

## CURRICULUM VITAE

### PERSONAL INFORMATION

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**Department of Chemical & Biological Engineering**

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### POSITIONS HELD

September 2004- Professor, Dept. of Chemical & Biological Engineering  
University of Colorado at Boulder

April 2004- Senior Editor, *Langmuir*

January 2001 Associate Professor, Dept. of Chemical & Biological Engineering  
-August 2004 University of Colorado

July 1998 Associate Professor, Department of Chemistry, Tulane University  
-December 2000

July 1994 Assistant Professor, Department of Chemistry, Tulane University  
-June 1998

Sept. 1992 Postdoctoral Associate, Dept. of Chemistry and Biochemistry  
-July 1994 University of California, Los Angeles with Charles M. Knobler

April 1991 Postdoctoral Associate, Dept. of Chemical and Nuclear Engineering  
-Sept. 1992 University of California, Santa Barbara with Joseph A. Zasadzinski

### EDUCATION

Ph. D. in Physics, Harvard University (Advisor: Professor Peter S. Pershan) 6/91  
A.B. *summa cum laude* in Chemistry and Physics, Harvard University 6/84

### SELECTED HONORS AND AWARDS

2010 CU-Boulder College of Engineering Faculty Research Award

2008 Boulder Faculty Assembly Award for Excellence in Research

1999 Camille Dreyfus Teacher-Scholar Award

1998 NSF/CAREER Award

1997-1999 Mortarboard Honor Society Salute for Excellence in Teaching (3 times)

1994 Camille & Henry Dreyfus Foundation New Faculty Award

1985-1986 Stone and Webster Fellowship, Harvard University

1981 Detur Prize (outstanding freshmen award), Harvard University

### SYNERGISTIC ACTIVITIES

Senior Editor (2004–present), *Langmuir*

Founding co-Director (2003–present), NSF REU Site Program in Functional Materials

Founding Director (1998–2000), Tulane Science Scholars Program

Curriculum Developer, *Creative Technology*, a course that has communicated alternative energy, biotech, and nanoscience concepts to more than 6000 non-science undergrads to date.

## LIST OF PUBLICATIONS

1. J.F. Lynch, D.K. Schwartz, and K. Sivaprasad, *J. Acoust. Soc. Am.* **78**, 575 (1985)  
"On the use of Focused Horizontal Arrays as Mode Separation and Source Location Devices in Ocean Acoustics"
2. D.K. Schwartz, A. Braslau, B. Ocko, and P.S. Pershan, *Phys. Rev. A* **38**, 5817 (1988)  
"X-ray Reflectivity Studies of a Microemulsion Surface"
3. M.L. Schlossman, D.K. Schwartz, E.H. Kawamoto, G.J. Kellogg, P.S. Pershan, B.M. Ocko, M.W. Kim, and T.C. Chung, *Mat. Res. Soc. Symp. Proc.* **177**, 351 (1990)  
"X-ray Studies of the Liquid/Vapor Interface: Water and Polymer and Fatty Acid Monolayers on Water"
4. D.K. Schwartz, M.L. Schlossman, E.H. Kawamoto, G.J. Kellogg, P.S. Pershan, and B.M. Ocko, *Phys. Rev. A* **41**, 5687 (1990)  
"Thermal Diffuse X-ray Scattering Studies of the Water/Vapor Interface"
5. G. Swislow, D. Schwartz, B.M. Ocko, and P.S. Pershan, *Phys. Rev. A* **43**, 6815 (1991)  
"X-ray Studies of the Surface and Bulk Structure of the Isotropic and Nematic Phase of a Lyotropic Liquid Crystal"
6. M.L. Schlossman, D.K. Schwartz, E.H. Kawamoto, G.J. Kellogg, P.S. Pershan, M.W. Kim, and T.C. Chung, *J. Phys. Chem.* **95**, 6628 (1991)  
"X-ray Reflectivity of a Polymer Monolayer at the Water/Vapor Interface"
7. D.K. Schwartz, P.S. Pershan, E.H. Kawamoto, G.J. Kellogg, and S. Lee, *Phys. Rev. Lett.* **66**, 1599 (1991)  
"Relaxation and the Reentrant Appearance of Phases in a Molecular Monolayer, M.L. Schlossman"
8. D.K. Schwartz, M.L. Schlossman, and P.S. Pershan, *J. Chem. Phys.*, **96**, 2356 (1992)  
"Re-entrant Appearance of Phases in a Relaxed Langmuir Monolayer of Tetracosanoic Acid as Determined by X-ray Scattering"
9. J.T. Woodward, J.A.N. Zasadzinski, and D.K. Schwartz, *Phys. Rev. Lett.*, **68**, 2563 (1992) [technical comment]  
"Alternative Method of Imaging Surface Topologies of Nonconducting Bulk Specimens"
10. D.K. Schwartz, J. Garnaes, R. Viswanathan, and J.A.N. Zasadzinski, *Scanning*, **14**, II-3 (1992)  
"Atomic Force Microscopy of the Molecular Lattice of Thin Langmuir-Blodgett Films"
11. R. Viswanathan, D.K. Schwartz, J. Garnaes, and J.A.N. Zasadzinski, *Langmuir*, **8**, 1603 (1992)  
"Atomic Force Microscopy Imaging of Substrate and pH Effects on Langmuir-Blodgett Monolayers"
12. J. Garnaes, D.K. Schwartz, R. Viswanathan, and J.A.N. Zasadzinski, *Nature*, **357**, 54 (1992)  
"Domain Boundaries and Buckling Superstructures in Langmuir-Blodgett Films"
13. D.K. Schwartz, J. Garnaes, R. Viswanathan, and J.A.N. Zasadzinski, *Science*, **257**, 508 (1992)  
"Surface Order and Stability in Langmuir-Blodgett Films"
14. D.K. Schwartz, R. Viswanathan, and J.A.N. Zasadzinski, *J. Phys. Chem.*, **96**, 10444 (1992)  
"Reorganization and Crystallite Formation in Langmuir-Blodgett Films"

15. D.K. Schwartz, S. Steinberg, J. Israelachvili, and J.A.N. Zasadzinski, *Phys. Rev. Lett.*, **69**, 3354 (1992)  
"Growth of a Self-Assembled Monolayer by Fractal Aggregation"
16. D.K. Schwartz, J. Garnaes, R. Viswanathan, S. Chiruvolu, and J.A.N. Zasadzinski, *Phys. Rev. E*, **47**, 452 (1993)  
"Quantitative Lattice Measurement of Thin Langmuir-Blodgett Films by Atomic Force Microscopy"
17. D.K. Schwartz, R. Viswanathan, and J.A. Zasadzinski, *Phys. Rev. Lett.*, **70**, 1267 (1993)  
"Commensurate Defect Superstructures in a Langmuir-Blodgett Film"
18. D.K. Schwartz, R. Viswanathan, and J.A.N. Zasadzinski, *Langmuir*, **9**, 1384 (1993)  
"Coexisting Lattice Structures in a Langmuir-Blodgett Film"
19. J. Garnaes, D.K. Schwartz, R. Viswanathan, and J.A.N. Zasadzinski, *J. Synth. Metals*, **57**, 3795 (1993)  
"Nanoscale Defects in Langmuir-Blodgett Films Observed by Atomic Force Microscopy"
20. D.K. Schwartz, *Nature*, **362**, 593 (1993) [invited editorial]  
"Pattern Formation: Instant Patterns in Thin Films"
21. R. Viswanathan, J.A.N. Zasadzinski, and D.K. Schwartz, *Science*, **261**, 449 (1993)  
"Strained-Layer van der Waals Epitaxy in a Langmuir-Blodgett Film"
22. D.K. Schwartz, R. Viswanathan, J. Garnaes, and J.A.N. Zasadzinski, *J. Am. Chem. Soc.*, **115**, 7374 (1993)  
"Influence of Cations, Alkane Chain Length, and Substrate on Molecular Order of Langmuir-Blodgett Films"
23. D.K. Schwartz and C.M. Knobler, *J. Phys. Chem.*, **97**, 8849 (1993)  
"Direct Observations of Transitions between Condensed Langmuir Monolayer Phases by Polarized Fluorescence Microscopy"
24. D.K. Schwartz, R. Viswanathan, and J.A. Zasadzinski, *Science*, **263**, 1158 (1994)  
"Examining Langmuir-Blodgett Films with Atomic Force Microscopy" [technical comment]
25. D.K. Schwartz, J. Ruiz-Garcia, X. Qiu, J.V. Selinger and C.M. Knobler, *Physica A*, **204**, 606 (1994)  
"Tilt Stripe Textures in Langmuir Monolayers of Fatty Acids"
26. J.A. Zasadzinski, R. Viswanathan, L. Madsen, J. Garnaes, D.K. Schwartz, *Science*, **263**, 1726 (1994)  
"Langmuir-Blodgett Films"
27. R. Viswanathan, J.A.N. Zasadzinski, and D.K. Schwartz, *Nature*, **368**, 440 (1994)  
"Spontaneous Chiral Symmetry-Breaking by Achiral Molecules in a Langmuir-Blodgett Film"
28. J.A. Zasadzinski, R. Viswanathan, D.K. Schwartz, J. Garnaes, L. Madsen, S. Chiruvolu, J.T. Woodward, and M.L. Longo, *Colloids and Surfaces A*, **93**, 305 (1994)  
"Applications of Atomic Force Microscopy to Structural Characterization of Organic Thin Films"

29. D.K. Schwartz, R. Viswanathan, and J.A. Zasadzinski, in "Lectures on Thermodynamics and Statistical Mechanics," eds. M. Costas, R. Rodriguez, and A.L. Benavides, p. 132 (World Scientific, Singapore) 1994. "Atomic Force Microscopy of Langmuir-Blodgett Films"
30. B. Fischer, M.-W. Tsao, J. Ruiz-Garcia, T.M. Fischer, D.K. Schwartz, and C.M. Knobler, *J. Phys. Chem.*, **98**, 7430 (1994)  
"Observation of a Change from Splay to Bend Orientation at a Phase Transition in a Langmuir Monolayer"
31. D.K. Schwartz, R. Viswanathan, and J.A. Zasadzinski *J. Chem. Phys.*, **101**, 7161 (1994)  
"Head-Tail Competition and Modulated Structures in Planar Surfactant (Langmuir-Blodgett) Films"
32. D.K. Schwartz, M.-W. Tsao and C.M. Knobler, *J. Chem. Phys.*, **101**, 8258 (1994)  
"Domain morphology in a two-dimensional anisotropic mesophase: Cusps and boojum textures in a Langmuir monolayer"
33. D.K. Schwartz, C.M. Knobler, and R. Bruinsma *Phys. Rev. Lett.*, **73**, 2841 (1994)  
"Direct Observation of Langmuir Monolayer Flow through a Channel"
34. S. Riviere, S. Hénon, J. Meunier, D.K. Schwartz, M.-W. Tsao and C.M. Knobler, *J. Chem. Phys.*, **101**, 10045 (1994)  
"Textures and Phase Transitions in Langmuir Monolayers of Fatty Acids: A Comparative Brewster Angle Microscope and Polarized Fluorescence Microscope Study"
35. R. Viswanathan, L.L. Madsen, J.A.N. Zasadzinski, and D.K. Schwartz, *Science*, **269**, 51 (1995)  
"Liquid to Hexatic to Crystalline Transition in Langmuir-Blodgett Films"
36. B. Fischer, M.-W. Tsao, J. Ruiz-Garcia, Th.M. Fischer, D.K. Schwartz, and C.M. Knobler, *Thin Solid Films*, **284-285**, 110 (1996)  
"The Blooming Transition in Langmuir Monolayers and its Microscopic Origin"
37. H.D. Sikes, J.T. Woodward IV, and D.K. Schwartz, *J. Phys. Chem.*, **100**, 9093 (1996)  
"Pattern Formation in a Substrate-Induced Phase Transition during Langmuir-Blodgett Transfer"
38. J.T. Woodward, A. Ulman, and D.K. Schwartz, *Langmuir*, **12**, 3626 (1996)  
"Self-Assembled Monolayer Growth of Octadecylphosphonic Acid on Mica"
39. M.L. Kurnaz, D.K. Schwartz, *J. Phys. Chem.*, **100**, 11113 (1996)  
"Morphology of Micro-Phase Separation in Arachidic Acid/Cadmium Arachidate Langmuir Blodgett Multilayers"
40. J.T. Woodward, and D.K. Schwartz, *J. Am. Chem. Soc.*, **118**, 7861 (1996)  
"In Situ Observation of Self-Assembled Monolayer Growth"
41. M.L. Kurnaz, D.K. Schwartz, *Langmuir*, **12**, 4971 (1996)  
"Skeletonization as a Probe of Interlayer Correlations in Langmuir Blodgett Films"
42. D.K. Schwartz, *Surf. Sci. Reports*, **27**, 241-334 (1997)  
"Langmuir-Blodgett Film Structure" [review]
43. M.L. Kurnaz, D.K. Schwartz, *Phys. Rev. E* **56**, 3378 (1997)

"Channel Flow in a Langmuir Monolayer: Unusual Velocity Profiles in a Liquid-Crystalline Mesophase"

44. H.D. Sikes, D.K. Schwartz, *Langmuir* **13**, 4704 (1997)

"A Temperature-Dependent Two-Dimensional Condensation Transition during Langmuir-Blodgett Deposition"

45. M.L. Kurnaz, D.K. Schwartz, *Journal of Rheology* **41**, 1173 (1997)

"A Technique for Direct Observation of Particles under Shear in a Langmuir Monolayer"

46. J.T. Woodward, I. Doudevski, H.D. Sikes, D.K. Schwartz, *J. Phys. Chem. B* **101**, 7535 (1997)

"Kinetics of Self-Assembled Monolayer Growth Explored via Submonolayer Coverage of Incomplete Films"

47. H.D. Sikes, D.K. Schwartz, *Science* **278**, 1604 (1997)

"Two Dimensional Melting of an Anisotropic Crystal Observed at the Molecular Level"

48. J.T. Woodward, D.K. Schwartz, *Langmuir* **13**, 6873 (1997)

"Dewetting Modes of Surfactant Solution as a Function of the Spreading Coefficient"

49. J.T. Woodward, D.K. Schwartz, *J. Vac. Sci. Technology B* **16**, 51 (1998)

"Removing Drift from Scanning Probe Microscope Images of Periodic Samples"

50. D.Y. Takamoto, E. TerOvanesyan, D.K. Schwartz, R. Viswanathan, *et al.*, *Acta Physica Polonica*, **93**, 373 (1998)

"Atomic Force Microscopy of Instabilities and Reorganization of Langmuir-Blodgett Films"

51. M. Breen, J.T. Woodward, A.W. Apblett, D.K. Schwartz, *Chem. of Materials* **10**, 710 (1998)

"Direct Evidence for an Ion by Ion Deposition Mechanism in Solution Growth of CdS Thin Films"

52. D.K. Schwartz, *Current Opinion in Colloid and Interface Science* **3**, 131 (1998)

"Scanning Probe Microscope Studies of Thermodynamic and Kinetic Processes in Ultrathin Organic Films" [invited review]

53. D. Gidalevitz, M.L. Kurnaz, O.Y. Mindyuk, B.M. Ocko, D.K. Schwartz, and P.A. Heiney, *Langmuir* **14**, 2910 (1998)

"Thermal Melting in Langmuir Films of Discotic Liquid-Crystalline Compounds"

54. D. Gidalevitz, O.Y. Mindyuk, M.R. Stetzer, P.A. Heiney, M.L. Kurnaz, D.K. Schwartz, B.M. Ocko, J.P. McCauley, Jr., and A.B. Smith, III *J. Phys. Chem. B* **102**, 6688 (1998)

"A Conformational Phase Transition in a Langmuir Film of an Amphiphilic Azacrown"

55. W.A. Hayes and D.K. Schwartz *Langmuir* **14**, 5913-5917 (1998).

"Two Stage Growth of Octadecyltrimethylammonium Bromide Monolayers at Mica from Aqueous Solution Below the Krafft Point"

56. I. Doudevski, W.A. Hayes and D.K. Schwartz *Phys. Rev. Lett.* **81**, 4927 (1998)

"Submonolayer Island Nucleation and Growth Kinetics during Self-assembled Monolayer Formation"

57. C.K.Park, F.J.Schmitt, L.Evert, D.K.Schwartz, J.N.Israelachvili, C.Knobler, *Langmuir* **15**, 202-206 (1999).

"Film Balance and Fluorescence Microscopic Investigation of the Effects of Ca<sup>2+</sup> on Mixed DMPC/DMPG Monolayers"

58. C.M. Knobler and D.K. Schwartz, *Current Opinion in Colloid and Interface Science* **4**, 46-51 (1999).  
"Langmuir and Self-assembled Monolayers" [invited review]

59. I. Doudevski and D.K. Schwartz *Phys. Rev. B* **60**, 14-17 (1999).  
"Dynamic scaling of the submonolayer island size distribution during self-assembled monolayer growth"

60. A. Ivanova, M.L. Kurnaz, and D.K. Schwartz, *Langmuir* **15**, 4622-4624 (1999).  
"Temperature and flow rate dependence of the velocity profile during channel flow of a Langmuir monolayer"

61. D.K. Schwartz and I. Doudevski, *Mat. Res. Soc. Symp. Proc.* **570**, 163-170 (1999).  
"In situ observation of scaling behavior during solution-phase growth of surfactant monolayers"

62. J.T. Woodward, H. Gwin, and D.K. Schwartz, *Langmuir*, **16**, 2957-2961 (2000)  
"Contact angles on surfaces with mesoscopic chemical heterogeneity"

63. I. Doudevski, W.A. Hayes, J.T. Woodward, D.K. Schwartz, *Coll. and Surf. A* **174**, 233-243 (2000).  
"Atomic force microscope imaging of molecular aggregation during self-assembled monolayer growth"

64. J. Ignes-Mullol and D.K. Schwartz, *Phys. Rev. Lett.* **85**, 1476 (2000).  
"Alignment of Hexatic Langmuir Monolayers under Shear"

65. A.T. Ivanova and D.K. Schwartz, *Langmuir* **16**, 9433-9438 (2000).  
"Transient Behavior of the Velocity Profile in Channel Flow of a Langmuir Monolayer"

66. I. Doudevski and D.K. Schwartz, *J. Phys. Chem. B* **104**, 9044-9047 (2000).  
"Evolution of a Steady State Island Size Distribution during Self-Assembled Monolayer Dissolution"

67. I. Doudevski and D.K. Schwartz, *Langmuir* **16**, 9381-9384 (2000).  
"Mechanisms of Self-Assembled Monolayer Desorption Determined using In Situ Atomic Force Microscopy"

68. R.M. Enmon Jr., K.C. O'Connor, D.J. Lacks, D.K. Schwartz, and R.S. Dotson, *Biotechnol. Bioeng.*, **72**, 579-591 (2001).  
"Dynamics of Spheroid Self-Assembly in Liquid-Overlay Culture of DU 145 Human Prostate Cancer Cells"

69. I. Doudevski and D.K. Schwartz, *Appl. Surface Sci.* **175-176**, 17-26 (2001).  
"Self-Assembled Monolayers in the Context of Epitaxial Film Growth"

70. C. Messerschmidt and D.K. Schwartz, *Langmuir* **17**, 462-467 (2001).  
"Growth mechanisms of octadecylphosphonic acid self-assembled monolayers on sapphire (corundum): Evidence for a quasi-equilibrium triple point"

71. D.K. Schwartz, *Ann. Rev. Phys. Chem.* **52**, 107-137 (2001).  
"Mechanisms and Kinetics of Self-Assembled Monolayer Formation"

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“Shear-induced Molecular Precession in a Hexatic Langmuir Monolayer.”
74. I. Doudevski and D.K. Schwartz, *J. Am. Chem. Soc.* **123**, 6867-6872 (2001).  
“Concentration dependence of self-assembled monolayer island nucleation and growth.”
75. A.T. Ivanova, J. Ignes-Mullol, and D.K. Schwartz, *Langmuir* **17**, 3406-3411 (2001).  
“Micro-rheology of a sheared Langmuir monolayer: Elastic recovery and inter-domain slippage.”
76. J. Ignes-Mullol and D.K. Schwartz, *Langmuir* **17**, 3017-3029 (2001).  
“Molecular Orientation in Langmuir Monolayers under Shear.”
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“Stable ordering in Langmuir-Blodgett films”
78. D.K. Schwartz, in *Encyclopedia of Materials: Science and Technology*, K.H.J. Buschow *et al.* eds. Elsevier, Oxford (2001) pp. 4392-4399.  
“Langmuir-Blodgett Films: Formation and Structure”
79. J. Ding, H.E. Warriner, J.A. Zasadzinski, D.K. Schwartz, *Langmuir* **18**, 2800-2806 (2002).  
“A Magnetic Needle Viscometer For Langmuir Monolayers”
80. R.M. Enmon Jr., K.C.O 'Connor, H. Song, D.J. Lacks, D.K. Schwartz, *Biotechnol. Bioeng.* **80**, 580-588 (2002).  
“Aggregation Kinetics of Well and Poorly Differentiated Human Prostate Cancer Cells”
81. B.M. Ocko, M. Kelly, A.T. Nikova, D.K. Schwartz, *Langmuir* **18**, 9810-9815 (2002).  
“Structure and phase behavior of mixed monolayers of saturated and unsaturated fatty acids”
82. B. Simmons, S. Li, V.T. John, G.L. McPherson, C. Taylor, D.K. Schwartz and K. Maskos, *Nanoletters* **2**, 1037-1042 (2002).  
“Spatial compartmentalization of nanoparticles into strands of a self-assembled organogel”.
83. G.B. Bantchev and D.K. Schwartz *Langmuir* **19**, 2673-2682 (2003).  
"Surface rheology of  $\beta$ -casein layers at the air/solution interface: Formation of a two-dimensional physical gel”
84. C.E. Taylor and D.K. Schwartz, *Langmuir* **19**, 2665-2672 (2003).  
"Octadecanoic acid self-assembled monolayer growth at sapphire surfaces”
85. D.M. Walba, C.A. Liberko, E. Körblova, M. Farrow, T.E. Furtak, B.C. Chow, D.K. Schwartz, A.S. Freeman, K. Douglas, S.D. Williams, A.F. Klittnick, and N.A. Clark, *Liquid Crystals*, **31**, 481-489 (2004)  
“Self-Assembled Monolayers for Liquid Crystal Alignment: Simple Preparation on Glass Using Alkyltrialkoxysilanes.”

86. J.M. Mellott, W.A. Hayes, and D.K. Schwartz, *Langmuir* **20**, 2341-2348 (2004).  
“Kinetics of Otcadecyltrimethylammonium Bromide Self-Assembled Monolayer Growth at Mica from Aqueous Solution”
87. J.M. Mellott and D.K. Schwartz, *J. Am. Chem. Soc.*, **126**, 9369-9373 (2004)  
“Supercritical Self-Assembled Monolayer Growth”
88. G.B. Bantchev and D.K. Schwartz, *Langmuir*, **20**, 11692-11697 (2004)  
“Structure of  $\beta$ -casein layers at the air/solution interface: Atomic Force Microscopy studies of transferred layers.”
89. C.R. Vessely, J.F. Carpenter, and D.K. Schwartz *Biomacromolecules*, **6**, 3334-3344 (2005)  
“Calcium-Induced Changes to Molecular Conformation and Aggregate Structure of  $\beta$ -Casein at the Air-Water Interface”
90. Mark Nelson, Nicholas Cain, Chad E. Taylor, Benjamin M. Ocko, Douglas L. Gin, Scott R. Hammond, Daniel K. Schwartz *Langmuir* **21**, 9799-9802 (2005)  
“Periodic Arrays of Interfacial Cylindrical Reverse Micelles”
91. Andrew D. Price, and Daniel K. Schwartz, *Langmuir*, **22**, 9753-9759 (2006)  
“Anchoring of a Nematic Liquid Crystal on a Wettability Gradient”
92. Nicholas Cain, Josh Van Bogaert, Douglas L. Gin, Scott R. Hammond, Daniel K. Schwartz, *Langmuir* **23**, 482487 (2007)  
“Self-Organization of a Wedge-Shaped Surfactant in Monolayers and Multilayers”
93. Andrew D. Price, and Daniel K. Schwartz, *J. Phys. Chem. B*, **111**, 1007-1015 (2007)  
“Fatty Acid Monolayers at the Nematic/Water Interface: Phases and Liquid Crystal Alignment”
94. Keith Forward, Amanda Moster, Daniel K. Schwartz, and Daniel J. Lacks, *Langmuir*, **23**, 5255-5258 (2007)  
“Contact angles of sub-millimeter particles: Connecting wettability to nanoscale surface topography”
95. Eric Karp, Cory S. Pecinovsky, Michael J. McNevin, Douglas L. Gin, and Daniel K. Schwartz, *Langmuir*, **23**, 7923-7927 (2007)  
“Langmuir Monolayers of a Photo-isomerizable Macrocycle Surfactant”
96. Siwar Trabelsi, Shishan Zhang, T. Randall Lee, Daniel K. Schwartz, *Soft Matter*, **2**, 1518-1524 (2007)  
“Swelling of a Cluster Phase in Langmuir Monolayers Containing Semi-Fluorinated Phosphonic Acids”
97. Siwar Trabelsi, Shishan Zhang, T. Randall Lee, Daniel K. Schwartz, *Phys. Rev. Lett.*, **100**, 037802 (2008)  
“Linactants: Surfactant Analogues in Two Dimensions”
98. Andrei Honciuc, Adam Harant, and Daniel K. Schwartz, *Langmuir*, **24**, 6562-6566 (2008)  
“Single-Molecule Observations of Surfactant Diffusion at the Solution-Solid Interface”
99. Andrew D. Price, and Daniel K. Schwartz, *J. Am. Chem. Soc.*, **130**, 8188-8194 (2008)  
“DNA Hybridization-Induced Reorientation of Liquid Crystal Anchoring at the Nematic Liquid Crystal/Aqueous Interface”
100. Stephanie M. Malone and Daniel K. Schwartz. *Langmuir*, **24**, 9790-9794 (2008)

- “Polar and Azimuthal Alignment of a Nematic Liquid Crystal by Alkylsilane Self-Assembled Monolayers: Effects of Chain-Length and Mechanical Rubbing”
101. Shishan Zhang, Andrew C. Jamison, Daniel K. Schwartz, and T. Randall Lee, *Langmuir*, **24**, 10204-10208 (2008)  
“Self-Assembled Monolayers Derived from a Double-Chained Monothiol Having Chemically Dissimilar Chains”
102. Andrei Honciuc, Alexander L. Howard, Daniel K. Schwartz, *J Phys Chem C* **113**, 2078-2081 (2009)  
“Single Molecule Observations of Fatty Acid Adsorption at the Silica/Water Interface: Activation Energy of Attachment”
103. Siwar Trabelsi, Shishan Zhang, Zhongcheng Zhang, T. Randall Lee, Daniel K. Schwartz, *Soft Matter* **5**, 750-758 (2009)  
“Semi-fluorinated Phosphonic Acids Form Stable Nanoscale Clusters in Langmuir-Blodgett and Self-Assembled Monolayers”
104. Steve T. Marshall, Daniel K. Schwartz, J. William Medlin, *Sensors and Actuators B: Chemical* **136**, 315-319 (2009)  
“Selective Acetylene Detection Through Surface Modification of Metal-Insulator-Semiconductor Sensors with Alkanethiolate Monolayers”
105. Andrei Honciuc, Denver Jn. Baptiste, Daniel K. Schwartz, *Langmuir* **25**, 4339-4342 (2009)  
“Hydrophobic Interaction Microscopy: Mapping the Solid/ Liquid Interface using Amphiphilic Probe Molecules”
106. Andrei Honciuc, Daniel K. Schwartz, *J. Am. Chem. Soc.* **131**, 5973-5979 (2009)  
“Probing Hydrophobic Interactions using Trajectories of Amphiphilic Molecules at a Hydrophobic/Water Interface”
107. Andrew D. Price, Jordi Ignés-Mullol, Thomas E. Furtak, Yu-an Lo, Stephanie M. Malone, and Daniel K. Schwartz, *Soft Matter*, **5**, 2252-2260 (2009)  
“Liquid Crystal Anchoring Transformations Induced by Phase Transitions of a Photoisomerizable Surfactant at the Nematic/Aqueous Interface”
108. Andrei Honciuc, Denver Jn. Baptiste, Ian P. Campbell, and Daniel K. Schwartz, *Langmuir* **25**, 7389-7392 (2009)  
“Solvent Dependence of the Activation Energy of Attachment determined by Single Molecule Observations of Surfactant Adsorption”
109. Siwar Trabelsi, Shishan Zhang, Zhongcheng Zhang, T. Randall Lee, Daniel K. Schwartz, *Langmuir* **25**, 8056-8061 (2009)  
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## **PATENTS**

1. *Methods and Devices for Detecting Nucleic Acid Hybridization*, U.S. Patent pending.
2. *Method of Preparing Immunologically-Active Adjuvant-Bound Dried Vaccine Composition*, U.S. Patent pending.
3. *Materials and Methods for Improving Selectivity in Heterogeneous Catalysts and Products Thereof*, U.S. Patent Pending