

Curriculum Vitae — Xiang Cheng — Cornell University

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Employment:

2009-present Postdoctoral Associate, Cornell Center for Materials Research, Cornell University. (Supervisor: Itai Cohen)

Education:

1998-2002 Peking University, China. Undergraduate study in physics.
2002-2009 The University of Chicago, Ph.D. in Physics. (Thesis advisors: Sidney Nagel & Heinrich Jaeger)

Honors and Awards:

2011 Winner of poster competition in 2011 Gordon Research Conference on Soft Condensed Matter Physics.
2006-2007 The Grainger Graduate Fellowship (Full scholarship for best experimental graduate student in the Physics Department, the University of Chicago.)
2006 Invited talk in 2006 Gordon Research Conference on Granular & Granular-fluid Flow. (Four young scholars in the field were selected for this honor.)
2006 The Gaurang and Kanwal Yodh Prize in recognition of outstanding experimental work by a graduate student in physics (The University of Chicago).
2006 Finalists of the APS GSNP student award.
2001 First Place, China Undergraduate Mathematical Contest in Modeling (CUMCM).
2001 Taizhao Scholarship, awarded by Taizhao foundation to undergraduate student who independently completes an interdisciplinary research.
1999-2002 Outstanding Student Fellowship, Peking University.

Publications:

- **X. Cheng**, Y. C. N. Lin, and I. Cohen, “Nonlinear structural response of colloidal suspensions under large amplitude oscillatory shear”, (in preparation).
- **X. Cheng**, X.-L. Xu, A. R. Dinner S. A. Rice, and I. Cohen, “Assembly of vorticity-aligned hard-sphere colloidal strings in a simple shear flow”, *Proc. Natl. Acad. Sci. USA* **109**, 63 (2012).
- **X. Cheng**, J. H. McCoy, J. N. Israelachvili, and I. Cohen, “Imaging the Microscopic Structure of Shear Thinning and Thickening Colloidal Suspensions”, *Science* **333**, 1276 (2011).

- **X. Cheng**, “Packing structure of a two-dimensional granular system through the jamming transition”, *Soft Matter* **6**, 2931 (2010).
- **X. Cheng**, “Experimental study of the jamming transition at zero temperature”, *Phys. Rev. E* **81**, 031301 (2010).
- L.-N. Zou, **X. Cheng**, M. L. Rivers, H. M. Jaeger, and S. R. Nagel, “The Packing of Granular Polymer Chains”, *Science* **326**, 408 (2009).
- **X. Cheng**, R. Smith, H. M. Jaeger, and S. R. Nagel, “Formation of air bubbles during compaction of a granular pack”, *Phys. Fluids* **20**, 123305 (2008).
- **X. Cheng**, L. Xu, A. Patterson, H. M. Jaeger, and S. R. Nagel, “Towards the zero-surface- tension limit in granular fingering instability”, *Nature Phys.* **4**, 234 (2008).
- **X. Cheng**, H. M. Jaeger, and S. R. Nagel, “Granular Jets as a Classical Analog of RHIC Collisions”, *RHIC news*, January 15 (2008).
- **X. Cheng**, G. Varas, D. Citron, H. M. Jaeger, and S. R. Nagel, “Collective Behavior in a Granular Jet: Emergence of a Liquid with Zero Surface Tension”, *Phys. Rev. Lett.* **99**, 188001 (2007).
- **X. Cheng**, J. B. Lechman, A. F. Barbero et al., “Three-Dimensional Shear in Granular Flow”, *Phys. Rev. Lett.* **96**, 038001 (2006).
- M. E. Möbius, **X. Cheng**, P. Eshuis, G. S. Karczmar, S. R. Nagel, and H. M. Jaeger, “The effect of air on granular size Separation in a vibrated granular bed”, *Phys. Rev. E* **72**, 011304 (2005).
- M. E. Möbius, **X. Cheng**, G. S. Karczmar, S. R. Nagel, and H. M. Jaeger, “Intruders in the Dust: Air-Driven Granular Size Separation”, *Phys. Rev. Lett.* **93**, 198001 (2004).
- G.-J. Lin, **X. Cheng**, and Q. Ouyang, “Breakdown of an Inhomogeneous Scale-Free Network Under Intentional Attack”, *Chin. Phys. Lett.* **20**, 22 (2003).
- **X. Cheng**, H.-L. Wang, and Q. Ouyang, “Scale-free network model of node and connection diversity”, *Phys. Rev. E* **65**, 066115 (2002).
- **X. Cheng** and Q. Ouyang, “Numerical and analytical study of evolution of indirect reciprocity”, *Physica A* **313**, 683 (2002).
- Y.-B. Hu, J. Xiang, and **X. Cheng**, “Three-dimensional reconstruction of blood vessels from a 2D correlation analysis of vessel slices”, *Chinese Journal of Engineering Mathematics* **19**, 29 (2002).

Presentations:

- Invited talk, Cornell Fluid Dynamics Seminar, Cornell University, Ithaca, NY, November 2011
- Contributed talk, Annual meeting of the Society of Rheology, Cleveland, OH, October 2011.
- Invited talk, Courant Institute, New York University, New York, NY, September 2011.
- Invited short talk (as winner of poster competition), Gordon Research Conference on Soft Condensed Matter Physics, Colby-Sawyer College, NH, August 2011.
- Invited seminar, Shanghai Jiao Tong University, Shanghai, China, July 2011.
- Invited talk, Workshop on Computational Statistical Mechanics of Complex Systems, University of Science and Technology of China, Hefei, China, July 2011.
- Invited talk, Workshop on Granular Matter, Tsinghua University, Beijing, China, July 2011.

- Invited seminar, Institute of Physics, Chinese Academy of Sciences, Beijing, China, July 2011.
- Invited talk, the 11th New York Complex Matter Workshop, Syracuse University, Syracuse, NY, June 2011.
- Contributed talk, APS March Meeting, Dallas, TX, March 2011.
- Contributed talk, APS DFD Meeting, Long Beach, CA, November 2010.
- Invited talk, Chinese University of Hong Kong, Physics Colloquium, Hong Kong, China, December 2009.
- Contributed talk, APS March Meeting, Pittsburgh, PA, March 2009.
- Invited talk, Cornell University, Physics Seminar, Ithaca, NY, November 2008.
- Invited talk, Courant Institute, New York University, Applied Math Lab Seminar, New York, NY, October 2008.
- Invited talk, The University of Chicago, Computations in Science Seminars, Chicago, IL, September 2007.
- Contributed talk, APS March Meeting, Denver, CO, March 2007.
- Invited talk & poster, Gordon Research Conference on Granular & Granular-fluid Flow, Oxford, UK, July 2006.
- Invited talk, APS March Meeting, Baltimore, MD, March 2006 (One of five finalists in GSNP student award session).
- Contributed talk, APS DFD Meeting, Chicago, IL, November 2005.
- Contributed talk & poster, APS March Meeting, Los Angeles, CA, March 2005.

Teaching Experience:

Teaching Assistant:

2002-2004 General Physics, Department of Physics, The University of Chicago.

Manuscript Referee:

Physical Review Letters (2010 - present)

Physical Review E (2010 - present)

Europhysics Letters (EPL)

Granular Matter

Industrial & Engineering Chemistry Research

References:

Sidney Nagel, The University of Chicago, srnagel@uchicago.edu, 773-702-7190

Heinrich Jaeger, The University of Chicago, h-jaeger@uchicago.edu, 773-702-6074

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