

Nongjian (NJ) Tao

Director

The Biodesign Institute, Bioelectronics and Biosensors

Professor

Ira A. Fulton School of Engineering, Electrical Engineering
Arizona State University

Professional Preparation

Anhui University	Physics	B.S., 1984
Arizona State University	Physics	Ph.D., 1988

Appointments

2008 – present: Director, Center for Bioelectronics and Biosensors, Biodesign Institute, Arizona State University

2001 – present: Professor, Electrical Engineering & Chemistry, Arizona State University

1997 – 2001: Associate Professor, Florida International University.
Adjunct Professor, Chemistry, University of Miami.

1992 – 1997: Assistant Professor, Florida International University.

1990 – 1992: Research Associate, Arizona State University.

1988 – 1990: Postdoctoral Fellow, City College of City University of New York.

Honors and Awards

Elected Fellow of American Association for the Advancement of Science; Elected Fellow of American Physical Society; Finalist of Arizona Governor's Innovator (2010); Two-year extension for special creativity award, National Science Foundation (2008); Arizona Technology Enterprise Innovator (2006); Alexander von Humboldt Research Award (2004); Hellmuth Fischer Medal, 11th International Fischer Symposium, Germany (2003); Molecular Imaging's Young Microscopist Award (1996).

Research Interests

- Bio and chemical sensors
- Molecular and nanoelectronic devices
- Bioanalytical Instruments
- Nanostructured materials and devices

Publications

NJ Tao has published over 200 refereed journal articles and book chapters, which have been cited more than 10,000 times (h-index: 57).

1. W. Wang, Y.Z. Yang, S.P. Wang, V.J. Nagaraj, Q. Liu, J. Wu, and N.J. Tao, "Label-free measuring and mapping of binding kinetics of membrane proteins in single living cells", *Nat. Chem.* **4**, 846-853 (2012).
2. W. Wang, S.P. Wang, Q. Liu, J. Wu, and N.J. Tao, "Mapping Single-Cell-Substrate Interactions by Surface Plasmon Resonance Microscopy", *Langmuir* **28**, 13373-13379 (2012).
3. X.N. Shan, I. Diez-Perez, L.J. Wang, P. Wiktor, Y. Gu, L.H. Zhang, W. Wang, J. Lu, S.P. Wang, Q.H. Gong, J.H. Li, and N.J. Tao, "Imaging the electrocatalytic activity of single nanoparticles", *Nat. Nano.* **7**, 668-672 (2012).
4. A. Prabhakar, R.A. Iglesias, X.N. Shan, X.J. Xian, L.H. Zhang, F. Tsow, E.S. Forzani, and N.J. Tao, "Online Sample Conditioning for Portable Breath Analyzers", *Anal. Chem.* **84**, 7172-7178 (2012).
5. J. Lu, W. Wang, S.P. Wang, X.N. Shan, J.H. Li, and N.J. Tao, "Plasmonic-Based Electrochemical Impedance Spectroscopy: Application to Molecular Binding", *Anal. Chem.* **84**, 327-333 (2012).
6. C. Liu, T.J. Lei, K. Ino, T. Matsue, N.J. Tao, and C.Z. Li, "Real-time monitoring biomarker expression of carcinoma cells by surface plasmon resonance biosensors", *Chem. Comm.* **48**, 10389-10391 (2012).
7. J. Hihath, S.Y. Guo, P.M. Zhang, and N.J. Tao, "Effects of cytosine methylation on DNA charge transport", *J. Phys. Cond. Matt.* **24**, 16 (2012).
8. I. Diez-Perez, Z.H. Li, S.Y. Guo, C. Madden, H.L. Huang, Y.K. Che, X.M. Yang, L. Zang, and N.J. Tao, "Ambipolar Transport in an Electrochemically Gated Single-Molecule Field-Effect Transistor", *ACS Nano* **6**, 7044-7052 (2012).
9. N. Darwish, I. Diez-Perez, S.Y. Guo, N.J. Tao, J.J. Gooding, and M.N. Paddon-Row, "Single Molecular Switches: Electrochemical Gating of a Single Anthraquinone-Based Norbornylogous Bridge Molecule", *J. Phys. Chem. C* **116**, 21093-21097 (2012).
10. N. Darwish, I. Diez-Perez, P. Da Silva, N.J. Tao, J.J. Gooding, and M.N. Paddon-Row, "Observation of Electrochemically Controlled Quantum Interference in a Single Anthraquinone-Based Norbornylogous Bridge Molecule", *Angew. Chem. Int. Ed.* **51**, 3203-3206 (2012).
11. C. Chen, K.D. Campbell, I. Negi, R.A. Iglesias, P. Owens, N.J. Tao, F. Tsow, and E.S. Forzani, "A new sensor for the assessment of personal exposure to volatile organic compounds", *Atmos. Environ.* **54**, 679-687 (2012).

12. C. Bruot, J. Hihath, and N.J. Tao, "Mechanically controlled molecular orbital alignment in single molecule junctions", *Nat. Nano.* **7**, 35-40 (2012).
13. Y. Yang, J.Y. Liu, Z.B. Chen, J.H. Tian, X. Jin, B. Liu, X.L. Li, Z.Z. Luo, M. Lu, F.Z. Yang, N.J. Tao, and Z.Q. Tian, "Conductance histogram evolution of an EC-MCBJ fabricated Au atomic point contact", *Nanotechnology* **22**, 275313 (2011).
14. W. Wang, K. Foley, X. Shan, S.P. Wang, S. Eaton, V.J. Nagaraj, P. Wiktor, U. Patel, and N.J. Tao, "Single cells and intracellular processes studied by a plasmonic-based electrochemical impedance microscopy", *Nat. Chem.* **3**, 249-255 (2011).
15. X.N. Shan, S.P. Wang, W. Wang, and N.J. Tao, "Plasmonic-Based Imaging of Local Square Wave Voltammetry", *Anal. Chem.* **83**, 7394-7399 (2011).
16. I. Negi, F. Tsow, K. Tanwar, L.H. Zhang, R.A. Iglesias, C. Chen, A. Rai, E.S. Forzani, and N.J. Tao, "Novel monitor paradigm for real-time exposure assessment", *J. Expo. Sci. Environ.* **21**, 419-426 (2011).
17. H. Nakamura, Y. Asai, J. Hihath, C. Bruot, and N.J. Tao, "Switch of Conducting Orbital by Bias-Induced Electronic Contact Asymmetry in a Bipyrimidinyl-biphenyl Diblock Molecule: Mechanism to Achieve a pn Directional Molecular Diode", *J. Phys. Chem. C* **115**, 19931-19938 (2011).
18. J. Hihath, C. Bruot, H. Nakamura, Y. Asai, I. Diez-Perez, Y. Lee, L.P. Yu, and N.J. Tao, "Inelastic Transport and Low-Bias Rectification in a Single-Molecule Diode", *ACS Nano* **5**, 8331-8339 (2011).
19. S.Y. Guo, J. Hihath, and N.J. Tao, "Breakdown of Atomic-Sized Metallic Contacts Measured on Nanosecond Scale", *Nano Lett.* **11**, 927-933 (2011).
20. S.Y. Guo, J. Hihath, I. Diez-Perez, and N.J. Tao, "Measurement and Statistical Analysis of Single-Molecule Current-Voltage Characteristics, Transition Voltage Spectroscopy, and Tunneling Barrier Height", *J. Am. Chem. Soc.* **133**, 19189-19197 (2011).
21. I. Diez-Perez, J. Hihath, T. Hines, Z.S. Wang, G. Zhou, K. Mullen, and N.J. Tao, "Controlling single-molecule conductance through lateral coupling of pi orbitals", *Nat. Nano.* **6**, 226-231 (2011).
22. Y. Asai, H. Nakamura, J. Hihath, C. Bruot, and N.J. Tao, "Electron correlation enhancement of the diode property of asymmetric molecules", *Phys. Rev. B* **84**, 115436 (2011).
23. L.H. Zhang, F. Tsow, E. Forzani, and N.J. Tao, "Reversible oxygen gas sensor based on electrochemiluminescence", *Chem. Comm.* **46**, 3333-3335 (2010).
24. J.L. Xia, F. Chen, P. Wiktor, D.K. Ferry, and N.J. Tao, "Effect of Top Dielectric Medium on Gate Capacitance of Graphene Field Effect Transistors: Implications

- in Mobility Measurements and Sensor Applications", *Nano Lett.* **10**, 5060-5064 (2010).
25. J.L. Xia, F. Chen, J.L. Tedesco, D.K. Gaskill, R.L. Myers-Ward, C.R. Eddy, D.K. Ferry, and N.J. Tao, "The transport and quantum capacitance properties of epitaxial graphene", *Appl. Phys. Lett.* **96**, 162101 (2010).
 26. S.P. Wang, X.N. Shan, U. Patel, X.P. Huang, J. Lu, J.H. Li, and N.J. Tao, "Label-free imaging, detection, and mass measurement of single viruses by surface plasmon resonance", *Proc. Natl. Acad. Sci. U.S.A.* **107**, 16028-16032 (2010).
 27. S.P. Wang, X.P. Huang, X.N. Shan, K.J. Foley, and N.J. Tao, "Electrochemical Surface Plasmon Resonance: Basic Formalism and Experimental Validation", *Anal. Chem.* **82**, 935-941 (2010).
 28. J.H. Tian, Y. Yang, B. Liu, B. Schollhorn, D.Y. Wu, E. Maisonhaute, A.S. Muns, Y. Chen, C. Amatore, N.J. Tao, and Z.Q. Tian, "The fabrication and characterization of adjustable nanogaps between gold electrodes on chip for electrical measurement of single molecules", *Nanotechnology* **21**, 274012 (2010).
 29. X.N. Shan, S.P. Wang, and N.J. Tao, "Study of single particle charge and Brownian motions with surface plasmon resonance", *Appl. Phys. Lett.* **97** (2010).
 30. X.N. Shan, U. Patel, S.P. Wang, R. Iglesias, and N.J. Tao, "Imaging Local Electrochemical Current via Surface Plasmon Resonance", *Science* **327**, 1363-1366 (2010).
 31. X.N. Shan, X.P. Huang, K.J. Foley, P.M. Zhang, K.P. Chen, S.P. Wang, and N.J. Tao, "Measuring Surface Charge Density and Particle Height Using Surface Plasmon Resonance Technique", *Anal. Chem.* **82**, 234-240 (2010).
 32. A. Prabhakar, R.A. Iglesias, R. Wang, F. Tsow, E.S. Forzani, and N.J. Tao, "Ultrasensitive Detection of Nitrogen Oxides over a Nanoporous Membrane", *Anal. Chem.* **82**, 9938-9940 (2010).
 33. X.P. Huang, S.P. Wang, X.N. Shan, X.J. Chang, and N.J. Tao, "Flow-through Electrochemical Surface Plasmon Resonance Detection of intermediate reaction products", *J. Electroanal. Chem.* **649**, 37-41 (2010).
 34. T. Hines, I. Diez-Perez, J. Hihath, H.M. Liu, Z.S. Wang, J.W. Zhao, G. Zhou, K. Muellen, and N.J. Tao, "Transition from Tunneling to Hopping in Single Molecular Junctions by Measuring Length and Temperature Dependence", *J. Am. Chem. Soc.* **132**, 11658-11664 (2010).
 35. J. Hihath, C. Bruot, and N.J. Tao, "Electron-Phonon Interactions in Single Octanedithiol Molecular Junctions", *ACS Nano* **4**, 3823-3830 (2010).
 36. I. Diez-Perez, Z.H. Li, J. Hihath, J.H. Li, C.Y. Zhang, X.M. Yang, L. Zang, Y.J. Dai, X.L. Feng, K. Muellen, and N.J. Tao, "Gate-controlled electron transport in coronenes

as a bottom-up approach towards graphene transistors", *Nat. Comm.* **1**, 31 (2010).

37. F. Chen, Q. Qing, J.L. Xia, and N.J. Tao, "Graphene Field-Effect Transistors: Electrochemical Gating, Interfacial Capacitance, and Biosensing Applications", *Chem. Asian J.* **5**, 2144-2153 (2010).
38. A.D. Aguilar, E.S. Forzani, M. Leright, F. Tsow, A. Cagan, R.A. Iglesias, L.A. Nagahara, I. Amlani, R. Tsui, and N.J. Tao, "A Hybrid Nanosensor for TNT Vapor Detection", *Nano Lett.* **10**, 380-384 (2010).
39. J.L. Xia, F. Chen, J.H. Li, and N.J. Tao, "Measurement of the quantum capacitance of graphene", *Nat. Nano.* **4**, 505-509 (2009).
40. R. Wang, F. Tsow, X.Z. Zhang, J.H. Peng, E.S. Forzani, Y.S. Chen, J.C. Crittenden, H. Destailats, and N.J. Tao, "Real-Time Ozone Detection Based on a Microfabricated Quartz Crystal Tuning Fork Sensor", *Sensors* **9**, 5655-5663 (2009).
41. F. Tsow, E. Forzani, A. Rai, R. Wang, R. Tsui, S. Mastroianni, C. Knobbe, A.J. Gandolfi, and N.J. Tao, "A Wearable and Wireless Sensor System for Real-Time Monitoring of Toxic Environmental Volatile Organic Compounds", *IEEE Sens. J.* **9**, 1734-1740 (2009).
42. N.J. Tao, "MOLECULAR SWITCHES Pushing the right button", *Nat. Chem.* **1**, 108-109 (2009).
43. R.S. Shishir, F. Chen, J. Xia, N.J. Tao, and D.K. Ferry, "Room temperature carrier transport in graphene", *J. Comput. Electro.* **8**, 43-50 (2009).
44. R.S. Shishir, F. Chen, J. Xia, N.J. Tao, and D.K. Ferry, "Theory and measurements of room temperature transport in graphene using SiO₂ backgate and electrochemical gate", *J. Vac. Sci. Tech. B* **27**, 2003-2007 (2009).
45. A. Rai, F. Tsow, S. Nassirpour, J. Bankers, M. Spinatsch, M.P. He, E.S. Forzani, and N.J. Tao, "Selective detection of sulfur derivatives using microfabricated tuning fork-based sensors", *Sens. Act. B* **140**, 490-499 (2009).
46. R.A. Iglesias, F. Tsow, R. Wang, E.S. Forzani, and N.J. Tao, "Hybrid Separation and Detection Device for Analysis of Benzene, Toluene, Ethylbenzene, and Xylenes in Complex Samples", *Anal. Chem.* **81**, 8930-8935 (2009).
47. Z.F. Huang and N.J. Tao. Current-induced Local Heating in Molecular Junctions. *Current-driven Phenomena in Nanoelectronics*. T. Seideman, Pan Stanford Publishing c/o World Scientific Publishing Co. Inc (2009).
48. E.S. Forzani, D.L. Lu, M.J. Leright, A.D. Aguilar, F. Tsow, R.A. Iglesias, Q. Zhang, J. Lu, J.H. Li, and N.J. Tao, "A Hybrid Electrochemical-Colorimetric Sensing Platform for Detection of Explosives", *J. Am. Chem. Soc.* **131**, 1390-1391 (2009).

49. I. Diez-Perez, J. Hihath, Y. Lee, L.P. Yu, L. Adamska, M.A. Kozhushner, Oleynik, II, and N.J. Tao, "Rectification and stability of a single molecular diode with controlled orientation", *Nat. Chem.* **1**, 635-641 (2009).
50. F. Chen, J.L. Xia, and N.J. Tao, "Ionic Screening of Charged-Impurity Scattering in Graphene", *Nano Lett.* **9**, 1621-1625 (2009).
51. F. Chen, J.L. Xia, D.K. Ferry, and N.J. Tao, "Dielectric Screening Enhanced Performance in Graphene FET", *Nano Lett.* **9**, 2571-2574 (2009).
52. F. Chen and N.J. Tao, "Electron Transport in Single Molecules: From Benzene to Graphene", *Acc. Chem. Res.* **42**, 429-438 (2009).
53. F. Chen, Q. Qing, J.L. Xia, J.H. Li, and N.J. Tao, "Electrochemical Gate-Controlled Charge Transport in Graphene in Ionic Liquid and Aqueous Solution", *J. Am. Chem. Soc.* **131**, 9908-9909 (2009).
54. W.R.R. Yang, M.W. Jones, X.L. Li, P.K. Eggers, N.J. Tao, J.J. Gooding, and M.N. Paddon-Row, "Single molecule conductance through rigid norbornylogous bridges with zero average curvature", *J. Phys. Chem. c* **112**, 9072-9080 (2008).
55. J.L. Xia, I. Diez-Perez, and N.J. Tao, "Electron transport in single molecules measured by a distance-modulation assisted break junction method", *Nano Lett.* **8**, 1960-1964 (2008).
56. N. Weibel, A. Blaszczyk, C. von Haenisch, M. Mayor, I. Pobelov, T. Wandlowski, F. Chen, and N.J. Tao, "Redox-active catechol-functionalized molecular rods: Suitable protection groups and single-molecule transport investigations", *Euro. J. Org. Chem.*, 136-149 (2008).
57. F. Tsow, E.S. Forzani, and N.J. Tao, "Frequency-coded chemical sensors", *Anal. Chem.* **80**, 606-611 (2008).
58. X.N. Shan, K.J. Foley, and N.J. Tao, "A label-free optical detection method for biosensors and microfluidics", *Appl. Phys. Lett.* **92**, 133901 (2008).
59. J. Hihath and N. Tao, "Rapid measurement of single-molecule conductance", *Nanotechnology* **19**, 265204 (2008).
60. J. Hihath, C.R. Arroyo, G. Rubio-Bollinger, N.J. Tao, and N. Agrait, "Study of electron-phonon interactions in a single molecule covalently connected to two electrodes", *Nano Lett.* **8**, 1673-1678 (2008).
61. J. He, E.S. Forzani, L.A. Nagahara, N.J. Tao, and S. Lindsay, "Charge transport in mesoscopic conducting polymer wires", *J. Phys. Cond. Matt.* **20**, 374120 (2008).
62. K.J. Foley, X. Shan, and N.J. Tao, "Surface impedance imaging technique", *Anal. Chem.* **80**, 5146-5151 (2008).

63. K.J. Foley, E.S. Forzani, L. Joshi, and N. Tao, "Detection of lectin-glycan interaction using high resolution surface plasmon resonance", *Analyst* **133**, 744-746 (2008).
64. A.D. Aguilar, E.S. Forzani, L.A. Nagahara, I. Amlani, R. Tsui, and N.J. Tao, "Breath ammonia sensor based on conducting polymer nanojunctions", *IEEE Sens. J.* **8**, 269-273 (2008).
65. S.P. Wang, E.S. Forzani, and N.J. Tao, "Detection of heavy metal ions in water by high-resolution surface plasmon resonance spectroscopy combined with anodic stripping voltammetry", *Anal. Chem.* **79**, 4427-4432 (2007).
66. F. Tsow and N. Tao, "Microfabricated tuning fork temperature and infrared sensor", *Appl. Phys. Lett.* **90**, 174102 (2007).
67. N.J. Tao, "Switching made simpler", *Nat. Nano.* **2**, 677-677 (2007).
68. N. Ly, K. Foley, and N.J. Tao, "Integrated label-free protein detection and separation in real time using confined surface plasmon resonance imaging", *Anal. Chem.* **79**, 2546-2551 (2007).
69. X.L. Li, J. Hihath, F. Chen, T. Masuda, L. Zang, and N.J. Tao, "Thermally activated electron transport in single redox molecules", *J. Am. Chem. Soc.* **129**, 11535-11542 (2007).
70. Z.F. Huang, F. Chen, R. D'Agosta, P.A. Bennett, M. Di Ventra, and N.J. Tao, "Local ionic and electron heating in single-molecule junctions", *Nat. Nano.* **2**, 698-703 (2007).
71. Z.F. Huang, F. Chen, P.A. Bennett, and N.J. Tao, "Single molecule junctions formed via au-thiol contact: Stability and breakdown mechanism", *J. Am. Chem. Soc.* **129**, 13225-13231 (2007).
72. J. Hihath, F. Chen, P.M. Zhang, and N.J. Tao, "Thermal and electrochemical gate effects on DNA conductance", *J. Phys. Cond. Matt.* **19**, 215202 (2007).
73. E.S. Forzani, X.L. Li, and N.J. Tao, "Hybrid amperometric and conductometric chemical sensor based on conducting polymer nanojunctions", *Anal. Chem.* **79**, 5217-5224 (2007).
74. E.S. Forzani, K. Foley, P. Westerhoff, and N.J. Tao, "Detection of arsenic in groundwater using a surface plasmon resonance sensor", *Sens. Act. B* **123**, 82-88 (2007).
75. T. Dastagir, E.S. Forzani, R. Zhang, I. Amlani, L.A. Nagahara, R. Tsui, and N. Tao, "Electrical detection of hepatitis C virus RNA on single wall carbon nanotube-field effect transistors", *Analyst* **132**, 738-740 (2007).
76. F. Chen, Z.F. Huang, and N.J. Tao, "Forming single molecular junctions between indium tin oxide electrodes", *Appl. Phys. Lett.* **91**, 162106 (2007).

77. F. Chen, J. Hihath, Z.F. Huang, X.L. Li, and N.J. Tao. Measurement of single-molecule conductance. *Annu. Rev. Phys. Chem.* **58**: 535-564 (2007).
78. X.Y. Xiao, D. Brune, J. He, S. Lindsay, C.B. Gorman, and N.J. Tao, "Redox-gated electron transport in electrically wired ferrocene molecules", *Chem. Phys.* **326**, 138-143 (2006).
79. J.H. Tian, B. Liu, X.L. Li, Z.L. Yang, B. Ren, S.T. Wu, N.J. Tao, and Z.Q. Tian, "Study of molecular junctions with a combined surface-enhanced Raman and mechanically controllable break junction method", *J. Am. Chem. Soc.* **128**, 14748-14749 (2006).
80. N.J. Tao, "Electron transport in molecular junctions", *Nat. Nano.* **1**, 173-181 (2006).
81. N. Ly and N. Tao, "Scalable dope-coded biosensing particles for protein detection", *Appl. Phys. Lett.* **88**, 043901 (2006).
82. X.L. Li, B.Q. Xu, X.Y. Xiao, X.M. Yang, L. Zang, and N.J. Tao, "Controlling charge transport in single molecules using electrochemical gate", *Faraday Discuss.* **131**, 111-120 (2006).
83. X.L. Li, S.Z. Hua, H.D. Chopra, and N.J. Tao, "Formation of atomic point contacts and molecular junctions with a combined mechanical break junction and electrodeposition method", *Micro & Nano Lett.* **1**, 83-88 (2006).
84. X.L. Li, J. He, J. Hihath, B.Q. Xu, S.M. Lindsay, and N.J. Tao, "Conductance of single alkanedithiols: Conduction mechanism and effect of molecule-electrode contacts", *J. Am. Chem. Soc.* **128**, 2135-2141 (2006).
85. Z.F. Huang, B.Q. Xu, Y.C. Chen, M. Di Ventra, and N.J. Tao, "Measurement of current-induced local heating in a single molecule junction", *Nano Lett.* **6**, 1240-1244 (2006).
86. J. He, O. Sankey, M. Lee, N.J. Tao, X.L. Li, and S. Lindsay, "Measuring single molecule conductance with break junctions", *Faraday Discuss.* **131**, 145-154 (2006).
87. E.S. Forzani, X.L. Li, P.M. Zhang, N.J. Tao, R. Zhang, I. Amlani, R. Tsui, and L.A. Nagahara, "Tuning the chemical selectivity of SWNT-FETs for detection of heavy-metal ions", *Small* **2**, 1283-1291 (2006).
88. F. Chen and N.J. Tao. Electrochemical Fabrication of Metal Nanocontacts and Nanogaps. *Electrocrystallization in Nanotechnology*. G. Staikov, Wiley-VCH (2006).
89. F. Chen, X.L. Li, J. Hihath, Z.F. Huang, and N.J. Tao, "Effect of anchoring groups on single-molecule conductance: Comparative study of thiol-, amine-, and carboxylic-acid-terminated molecules", *J. Am. Chem. Soc.* **128**, 15874-15881 (2006).

90. B.Q.Q. Xu, X.L.L. Li, X.Y.Y. Xiao, H. Sakaguchi, and N.J.J. Tao, "Electromechanical and conductance switching properties of single oligothiophene molecules", *Nano Lett.* **5**, 1491-1495 (2005).
91. B.Q. Xu, X.Y. Xiao, X.M. Yang, L. Zang, and N.J. Tao, "Large gate modulation in the current of a room temperature single molecule transistor", *J. Am. Chem. Soc.* **127**, 2386-2387 (2005).
92. X.Y. Xiao, L.A. Nagahara, A.M. Rawlett, and N.J. Tao, "Electrochemical gate-controlled conductance of single oligo(phenylene ethynylene)s", *J. Am. Chem. Soc.* **127**, 9235-9240 (2005).
93. N.J. Tao, "Measurement and control of single molecule conductance", *J. Mat. Chem.* **15**, 3260-3263 (2005).
94. N.J. Tao, "Electrochemical fabrication of metallic quantum wires", *J. Chem. Edu.* **82**, 720-726 (2005).
95. M.H. Ren, E.S. Forzani, and N.J. Tao, "Chemical sensor based on microfabricated wristwatch tuning forks", *Anal. Chem.* **77**, 2700-2707 (2005).
96. V. Rajagopalan, S. Boussaad, and N.J. Tao. A Nanocontact Sensor for Heavy Metal Ion Detection. *Nanotechnology and Environment*. B. Karn, et al., Oxford University Press: 173-179 (2005).
97. X.L. Li, B.Q. Xu, X.Y. Xiao, J. Hihath, and N.J. Tao, "Measurement of electron transport properties of single molecules", *Jap. J. Appl. Phys.* **44**, 5344-5347 (2005).
98. J. Hihath, B.Q. Xu, P.M. Zhang, and N.J. Tao, "Study of single-nucleotide polymorphisms by means of electrical conductance measurements", *Proc. Natl. Acad. Sci. U.S.A.* **102**, 16979-16983 (2005).
99. E.S. Forzani, H.Q. Zhang, W. Chen, and N.J. Tao, "Detection of heavy metal ions in drinking water using a high-resolution differential surface plasmon resonance sensor", *Environ. Sci. Technol.* **39**, 1257-1262 (2005).
100. A.D. Aguilar, E.S. Forzani, X.L. Li, N.J. Tao, L.A. Nagahara, I. Amlani, and R. Tsui, "Chemical sensors using peptide-functionalized conducting polymer nanojunction arrays", *Appl. Phys. Lett.* **87**, 193108 (2005).
101. H.Q. Zhang, S. Boussaad, N. Ly, and N.J.J. Tao, "Magnetic-field-assisted assembly of metal/polymer/metal junction sensors", *Appl. Phys. Lett.* **84**, 133-135 (2004).
102. X. Yao, J.X. Wang, F.M. Zhou, J. Wang, and N.J. Tao, "Quantification of redox-induced thickness changes of 11-ferrocenylundecanethiol self-assembled monolayers by electrochemical surface plasmon resonance", *J. Phys. Chem. B* **108**, 7206-7212 (2004).

103. B.Q. Xu, P.M. Zhang, X.L. Li, and N.J. Tao, "Direct conductance measurement of single DNA molecules in aqueous solution", *Nano Lett.* **4**, 1105-1108 (2004).
104. X.Y. Xiao, B.Q. Xu, and N.J. Tao, "Changes in the conductance of single peptide molecules upon metal-ion binding", *Angew. Chem. Int. Ed.* **43**, 6148-6152 (2004).
105. X.Y. Xiao, B.Q. Xu, and N.J. Tao, "Measurement of single molecule conductance: Benzenedithiol and benzenedimethanethiol", *Nano Lett.* **4**, 267-271 (2004).
106. X.Y. Xiao, B.Q. Xu, and N.J. Tao, "Conductance titration of single-peptide molecules", *J. Am. Chem. Soc.* **126**, 5370-5371 (2004).
107. X.L. Li, H.X. He, B.Q. Xu, X.Y. Xiao, L.A. Nagahara, I. Amlani, R. Tsui, and N.J. Tao, "Measurement of electron transport properties of molecular junctions fabricated by electrochemical and mechanical methods", *Surf. Sci.* **573**, 1-10 (2004).
108. H.X. He and N.J. Tao. Electrochemical fabrication of metal nanowires. *Encyclopedia of Nanoscience and Nanotechnology*. N.S. Nalwa, American Scientific Publishers (2004).
109. H.X. He, S. Boussaad, B.Q. Xu, and N.J. Tao. Molecular and Ionic Adsorption onto Atomic-Scale Metal Wires. *Nanowires and Nanobelts – Materials, Properties and Devices*. Z.L. Wang, Kluwer Academic Press (2004).
110. E.S. Forzani, H.Q. Zhang, L.A. Nagahara, I. Amlani, R. Tsui, and N.J. Tao, "A conducting polymer nanojunction sensor for glucose detection", *Nano Lett.* **4**, 1785-1788 (2004).
111. B. Ashcroft, B. Takulapalli, J. Yang, G.M. Laws, H.Q. Zhang, N.J. Tao, S. Lindsay, D. Gust, and T.J. Thornton, "Calibration of a pH sensitive buried channel silicon-on-insulator MOSFET for sensor applications", *Phys. Stat. Solid. B* **241**, 2291-2296 (2004).
112. H.Q. Zhang, S. Boussaad, and N.J. Tao, "High-performance differential surface plasmon resonance sensor using quadrant cell photodetector", *Rev. Sci. Instrum.* **74**, 150-153 (2003).
113. B.Q. Xu, X.Y. Xiao, and N.J. Tao, "Measurements of single-molecule electromechanical properties", *J. Am. Chem. Soc.* **125**, 16164-16165 (2003).
114. B.Q. Xu and N.J.J. Tao, "Measurement of single-molecule resistance by repeated formation of molecular junctions", *Science* **301**, 1221-1223 (2003).
115. B.Q. Xu, H.X. He, S. Boussaad, and N.J. Tao, "Electrochemical properties of atomic-scale metal wires", *Electrochim. Acta.* **48**, 3085-3091 (2003).
116. N.J. Tao. Spectroscopic Applications of SPM in Electrochemistry. *Encyclopedia of electrochemistry*. A.J. Bard and M. Stratmann, Wiley-VCH (2003).

117. V. Rajagopalan, S. Boussaad, and N.J.J. Tao, "Detection of heavy metal ions based on quantum point contacts", *Nano Lett.* **3**, 851-855 (2003).
118. H.X. He, X.L. Li, N.J. Tao, L.A. Nagahara, I. Amlani, and R. Tsui, "Discrete conductance switching in conducting polymer wires", *Phys. Rev. B* **68** (2003).
119. S. Boussaad, B.Q. Xu, L.A. Nagahara, I. Amlani, W. Schmickler, R. Tsui, and N.J. Tao, "Discrete tunneling current fluctuations in metal-water-metal tunnel junctions", *J. Chem. Phys.* **118**, 8891-8897 (2003).
120. S. Boussaad, N.J. Tao, R. Zhang, T. Hopson, and L.A. Nagahara, "In situ detection of cytochrome c adsorption with single walled carbon nanotube device", *Chem. Comm.*, **13**, 1502-1503 (2003).
121. S. Boussaad and N.J. Tao, "Polymer wire chemical sensor using a microfabricated tuning fork", *Nano Lett.* **3**, 1173-1176 (2003).
122. S. Boussaad and N.J. Tao, "Kinetics of electron transfer-induced conformational changes in cytochrome c immobilized on electrodes studied with surface plasmon resonance", *J. Electroanal. Chem.* **554**, 233-239 (2003).
123. B.Q. Xu, H.X. He, and N.J. Tao, "Controlling the conductance of atomically thin metal wires with electrochemical potential", *J. Am. Chem. Soc.* **124**, 13568-13575 (2002).
124. S. Wang, S. Boussaad, and N.J. Tao. Surface Plasmon Resonance Spectroscopy: Applications in Protein Adsorption and Electrochemistry. *Biomolecular Films: Design, Function, and Applications*. J.F. Rusling (2002).
125. F.Y. Song, F.M. Zhou, J. Wang, N.J. Tao, J.Q. Lin, R.L. Vellanoweth, Y. Morquecho, and J. Wheeler-Laidman, "Detection of oligonucleotide hybridization at femtomolar level and sequence-specific gene analysis of the Arabidopsis thaliana leaf extract with an ultrasensitive surface plasmon resonance spectrometer", *Nuc. Acid. Res.* **30**, e72 (2002).
126. H.X. He and N.J. Tao, "Interactions of molecules with metallic quantum wires", *Adv. Mat.* **14**, 161-164 (2002).
127. H.X. He, C. Shu, C.Z. Li, and N.J. Tao, "Adsorbate effect on the mechanical stability of atomically thin metallic wires", *J. Electroanal. Chem.* **522**, 26-32 (2002).
128. H.X. He, S. Boussaad, B.Q. Xu, C.Z. Li, and N.J. Tao, "Electrochemical fabrication of atomically thin metallic wires and electrodes separated with molecular-scale gaps", *J. Electroanal. Chem.* **522**, 167-172 (2002).
129. S. Boussaad and N.J. Tao, "Atom-size gaps and contacts between electrodes fabricated with a self-terminated electrochemical method", *Appl. Phys. Lett.* **80**, 2398-2400 (2002).

130. S. Wang, S. Boussaad, and N.J. Tao, "Surface plasmon resonance enhanced optical absorption spectroscopy for studying molecular adsorbates", *Rev. Sci. Instrum.* **72**, 3055-3060 (2001).
131. J.B. Schenkman, I. Jansson, Y. Lvov, J.F. Rusling, S. Boussaad, and N.J. Tao, "Charge-dependent sidedness of cytochrome P450 forms studied by quartz crystal microbalance and atomic force microscopy", *Arc. Biochem. Biophys.* **385**, 78-87 (2001).
132. H.X. He, J.S. Zhu, N.J. Tao, L.A. Nagahara, I. Amlani, and R. Tsui, "A conducting polymer nanojunction switch", *J. Am. Chem. Soc.* **123**, 7730-7731 (2001).
133. H.X. He, C.Z. Li, and N.J. Tao, "Conductance of polymer nanowires fabricated by a combined electrodeposition and mechanical break junction method", *Appl. Phys. Lett.* **78**, 811-813 (2001).
134. A. Bogozi, O. Lam, H.X. He, C.Z. Li, N.J. Tao, L.A. Nagahara, I. Amlani, and R. Tsui, "Molecular adsorption onto metallic quantum wires", *J. Am. Chem. Soc.* **123**, 4585-4590 (2001).
135. S. Wang, S. Boussaad, S. Wang, and N.J. Tao, "High sensitivity stark spectroscopy obtained by surface plasmon resonance measurement", *Anal. Chem.* **72**, 4003-4008 (2000).
136. N.J. Tao, C.Z. Li, and H.X. He, "Scanning tunneling microscopy applications in electrochemistry - beyond imaging", *J. Electroanal. Chem.* **492**, 81-93 (2000).
137. C. Shu, C.Z. Li, H.X. He, A. Bogozi, J.S. Bunch, and N.J. Tao, "Fractional conductance quantization in metallic nanoconstrictions under electrochemical potential control", *Phys. Rev. Lett.* **84**, 5196-5199 (2000).
138. C.Z. Li, H.X. He, and N.J. Tao, "Quantized tunneling current in the metallic nanogaps formed by electrodeposition and etching", *Appl. Phys. Lett.* **77**, 3995-3997 (2000).
139. C.Z. Li, H.X. He, A. Bogozi, J.S. Bunch, and N.J. Tao, "Molecular detection based on conductance quantization of nanowires", *Appl. Phys. Lett.* **76**, 1333-1335 (2000).
140. S. Boussaad, J. Pean, and N.J. Tao, "High-resolution multiwavelength surface plasmon resonance spectroscopy for probing conformational and electronic changes in redox proteins", *Anal. Chem.* **72**, 222-226 (2000).
141. N.J. Tao, C.Z. Li, F. Cunha, and Q. Jin. Potential Controlled Ordering and Reaction in Organic Monolayers at Solid-Liquid Interfaces Studied by in situ STM and AFM. *Scanning Microscopy* (1999).
142. N.J. Tao, S. Boussaad, W.L. Huang, R.A. Arechabaleta, and J. D'Agnesse, "High resolution surface plasmon resonance spectroscopy", *Rev. Sci. Instrum.* **70**, 4656-4660 (1999).

143. C.Z. Li, A. Bogozzi, W. Huang, and N.J. Tao, "Fabrication of stable metallic nanowires with quantized conductance", *Nanotechnology* **10**, 221-223 (1999).
144. Q. Jin, J.A. Rodriguez, C.Z. Li, Y. Darici, and N.J. Tao, "Self-assembly of aromatic thiols on Au(111)", *Surf. Sci.* **425**, 101-111 (1999).
145. M.J. Giz, B. Duong, and N.J. Tao, "In situ STM study of self-assembled mercaptopropionic acid monolayers for electrochemical detection of dopamine", *J. Electroanal. Chem.* **465**, 72-79 (1999).
146. S. Boussaad and N.J. Tao, "Electron transfer and adsorption of myoglobin on self-assembled surfactant films: An electrochemical tapping-mode AFM study", *J. Am. Chem. Soc.* **121**, 4510-4515 (1999).
147. C.Z. Li and N.J. Tao, "Quantum transport in metallic nanowires fabricated by electrochemical deposition/dissolution", *Appl. Phys. Lett.* **72**, 894-896 (1998).
148. C.Z. Li, H. Sha, and N.J. Tao, "Adsorbate effect on conductance quantization in metallic nanowires", *Phys. Rev. B* **58**, 6775-6778 (1998).
149. Y. Ke, S. Milano, X.W. Wang, N. Tao, and Y. Darici, "Structural studies of sulfur-passivated GaAs (100) surfaces with LEED and AFM", *Surf. Sci.* **415**, 29-36 (1998).
150. L. Dziri, S. Boussaad, N.J. Tao, and R.M. Leblanc, "Acetylcholinesterase complexation with acetylthiocholine or organophosphate at the air/aqueous interface: AFM and UV-Vis studies", *Langmuir* **14**, 4853-4859 (1998).
151. L. Dziri, S. Boussaad, N. Tao, and R.M. Leblanc, "Effect of pH on acetylcholinesterase Langmuir and Langmuir-Blodgett films studied by surface potential and atomic force microscopy", *Thin Solid Films* **327**, 56-59 (1998).
152. B. Duong, R. Arechabaleta, and N.J. Tao, "In situ AFM/STM characterization of porphyrin electrode films for electrochemical detection of neurotransmitters", *J. Electroanal. Chem.* **447**, 63-69 (1998).
153. O. Dominguez, L. Echegoyen, F. Cunha, and N.J. Tao, "Self-assembled fullerene-derivative monolayers on a gold substrate using phenanthroline-Au interactions", *Langmuir* **14**, 821-824 (1998).
154. S. Boussaad, L. Dziri, R. Arechabaleta, N.J. Tao, and R.M. Leblanc, "Electron-transfer properties of cytochrome c Langmuir-Blodgett films and interactions of cytochrome c with lipids", *Langmuir* **14**, 6215-6219 (1998).
155. L. Shao, N.J. Tao, and R.M. Leblanc, "Probing the microelastic properties of nanobiological particles with tapping mode atomic force microscopy", *Chem. Phys. Lett.* **273**, 37-41 (1997).

156. W. Schmickler and N.J. Tao, "Measuring the inverted region of an electron transfer reaction with a scanning tunneling microscope", *Electrochim. Acta.* **42**, 2809-2815 (1997).
157. W.H. Han, E.N. Durantini, T.A. Moore, A.L. Moore, D. Gust, P. Rez, G. Leatherman, G.R. Seely, N.J. Tao, and S.M. Lindsay, "STM contrast, electron-transfer chemistry, and conduction in molecules", *J. Phys. Chem. B* **101**, 10719-10725 (1997).
158. F. Cunha, Q. Jin, N.J. Tao, and C.Z. Li, "Structural phase transition in self-assembled 1,10' phenanthroline monolayer on Au(111)", *Surf. Sci.* **389**, 19-28 (1997).
159. H.Z. Cummins, G. Li, Y.H. Hwang, G.Q. Shen, W.M. Du, J. Hernandez, and N.J. Tao, "Dynamics of supercooled liquids and glasses: Comparison of experiments with theoretical predictions", *Zeitschrift Fur Phys. B-Cond. Matt.* **103**, 501-519 (1997).
160. S. Boussaad, N.J. Tao, and R. Arechabaleta, "Structural and electron transfer properties of cytochrome c adsorbed on graphite electrode studied by in situ tapping mode AFM", *Chem. Phys. Lett.* **280**, 397-403 (1997).
161. X.W. Wang, N.J. Tao, and F. Cunha, "STM images of guanine on graphite surface and the role of tip-sample interaction", *J. Chem. Phys.* **105**, 3747-3752 (1996).
162. N.J. Tao, "Probing potential-tuned resonant tunneling through redox molecules with scanning tunneling microscopy", *Phys. Rev. Lett.* **76**, 4066-4069 (1996).
163. F. Cunha, N.J. Tao, X.W. Wang, Q. Jin, B. Duong, and J. Dagnese, "Potential-induced phase transitions in 2,2'-bipyridine and 4,4'-bipyridine, monolayers on Au(111) studied by in situ scanning tunneling microscopy and atomic force microscopy", *Langmuir* **12**, 6410-6418 (1996).
164. N.J. Tao, G. Cardenas, F. Cunha, and Z. Shi, "In-situ STM and AFM study of protoporphyrin and iron(iii) and zinc(ii) protoporphyrins adsorbed on graphite in aqueous-solutions", *Langmuir* **11**, 4445-4448 (1995).
165. M. Fuchs, H.Z. Cummins, W.M. Du, W. Gotze, A. Latz, G. Li, and N.J. Tao, "Tests of the mode-coupling theory for a molten-salt", *Philo. Mag. B-Phys. Cond. Matt. Stat. Mech. Electr. Opt. Mag. Prop.* **71**, 771-781 (1995).
166. F. Cunha and N.J. Tao, "Surface-charge induced order-disorder transition in an organic monolayer", *Phys. Rev. Lett.* **75**, 2376-2379 (1995).
167. N.J. Tao and Z. Shi, "Potential induced changes in the electronic states of monolayer guanine on graphite in nacl solution", *Surf. Sci.* **301**, L217-L223 (1994).
168. N.J. Tao and Z. Shi, "Monolayer guanine and adenine on graphite in nacl solution - a comparative stm and afm study", *J. Phys. Chem.* **98**, 1464-1471 (1994).

169. N.J. Tao and Z. Shi, "Kinetics of oxidation of guanine monolayers at the graphite-water interface studied by AFM/STM", *J. Phys. Chem.* **98**, 7422-7426 (1994).
170. N.J. Tao and Z. Shi, "Real-time STM/AFM study of electron-transfer reactions of an organic-molecule - xanthine at the graphite water interface", *Surf. Sci.* **321**, L149-L156 (1994).
171. G. Li, M. Fuchs, W.M. Du, A. Latz, N.J. Tao, J. Hernandez, W. Gotze, and H.Z. Cummins, "8-scattering study of beta-relaxation in cakno3 and salol near the liquid-glass transition - idealized and extended mode-coupling theory analysis", *J. Non-Crys. Solids* **172**, 43-51 (1994).
172. H.Z. Cummins, G. Li, W.M. Du, J. Hernandez, and N.J. Tao, "Light-scattering spectroscopy of the liquid-glass transition", *J. Phys. Cond. Matt.* **6**, A51-A62 (1994).
173. N.J. Tao, J.A. Derose, and S.M. Lindsay, "Self-assembly of molecular superstructures studied by insitu scanning tunneling microscopy - DNA bases on AU(111)", *J. Phys. Chem.* **97**, 910-919 (1993).
174. J. Pan, N. Tao, and S.M. Lindsay, "An atomic-force microscopy study of a self-assembled octadecyl mercaptan monolayer adsorbed on gold(111) under potential control", *Langmuir* **9**, 1556-1560 (1993).
175. P.I. Oden, N.J. Tao, and S.M. Lindsay, "Au(111) $2\sqrt{3}$ surface as a test surface for comparing the atomic force and scanning tunneling microscopes", *J. Vac. Sci. Tech. B* **11**, 137-140 (1993).
176. S.M. Lindsay, Y.L. Lyubchenko, N.J. Tao, Y.Q. Li, P.I. Oden, J.A. Derose, and J. Pan, "Scanning-tunneling-microscopy and atomic-force microscopy studies of biomaterials at a liquid-solid interface", *J. Vac. Sci. Tech. A* **11**, 808-815 (1993).
177. Y.Q. Li, N.J. Tao, J. Pan, A.A. Garcia, and S.M. Lindsay, "Direct measurement of interaction forces between colloidal particles using the scanning force microscope", *Langmuir* **9**, 637-641 (1993).
178. J.A. Derose, D.B. Lampner, S.M. Lindsay, and N.J. Tao, "Comparative scanning probe microscopy study of the surface-morphology of au films grown from the vapor onto glass, fused-silica, and muscovite mica", *J. Vac. Sci. Tech. A* **11**, 776-780 (1993).
179. H.Z. Cummins, W.M. Du, M. Fuchs, W. Gotze, A. Latz, G. Li, and N.J. Tao, "light-scattering spectroscopy of the liquid-glass transition - comparison with idealized and extended mode-coupling theory", *Physica A* **201**, 207-222 (1993).
180. H.Z. Cummins, W.M. Du, M. Fuchs, W. Gotze, S. Hildebrand, A. Latz, G. Li, and N.J. Tao, "Light-scattering spectroscopy of the liquid-glass transition in cakno3 and in the molecular glass salol - extended-mode-coupling-theory analysis", *Phys. Rev. E* **47**, 4223-4239 (1993).

181. N.J. Tao, J. Pan, Y. Li, P.I. Oden, J.A. Derose, and S.M. Lindsay, "Initial-stage of underpotential deposition of Pb on reconstructed and unreconstructed Au(111)", *Surf. Sci.* **271**, L338-L344 (1992).
182. N.J. Tao, S.M. Lindsay, and S. Lees, "Measuring the microelastic properties of biological-material", *Biophys. J.* **63**, 1165-1169 (1992).
183. N.J. Tao and S.M. Lindsay, "In situ scanning tunneling microscopy study of iodine and bromine adsorption on Au(111) under potential control", *J. Phys. Chem.* **96**, 5213-5217 (1992).
184. N.J. Tao and S.M. Lindsay, "Kinetics of a potential induced $\sqrt{3} \times \sqrt{3}$ to 1×1 transition of Au(111) studied by in situ scanning tunneling microscopy", *Surf. Sci.* **274**, L546-L553 (1992).
185. N.J. Tao, G. Li, and H.Z. Cummins, "Brillouin-scattering study of the liquid-glass transition in CaKNO₃ - mode-coupling analysis", *Phys. Rev. B* **45**, 686-696 (1992).
186. P.I. Oden, L.A. Nagahara, J.J. Graham, J. Pan, N.J. Tao, Y.Q. Li, T.G. Thundat, J.A. Derose, and S.M. Lindsay, "Atomic force and scanning tunneling microscopy observations of whisker crystals and surface modification on evaporated gold-films", *Ultramicroscopy* **42**, 580-586 (1992).
187. S.M. Lindsay, N.J. Tao, J.A. Derose, P.I. Oden, Y.L. Lyubchenko, R.E. Harrington, and L. Shlyakhtenko, "Potentiostatic deposition of DNA for scanning probe microscopy", *Biophys. J.* **61**, 1570-1584 (1992).
188. G. Li, W.M. Du, X.K. Chen, H.Z. Cummins, and N.J. Tao, "Testing mode-coupling predictions for alpha-relaxation and beta-relaxation in Ca_{0.4}K_{0.6}(NO₃)_{1.4} near the liquid-glass transition by light-scattering", *Phys. Rev. A* **45**, 3867-3879 (1992).
189. N.J. Tao and S.M. Lindsay, "Observations of the $2\sqrt{3} \times 2\sqrt{3}$ reconstruction of Au(111) under aqueous-solutions using scanning tunneling microscopy", *J. Appl. Phys.* **70**, 5141-5143 (1991).
190. N.J. Tao, G. Li, and H.Z. Cummins, "Brillouin-scattering study of the liquid-glass transition in supercooled aqueous lithium-chloride solutions - generalized hydrodynamics and mode-coupling analyses", *Phys. Rev. B* **43**, 5815-5830 (1991).
191. N.J. Tao, G. Li, and H.Z. Cummins, "Self-similar light-scattering spectra of beta relaxation near the liquid-glass transition", *Phys. Rev. Lett.* **66**, 1334-1337 (1991).
192. N.J. Tao, G. Li, X. Chen, W.M. Du, and H.Z. Cummins, "Low-frequency raman-scattering study of the liquid-glass transition in aqueous lithium-chloride solutions", *Phys. Rev. A* **44**, 6665-6676 (1991).

193. G. Li, X.K. Chen, N.J. Tao, H.Z. Cummins, R.M. Pick, and G. Hauret, "Brillouin-scattering studies of the transverse acoustic modes of incommensurate K_2SeO_4 ", *Phys. Rev. B* **44**, 6621-6629 (1991).
194. L. Vanhong, G. Li, N. Tao, and H.Z. Cummins, "Critical slowing down of low-frequency dielectric-relaxation in incommensurate $N(CH_3)_4 2ZnCl_4$ ", *Phys. Rev. B* **41**, 6050-6056 (1990).
195. G. Li, N. Tao, L.V. Hong, H.Z. Cummins, C. Dreyfus, M. Hebbache, R.M. Pick, and J. Vagner, "Acoustic anomaly and the landau free-energy of incommensurate K_2SeO_4 ", *Phys. Rev. B* **42**, 4406-4425 (1990).
196. S. Lees, N.J. Tao, and S.M. Lindsay, "Studies of compact hard tissues and collagen by means of brillouin light-scattering", *Conn. Tiss. Res.* **24**, 187-205 (1990).
197. N.J. Tao and S.M. Lindsay, "Structure of DNA hydration shells studied by raman-spectroscopy", *Biopolymers* **28**, 1019-1030 (1989).
198. N.J. Tao and S.M. Lindsay, "Reorientational relaxation of water-molecules in licl solution studied by depolarized rayleigh-scattering", *J. Phys. Cond. Matt.* **1**, 8709-8720 (1989).
199. T. Weidlich, S.M. Lindsay, S.A. Lee, N.J. Tao, G.D. Lewen, W.L. Peticolas, G.A. Thomas, and A. Rupprecht, "Low-frequency raman-spectra of DNA - a comparison between 2 oligonucleotide crystals and highly crystalline films of calf thymus DNA", *J. Phys. Chem.* **92**, 3315-3317 (1988).
200. N.J. Tao, S.M. Lindsay, and A. Rupprecht, "Dynamic coupling between DNA and its primary hydration shell studied by brillouin-scattering", *Biopolymers* **27**, 1655-1671 (1988).
201. N.J. Tao and S.M. Lindsay, "Coupling of acoustic phonons in licl aqueous-solutions to a relaxation mode of the ionic hydration shell and observation of central peaks in inelastic light-scattering", *J. Phys. Chem.* **92**, 5855-5857 (1988).
202. S.M. Lindsay, S.A. Lee, J.W. Powell, T. Weidlich, C. Demarco, G.D. Lewen, N.J. Tao, and A. Rupprecht, "The origin of the a to b transition in DNA fibers and films", *Biopolymers* **27**, 1015-1043 (1988).
203. N.J. Tao, S.M. Lindsay, and A. Rupprecht, "The dynamics of the DNA hydration shell at gigahertz frequencies", *Biopolymers* **26**, 171-188 (1987).
204. N.J. Tao, S.M. Lindsay, and A. Rupprecht, "Resonant microwave-absorption by dissolved DNA - comment", *Phys. Rev. Lett.* **59**, 518-518 (1987).
205. S.A. Lee, S.M. Lindsay, J.W. Powell, T. Weidlich, N.J. Tao, G.D. Lewen, and A. Rupprecht, "A brillouin-scattering study of the hydration of li-DNA and na-DNA films", *Biopolymers* **26**, 1637-1665 (1987).

206. G. Lewen, S.M. Lindsay, N.J. Tao, T. Weidlich, R.J. Graham, and A. Rupprecht, "A mechanism for the large anisotropic swelling of DNA films", *Biopolymers* **25**, 765-770 (1986).