han and D. G. Grier\*, Vortex rings in a constant electric field, *Nature* 424, 267-268 (2003); *erratum Nature* 424, 510 (2003)

### Invited Book Chapter

A. M. Alsayed, Y. Han and A. G. Yodh “Melting and Geometric Frustration in Temperature-Sensitive Colloids” p229-281 in "Microgel Suspensions, Fundamentals and Applications" WILEY-VCH, (2011)

### Invited Talks at Conferences

- 13<sup>th</sup> Continuum Models and Discrete Systems (CMDS) International Conference, Salt Lake City, USA (plenary talk) 07, 2014
- IAS Frontiers of Soft Matter Physics Conference, Hong Kong 01, 2014

- 2<sup>nd</sup> Soft Matter Workshop, Hefei, China 08, 2013
- KITPC: Complex Dynamics in Granular Systems, Beijing, China 06, 2013
- The Physics Society of Hong Kong Annual Conference, Hong Kong 06, 2013
- International Conference for Leading and Young Materials Scientists, Zhuhai, China 12, 2012
- 4<sup>th</sup> International Symposium on Slow Dynamics in Complex Systems, Sendai, Japan 12, 2012
- Chinese Physics Society Fall Meeting, Guangzhou, China 09, 2012
- 8<sup>th</sup> Conference of Soft Matter and Biophysics (plenary talk), Guiyang, China 08, 2012
- East Asia Joint Seminars on Statistical Physics, Suzhou, China 03, 2012
- APS March Meeting, Boston, USA 03, 2012
- 8<sup>th</sup> Mid-Atlantic Soft Matter Workshop, NIST, Maryland, USA 12, 2011
- 7<sup>th</sup> Chinese Complex Network Conference (plenary talk), Chengdu, China 10, 2011
- CSRC Statistical and Computational Physics Workshop, Beijing, China 06, 2011
- 12<sup>th</sup> Continuum Models and Discrete Systems (CMDS) International Conference, Kolkata, India 02, 2011
- 11<sup>th</sup> Asia Pacific Physics Conference, Shanghai, China 11, 2010
- Shanghai Jiaotong University—Biannual Workshop on the Frontiers of Interdisciplinary Sciences, Shanghai, China 05, 2010
- 6<sup>th</sup> Conference of Liquid and Soft Matter, Hefei, China 11, 2008
- Chinese Physics Society Fall Meeting, Nanjing, China 09, 2007
- 81<sup>st</sup> ACS Colloid and Surface Science Symposium, Delaware, USA 06, 2007
- Gordon Research Conference—Polymer Colloids, Tilton, CT, USA 06, 2005

### **Invited Talks at Universities or Institutes**

- Beihang University, Beijing, China 06, 2014
- Xi'an Jiaotong University, Xi'an, China 12, 2013
- Shanghai Jiaotong University (10 lectures), Shanghai, China 07, 2013
- École Normale Supérieure, Paris, France 07, 2013
- Chinese University of Hong Kong, Hong Kong 08, 2012
- New York University, New York, USA 12, 2011
- University of Pennsylvania, Philadelphia, USA 12, 2011
- Lanzhou University, Lanzhou, China (Cui-Ying Lecture, 2 talks) 08, 2011
- Université Montpellier 2, Montpellier, France 06, 2011
- Institute of Mechanics, Chinese Academy of Sciences, Beijing, China 06, 2011
- Institute of Theoretical Physics, Chinese Academy of Sciences, Beijing, China 06, 2011
- The University of Hong Kong, Hong Kong 03, 2011
- Zhejiang University, Hangzhou, China 06, 2010
- Fudan University, Shanghai, China 05, 2010
- Lehigh University, Pennsylvania, USA 08, 2009
- The Chinese University of Hong Kong, Hong Kong 11, 2008
- Beijing Normal University, Beijing, China 02, 2007
- Soft Matter Lab, Institute of Physics, Chinese Academy of Sciences, Beijing, China 02, 2007

<b>Award</b>	HKUST School of Science Research Award	2012
	Achievement in Asia Award (Robert T. Poe Prize)	2014
<b>Affiliation</b>	Member of Hong Kong Physical Society	2007 – present
	Member of American Physical Society	2001 – present