USF
UNIVERSITY OF SOUTH FLORIDA

Jianjun Pan, Ph.D.

Phone: (813) 974-2943
E-mail: panj@usf.edu
http://faculty.cas.usf.edu/pan

University of South Florida
Department of Physics
4202 E. Fowler Ave, Tampa, FL 33620

Education

Carnegie Mellon University, Pittsburgh, PA

Ph.D. in Physics — Aug. 2009
M.S. in Physics — May 2006

University of Science and Technology of China, Hefei, China

B.S. in Applied Physics — Jun. 2004

Research Experiences

University of South Florida, Tampa, FL — Aug. 2013 – Present
Assistant Professor at Department of Physics

Oak Ridge National Laboratory, Oak Ridge, TN — May 2011 – Jul. 2013
Postdoctoral Research Associate in laboratory of Dr. John Katsaras (Neutron Sciences Directorate)

University of Pittsburgh School of Medicine, Pittsburgh, PA — Sep. 2009 – Apr. 2011
Postdoctoral Research Associate in laboratory of Prof. Pei Tang (Department of Anesthesiology)

Carnegie Mellon University, Pittsburgh, PA — Aug. 2006 – Aug. 2009
Ph.D. candidate mentored by Prof. John F. Nagle (Department of Physics)

Publications

Journal Articles **(*corresponding author)**

1. Nawal K. Khadka, Chinta M. Aryal, **Jianjun Pan***. Lipopolysaccharide-Dependent Membrane Permeation and Lipid Clustering Caused by the Cyclic Lipopeptide Colistin. *ACS Omega*, submitted
2. **Jianjun Pan***, Annalisa Dalzini, Likai Song*. Cholesterol and Phosphatidylethanolamine Lipids Exert Opposite Effects on Membrane Modulations Caused by the M2 Amphipathic Helix. *Biochimica et Biophysica Acta-Biomembranes*, DOI:10.1016/j.bbamem.2018.07.013 (2018)
3. **Jianjun Pan***, Annalisa Dalzini, Nawal K. Khadka, Chinta M. Aryal, Likai Song*. Lipid Extraction by α-Synuclein Generates Semi-transmembrane Defects and Lipoprotein Nanoparticles. *ACS Omega*, **2018**, 3: 9586-9597

4. **Jianjun Pan***, Prasana K. Sahoo, Annalisa Dalzini, Zahra Hayati, Chinta M. Aryal, Peng Teng, Jianfeng Cai, Humberto Rodriguez Gutierrez, Likai Song*. Membrane Disruption Mechanism of a Prion Peptide (106-126) Investigated by Atomic Force Microscopy, Raman and Electron Paramagnetic Resonance Spectroscopy. *The Journal of Physical Chemistry B*, **2017**, 121: 5058-5071.
5. Nawal K. Khadka, Peng Teng, Jianfeng Cai, **Jianjun Pan***. Modulation of Lipid Membrane Structural and Mechanical Properties by a Peptidomimetic Derived from Reduced Amide Scaffold. *Biochimica et Biophysica Acta-Biomembranes*, **2017**, 1859: 734-744.
6. Alekhya Nimmagadda, Xuan Liu, Peng Teng, Ma Su, Yaqiong Li, Qiao Qiao, Nawal K Khadka, Xiaoting Sun, **Jianjun Pan**, Hai Xu*, Qi Li*, Jianfeng Cai*. Polycarbonates with Potent and Selective Antimicrobial Activity toward Gram-Positive Bacteria. *Biomacromolecules*, **2017**, 18: 87-95.
7. Chian Sing Ho, Nawal K. Khadka, Fengyu She, Jianfeng Cai, **Jianjun Pan***. Influenza M2 Transmembrane Domain Senses Membrane Heterogeneity and Enhances Membrane Curvature. *Langmuir*, **2016**, 32: 6730-6738.
8. **Jianjun Pan***, Nawal K. Khadka. Kinetic Defects Induced by Melittin in Model Lipid Membranes: A Solution Atomic Force Microscopy Study. *The Journal of Physical Chemistry B*, **2016**, 120: 4625-4634.
9. Javier Alonso, Hafsa Khurshid, Jagannath Devkota, Zohreh Nemati, Nawal K. Khadka, Hariharan Srikanth, **Jianjun Pan***, Manh-Huong Phan*. Superparamagnetic Nanoparticles Encapsulated in Lipid Vesicles for Advanced Magnetic Hyperthermia and Biodetection. *Journal of Applied Physics*, **2016**, 119: 083904.
10. Chian Sing Ho, Nawal K. Khadka, Fengyu She, Jianfeng Cai, **Jianjun Pan***. Polyglutamine Aggregates Impair Lipid Membrane Integrity and Enhance Lipid Membrane Rigidity. *Biochimica et Biophysica Acta-Biomembranes*, **2016**, 1858: 661-670.
11. Chian Sing Ho, Nawal K. Khadka, **Jianjun Pan***. Sub-Ten-Nanometer Heterogeneity of Solid Supported Lipid Membranes Determined by Solution Atomic Force Microscopy. *Biochimica et Biophysica Acta-Biomembranes*, **2016**, 1858: 181-188.
12. Nawal K. Khadka, Chian Sing Ho, **Jianjun Pan***. Macroscopic and Nanoscopic Heterogeneous Structures in a Three-Component Lipid Bilayer Mixtures Determined by Atomic Force Microscopy. *Langmuir*, **2015**, 31: 12417-12425.
13. Nawal K. Khadka, Xiaolin Cheng, Chian Sing Ho, John Katsaras, **Jianjun Pan***. Interactions of the Anticancer Drug Tamoxifen with Lipid Membranes. *Biophysical Journal*, **2015**, 108: 2492-2501.
14. Norbert Kučerka*, Frederick A. Heberle, **Jianjun Pan,** John Katsaras*. Structural Significance of Lipid Diversity as Studied by Small Angle Neutron and X-ray Scattering. *Membranes*, **2015**, 5: 454-472.
15. Evan Lafalce*, Xiaomei Jiang, **Jianjun Pan**, Christi Whittington, Randy Larsen, Logan Sanow, Cheng Zhang. Hybrid-State Emission in a Polythienylenevinylene Derivative with an

Electron Deficient Moiety. *The Journal of Chemical Physics*, **2015**, 142: 164702.

16. Norbert Kučerka*, Brad van Oosten, **Jianjun Pan**, Frederick A. Heberle, Thad A. Harroun, John Katsaras*. Molecular Structures of Fluid Phosphatidylethanolamine Bilayers Obtained from Simulation-to-Experiment Comparisons and Experimental Scattering Density Profiles. *The Journal of Physical Chemistry B*, **2015**, 119: 1947-1956.
17. Joseph C. Fogarty, Mihir Arjunwadkar, Sagar A. Pandit*, **Jianjun Pan**. Atomically Detailed Lipid Bilayer Models for Interpretation of Scattering Data. *Biochimica et Biophysica Acta-Biomembranes,* **2015**, 1848: 662-672.
18. **Jianjun Pan***, Xiaolin Cheng, Melissa Sharp, Chian-Sing Ho, Nawal Khadka, John Katsaras*. Structural and Mechanical Properties of Cardiolipin Lipid Bilayers Determined Using Neutron Spin Echo, Small Angle Neutron and X-ray Scattering, and Molecular Dynamics Simulations. *Soft Matter*, **2015**, 11:130-138
19. **Jianjun Pan***, Drew Marquardt, Frederick Heberle, Norbert Kučerka, John Katsaras*. Revisiting the Bilayer Structures of Fluid Phase Phosphatidylglycerol Lipids: Accounting for Exchangeable Hydrogens. *Biochimica et Biophysica Acta-Biomembranes*, **2014**, 1838: 2966-2969
20. **Jianjun Pan***, Xiaolin Cheng, Luca Monticelli, Frederick Heberle, Norbert Kučerka, D. Peter Tieleman, John Katsaras*. The Molecular Structure of a Phosphatidylserine Bilayer Determined by Scattering and Molecular Dynamics Simulations. *Soft Matter,* **2014**, 10: 3716-3725
21. Peter Heftberger, Benjamin Kollmitzer, Frederick Heberle, **Jianjun Pan**, Michael Rappolt, Heinz Amenitsch, Norbert Kučerka, John Katsaras, Georg Pabst*. Global Small-angle X-ray Scattering Data Analysis for Multilamellar Vesicles: The Evolution of the Scattering Density Profile Model. *Journal of Applied Crystallography*, **2014**, 47: 173-180
22. **Jianjun Pan***, Frederick Heberle, Robin Petruzielo, John Katsaras*. Using Small-angle Neutron Scattering to Detect Nanoscopic Lipid Domains. *Chemistry and Physics of Lipids*, **2013**, 170: 19-32
23. Frederick Heberle*, Robin Petruzielo, **Jianjun Pan**, Paul Drazba, Norbert Kučerka, Robert Standaert, Gerald Feigenson, John Katsaras*. Bilayer Thickness Mismatch Controls Domain Size in Model Membranes. *Journal of the American Chemical Society*, **2013**, 135: 6853-6859
24. **Jianjun Pan***, Frederick Heberle, Stephanie Tristram-Nagle, Michelle Szymanski, Mary Koepfinger, John Katsaras, Norbert Kučerka. Molecular Structures of Fluid Phase Phosphatidylglycerol Bilayers as Determined by Small Angle Neutron and X-ray Scattering. *Biochimica et Biophysica Acta-Biomembranes*, **2012**, 1818: 2135-2148
25. **Jianjun Pan***, Xiaolin Cheng, Frederick Heberle, Barmak Mostofian, Norbert Kučerka, Paul Drazba, John Katsaras*. Interactions between Ether Phospholipids and Cholesterol as Determined by Scattering and Molecular Dynamics Simulations. *Journal of Physical Chemistry B*, **2012**, 116: 14829-14838

26. **Jianjun Pan***, Frederick Heberle, Justin Carmichael, John Ankner, John Katsaras*. Time-of-flight Bragg Scattering from Aligned Stacks of Lipid Bilayers at the SNS' Liquids Reflectometer. *Journal of Applied Crystallography*, **2012**, 45: 1219-1227

27. Frederick Heberle*, **Jianjun Pan**, Robert Standaert, Paul Drazba, Norbert Kučerka, John Katsaras*. Model-based Approaches for the Determination of Lipid Bilayer Structure from Small-angle Neutron and X-ray Scattering Data. *European Biophysics Journal*, **2012**, 41: 875-890

28. **Jianjun Pan**, Qiang Chen, Dan Willenbring, Ken Yoshida, Tommy Tillman, Ossama B Kashlan, Aina Choen, Xiang-Peng Kong, Yan Xu, Pei Tang*. Structure of the Pentameric Ligand-gated Ion Channel ELIC Cocrystallized with Its Competitive Antagonist Acetylcholine. *Nature Communications*, **2012**, 3: 714-721

29. **Jianjun Pan**, Qiang Chen, Dan Willenbring, David Mowrey, Xiang-Peng Kong, Aina Cohen, Christopher Divito, Yan Xu, Pei Tang*. Structure of the Pentameric Ligand-gated Ion Channel GLIC Bound with Anesthetic Ketamine. *Structure*, **2012**, 20: 1463-1469

30. **Jianjun Pan**, Stephanie Tristram-Nagle, John F. Nagle*. Effect of Cholesterol on Structural and Mechanical Properties of Membranes Depends on Lipid Chain Saturation. *Physical Review E*, **2009**, 80: 021931

31. **Jianjun Pan**, Peter D. Tieleman, John F. Nagle, Norbert Kučerka, Stephanie Tristram-Nagle*. Alamethicin in Lipid Bilayers: Combined Use of X-ray Scattering and MD Simulations. *Biochimica et Biophysica Acta-Biomembranes*, **2009**, 1788: 1387-1397

32. **Jianjun Pan**, Stephanie Tristram-Nagle, John Nagle*. Alamethicin Aggregation in Lipid Membranes. *Journal of Membrane Biology*, **2009**, 231: 11-27

33. Deren Guler, Dipon Golsh, **Jianjun Pan**, John Mathai, Mark Zeidel, John F. Nagle, Stephanie Tristram-Nagle*. Effects of Ether Vs. Ether Linkage on Lipid Bilayer Structure and Water Permeability. *Chemistry and Physics of Lipids*, **2009**, 160: 33-44

34. **Jianjun Pan**, Thalia Mills, Stephanie Tristram-Nagle, John F. Nagle*. Cholesterol Perturbs Lipid Bilayers Nonuniversally. *Physical Review Letters*, **2008**, 100: 198103

35. **Jianjun Pan**, Stephanie Tristram-Nagle, Norbert Kučerka, John F. Nagle*. Temperature Dependence of Structure, Bending Rigidity and Bilayer Interactions of Dioleoylphosphatidylcholine Bilayers. *Biophysical Journal*, **2008**, 94: 117-124

36. Alexander Greenwood, **Jianjun Pan**, Thalia Mills, John F. Nagle, Richard Epand, Stephanie Tristram-Nagle*. CRAC Motif Peptide of the HIV-1 gp41 Protein Thins SOPC Membranes and Interacts with Cholesterol. *Biochimica et Biophysica Acta-Biomembranes*, **2008**, 1778: 1120-1130

37. Norbert Kučerka*, Jason Perlmutter, **Jianjun Pan**, Stephanie Tristram-Nagle, John Katsaras, Jonathan Sachs. The Effect of Cholesterol on Short- and Long-chain Monounsaturated Lipid Bilayers as Determined by Molecular Dynamics Simulations and X-ray Scattering. *Biophysical Journal*, **2008**, 95: 2792-2805

Book Chapters

1. **Jianjun Pan***, Frederick Heberle, John Katsaras*. Small-angle Neutron Scattering and the Study of Nanoscopic Lipid Membranes. Chapter 3 in Recent Progress in Neutron Scattering Research. ISBN: 978-1-62948-099-2, Nova Science Publishers, Inc. New York, p.77-103 (2013)
2. **Jianjun Pan***, Norbert Kučerka, Mu-Ping Nieh, Frederick Heberle, Paul Drazba, John Katsaras*. Lipid Diversity and Its Implication on Membrane Organization. Chapter 7 in Liposomes, Lipid Bilayers and Model Membranes from Basic Research to Application. ISBN: 978-1-4665-0709-8 Taylor & Francies Group, LLC. p.125-142 (2014)

Research Grants

1. Title: Characterizing Interactions between Bacterial Membranes and Peptidomimetics for the Development of Antibiotics Targeting Multidrug Resistant Bacteria
Principle Investigator: Jianjun Pan
Co-Investigator: Jianfeng Cai (USF Chemistry Department)
Agency: National Institutes of Health (NIH 1R15GM117531-01)
Project period: 12/01/2015 – 11/30/2018
Status: Active

Professional Affiliation

1. Member of Biophysical Society
2. Member of American Chemical Society