

Qi Wen

Contact Information	1080 Vagelos Research Labs Institute for Medicine and Engineering University of Pennsylvania Philadelphia, PA 19104 USA	<i>Voice:</i> (215) 573-9787 <i>Fax:</i> (215) 573- 6815 <i>E-mail:</i> wenqi@mail.med.upenn.edu
Research Interests	Experimental Biological Physics on rheology of biological material, cell motility and polyelectrolyte properties of biopolymers Computer Simulations on Biological systems;	
Education	Brown University, Providence, RI, USA Ph.D. in Biological Physics, (June, 2006) Advisor: Jay X. Tang Thesis Topic: "Exploring the electrostatics in polyelectrolyte solution" M.Sc. , Physics, May 2005	2003 - 2006
	Indiana University, Bloomington, IN, USA Ph.D. student, Department of Physics	2001 - 2002
	Lanzhou University, Lanzhou, Gansu Province, China M.Eng. , Microelectronics, July 2001 Advisor: Siyuan Li Thesis title: "Preparation of thin Silicon Carbide film using RF sputtering" B.Sc. , Semiconductor Devices and Microelectronics, July 1998	1994 - 2001
Experience	POSTDOCTORAL RESEARCHER Working with Professor Paul Janmey at Institute for Medicine & Engineering, University of Pennsylvania. – Rheology of biological gels. – Applying microfluidic channels to study mechanosensing of cells. – Polyelectrolyte properties of intermediate filaments. – Measured electrophoretic mobility of fd virus on a single molecule level using a PDMS microfluidic channel. – Study on swimming pattern of magneto-tactic bacterium under rotating magnetic field.	Jul. 2006 - present
	RESEARCH ASSISTANT Working under Professor Jay X. Tang at Department of Physics, Brown University. – Explored the mechanism of multivalent induced like-charge attraction, with results reported in <i>Physical Review Letters</i> . – Cystic Fibrosis Research, with results reported in <i>American Journal of Physiology</i> . – Imaged single molecules and aggregates of DNA, F-actin and bacteriophages using fluorescence and atomic force microscopy. – Measured the size of biopolymer aggregates by image analysis using MATLAB.	Jan.2003 - Jun.2006

- Measured electrophoretic mobility of fd virus on a single molecule level using a PDMS microfluidic channel.
- Simulated the counterion distribution around bacteriophage fd and M13 using Monte Carlo method.
- Simulated the switching events of bacterial flagella motor. Results are submitted to *Journal of Statistical Physics*
- Culture E-coli cells. Clone fd and M13 viruses and purify them using ultra centrifugation and dialysis.
- Wrote Visual Basic programs to collect data from instruments to PC. Developed LabView programs to collect data from HPLC and spectrometer in the lab.

RESEARCH ASSISTANT Sept. 1998 - July 2001

Lanzhou University, Department of Physics, Microelectronics Lab

- Set up radio frequency sputtering system to deposit SiC film on silicon substrates.
- Joined the research and fabrication of high voltage, high current static induction thyristor, which is a key project of power transportation in China.
- X-ray diffraction and Scan electron Microscope to evaluate quality of SiC film.

TEACHING ASSISTANT Jan. 2003 - Jun.2006

Brown University, Department of Physics

Grade and prepare homework solutions for the Biophysics class. Designed the lab for students to measure viscosity of liquids using thin capillary and small steel balls.

Awards	Galkin Fellowship/Galkin Physics Scholar of the Year (Brown University)	2005
	Champion of Brown Intramural Basketball	2003
	Baogang Scholarship for Outstanding Student of the Year (Lanzhou Univ.)	1996
	First Prize Fellowship of Lanzhou University	1995, 1997

Publications	[1] Q.Wen, G.Li, J.X.Tang and G.Huber. "Switching statistics of a flagella motor: first-passage time and dynamic binding", <i>J. Stat. Phys.</i> (in press)
	[2] Q.Wen and J.X.Tang. "Temperature effects on the onset of aggregation of fd virus induced by divalent counterions", <i>Phys. Rev. Lett.</i> 2006, 97, 048101
	[3] J.X.Tang, Q.Wen, <i>et al.</i> "Anionic poly(amino acid)s dissolve actin and DNA bundles, enhance DNase activity, and reduce the viscosity of cystic fibrosis sputum" <i>Am. J. Physiol. Lung Cell Mol Physiol.</i> 2005, 289, L599-605
	[4] G.Li, Q.Wen and J.X.Tang. "Single filament electrophoresis of F-actin and filamentous virus fd" <i>J. Chem. Phys.</i> , 2005, 122: 104708.
	[5] Q.Wen and J.X.Tang. "Absence of charge inversion on rodlike polyelectrolytes with excess divalent counterions" <i>J. Chem. Phys.</i> , 2004,121: 12666.

Meeting Presentations	GORDON RESEARCH CONFERENCE June 2005
	University of Connecticut, Newlondon, CT Qi Wen and Jay X. Tang Temperature effects on threshold divalent counterion concentration to induce aggregations of fd virus

AMERICAN PHYSICAL SOCIETY MARCH MEETING March 2005
 Los Angelous, CA, USA
 Qi Wen and Jay X. Tang
 Effect of temperature on fd and M13 aggregation

AMERICAN PHYSICAL SOCIETY MARCH MEETING March 2004
 Montreal, Canada
 Qi Wen and Jay X. Tang
 Electrophoretic mobility measurements suggest no charge inversion for a system of charged rods and their divalent counterions

POLYELECTROLYTE MEETING June 2004
 University of Massachusetts, Amherst, MA, USA
 Qi Wen and Jay X. Tang
 Could charge inversion occur to rodlike polyelectrolytes with divalent counterions?

NEW ENGLAND COMPLEX FLUIDS WORKSHOP
 March 2003, June 2003, September 2003, March 2004, December 2004

Professional Skills

CELL CULTURE AND MOLECULAR CLONING:
 E-coli cell culture and large scale preparation of bacteriophages fd and M13.

MICROSCOPY:
 – Bright field, phase contrast, fluorescence, and birefringence imaging.
 – MetaMorph imaging software, Matlab Image analysis.
 – Atomic Force Microscopy

PROTEIN PURIFICATION:
 Ultra centrifugation, HPLC.

MICROFLUIDICS:
 Photolithography and mask designing to build PDMS microfluid channels.

Computer Skills

- Languages: C, C++, Fortran, Linux shell scripts, MPI parallel processing library.
- Software: Matlab, Microsoft Office, Labview, Dreamweaver, L^AT_EX
- Operating Systems: Unix/Linux, Windows.