

Curriculum Vitae: Paul A. Heiney

Experience

1993-present Professor of Physics, University of Pennsylvania
2004-2009 Director, Benjamin Franklin Scholars Program,
University of Pennsylvania
1998-1999 Visiting Scientist, Naval Research Laboratory,
Washington, D.C.
1993-1998 Associate Chair for Undergraduate Affairs,
Physics Department, University of Pennsylvania
May 1991 Professeur Invité, Université de Paris-Sud, Orsay, France
1987-1993 Associate Professor of Physics, University of Pennsylvania
1982-1987 Assistant Professor of Physics, University of Pennsylvania
1977-1982 Research Assistant, Massachusetts Institute of Technology

Education

1982 Ph.D. Physics, Massachusetts Institute of Technology
Thesis: "Phase Transitions of 2D Atomic and Molecular
Crystals," directed by R. J. Birgeneau
1977 B. A. Physics, College of Creative Studies
University of California at Santa Barbara
1973 Diplôme annuel, Cours de Civilisation française
à la Sorbonne, Paris

Honorary Societies

1980 Sigma Xi
1976 Phi Beta Kappa

Professional Societies

The American Physical Society
American Association for the Advancement of Science
American Chemical Society
International Liquid Crystal Society
American Crystallographic Association

Awards and Honors

2001 Fellow, American Physical Society
1984-89 Presidential Young Investigator Award
1977-80 National Science Foundation Graduate Fellow
2011 SAS Dean's Award for Innovation in Teaching

Personal

Born: September 24, 1954
Married, one child
Citizenship: U.S.
email: heiney@sas.upenn.edu
Web page: <http://www.physics.upenn.edu/people/p.a.heiney.html>

Paul A. Heiney: Refereed Publications

1. "Melting of Submonolayer Krypton Films on Graphite," P. M. Horn, R. J. Birgeneau, P. Heiney, and E. M. Hammonds, *Phys. Rev. Lett.* **41**, 961-964 (1978).
2. "X-Ray Scattering Study of the Commensurate-Incommensurate Transition of Monolayer Krypton on Graphite," P. W. Stephens, P. Heiney, R. J. Birgeneau, and P. M. Horn, *Phys. Rev. Lett.* **43**, 47-51 (1979).
3. "Structure of Liquid and Solid Xenon on Graphite," E. M. Hammonds, P. Heiney, P. W. Stephens, R. J. Birgeneau, and P. Horn, *J. Phys. C: Solid State Physics* **13**, L301-306 (1980).
4. "X-Ray and Heat-Capacity Study of Molecular Oxygen Adsorbed on Graphite," P. W. Stephens, P. A. Heiney, R. J. Birgeneau, P. M. Horn, J. Stoltenberg, and O. E. Vilches, *Phys. Rev. Lett.* **45**, 1959-1962 (1980).
5. "High Resolution X-Ray Studies of Monolayer Krypton on Varied Forms of Graphite," R. J. Birgeneau, P. A. Heiney, and J. P. Pelz, *Physica* **109 & 110B**, 1785-1794 (1982).
6. "The Freezing Transition of Monolayer Xenon on Graphite," P. A. Heiney, R. J. Birgeneau, G. S. Brown, P. M. Horn, D. E. Moncton, and P. W. Stephens, *Phys. Rev. Lett.* **48**, 104-108 (1982).
7. "X-Ray Study of Molecular Oxygen Adsorbed on Graphite," P. A. Heiney, P. W. Stephens, S. G. J. Mochrie, J. Akimitsu, and R. J. Birgeneau, *Surface Science* **125**, 539-564 (1983).
8. "An X-Ray Study of the Structure and Freezing Transition of Monolayer Xenon on Graphite," P. A. Heiney, P. W. Stephens, R. J. Birgeneau, P. M. Horn, and D. E. Moncton, *Phys. Rev.* **B28**, 6416-6434 (1983).
9. "High Resolution Structural Study of the Commensurate-Incommensurate Transition of Monolayer Kr on Graphite," P. W. Stephens, P. A. Heiney, R. J. Birgeneau, P. M. Horn, D. E. Moncton, and G. S. Brown, *Phys. Rev.* **B29**, 3512-3532 (1984).
10. "Structure of Rapidly Quenched Al-Mn," P. A. Bancel, P. A. Heiney, P. W. Stephens, A. I. Goldman, and P. M. Horn, *Phys. Rev. Lett.* **54**, 2422-2425 (1985).
11. "Commensurate-Incommensurate Transition of Kr-Xe Mixtures on Graphite," P. W. Stephens, A. I. Goldman, P. A. Heiney, and P. A. Bancel, *Phys. Rev.* **B33**, 655-658 (1986).
12. "Icosahedral Aluminum-Transition Metal Alloys," P. A. Bancel and P. A. Heiney, *Phys. Rev.* **B33**, 7917-7922 (1986).

13. "High Resolution X-ray Scattering Study of the Multiply Reentrant Polar Mesogen DB₉ONO₂," E. Fontes, P. A. Heiney, J. N. Haseltine and A. B. Smith, III, *J. de Physique* **47**, 1533-1539 (1986).
14. "Distortions and Peak Broadening in Quasicrystal Diffraction Patterns," T. C. Lubensky, J. E. S. Socolar, P. J. Steinhardt, P. A. Bancel, and P. A. Heiney, *Phys. Rev. Lett.* **57**, 1440-1443 (1986).
15. "Extended X-ray-absorption Fine Structure Study of Al-Mn-Ru-Si Icosahedral Alloys," P. A. Heiney, P. A. Bancel, A. I. Goldman, and P. W. Stephens, *Phys. Rev.* **B34**, 6746-6751 (1986).
16. "Structure of High Stage Potassium-Intercalated Graphite," M. E. Huster, P. A. Heiney, V. B. Cajipe, and J. E. Fischer, *Phys. Rev.* **B35**, 3311-3326 (1987).
17. "Disorder in Al-Li-Cu and Al-Mn-Si Icosahedral Alloys," P. A. Heiney, P. A. Bancel, P. M. Horn, J. L. Jordan, S. LaPlaca, J. Angilello, and F. W. Gayle, *Science* **238**, 660-663 (1987).
18. "Comment on 'So-called Icosahedral and Decagonal Quasicrystals are Twins of an 820-atom Cubic Crystal,'" P. A. Heiney, P. A. Bancel, and P. M. Horn, *Phys. Rev. Lett.* **59**, 2119 (1987).
19. "Combined X-ray absorption fine structure and diffraction study of Kr adsorbed on graphite," C. A. Guryan, K. B. Lee, P. W. Stephens, A. I. Goldman, J. Z. Larese, P. A. Heiney, and E. Fontes, *Phys. Rev.* **B37**, 3461-3466 (1988).
20. "Molecular Disorder in Columnar-Phase Discotic Liquid-Crystal Strands," E. Fontes, P. A. Heiney, M. Ohba, J. N. Haseltine, and A. B. Smith, III, *Phys. Rev.* **A37**, 1329-1334 (1988).
21. "An NMR Study of Li in AlLiCu Icosahedral Alloys," C. Lee, D. White, B. H. Suits, P. A. Bancel, and P. A. Heiney, *Phys. Rev.* **B37**, 9053-9056 (1988).
22. "Strong Incommensurate Fluctuations in a Smectic-A Phase," E. Fontes, P. A. Heiney, P. Barois, and A. M. Levelut, *Phys. Rev. Lett.* **60**, 1138-1141, **61**, 1042 (1988).
23. "Liquid Crystalline and Helical Order in a Discotic Mesophase," E. Fontes, P. A. Heiney, and W. H. de Jeu, *Phys. Rev. Lett.* **61**, 1202-1205 (1988).
24. "Icosahedral Quasicrystals of Intermetallic Compounds are Icosahedral Twins of Cubic-Crystals of 3 Kinds, Consisting of Large (About 500 Atoms) Icosahedral Complexes in Either A Cubic Body-Centered or a Cubic Face-Centered Arrangement or Smaller (About 1350 Atoms) Icosahedral Complexes in the Beta-Tungsten Arrangement—Comment on a Paper by L. Pauling," P. A. Bancel, P. A. Heiney, P. M. Horn, and P. J. Steinhardt, *Proc. Nat. Acad. Sci. U.S.A.* **86**, 8600-8601 (1989).

25. "Reentrant Isotropic Phase in a Discotic Liquid Crystal Mixture," W. K. Lee, B. A. Wintner, E. Fontes, P. A. Heiney, M. Ohba, J. N. Haseltine, and A. B. Smith, III, *Liq. Cryst.* **4**, 87-102 (1989).
26. "X-ray, Neutron, and Electron Diffraction Study of the Incommensurate Structure in Single Crystals of Superconducting $\text{Bi}_{2.2}\text{Sr}_{1.9}\text{CaCu}_2\text{O}_{8+x}$," J. E. Fischer, P. A. Heiney, P. K. Davies, and D. Vaknin, *Phys. Rev.* **B39**, 2752-2755 (1989).
27. "In-situ study of staging disorder in cesium-intercalated graphite," V. B. Cajipe, P. A. Heiney, and J. E. Fischer, *Phys. Rev.* **B39**, 4374-4385 (1989).
28. "Frustration and helicity in the ordered phases of a discotic compound," P. A. Heiney, E. Fontes, W. H. de Jeu, A. Riera, P. Carroll, and A. B. Smith, III, *J. de Physique* **50**, 461-483 (1989).
29. "Structure of Decagonal Al_6Pd ," S. H. J. Idziak and P. A. Heiney, *Phil. Mag.* **61**, 819-838 (1990).
30. "Smectic-smectic phase transitions in binary liquid-crystalline mixtures of DB_5T_8 ," E. Fontes, W. K. Lee, P. A. Heiney, G. Nounesis, C. W. Garland, A. Riera, J. P. McCauley, Jr., and A. B. Smith, III, *J. Chem. Phys.* **90**, 3917-3929 (1990).
31. "Fourier Transform Infrared Study of Two Truxene-based Discotic Liquid Crystals," W. K. Lee, P. A. Heiney, M. Ohba, J. N. Haseltine, and A. B. Smith, III, *Liq. Cryst.* **8**, 839-850 (1990).
32. "Fourier Transform Infrared Absorption Study of Hexa(hexylthio)triphenylene: a Discotic Liquid Crystal," W. K. Lee, P. A. Heiney, J. P. McCauley, Jr., and A. B. Smith, III, *Mol. Cryst. Liq. Cryst.* **198**, 273-284 (1991).
33. "Channel structures in alkali-doped conjugated polymers: Broken-symmetry two-dimensional intercalation superlattices," P. A. Heiney, J. E. Fischer, D. Djurado, J. Ma, D. Chen, M. J. Winokur, N. Coustel, P. Bernier, and F. E. Karasz, *Phys. Rev.* **B44**, 2507-2515 (1991).
34. "Compressibility of Solid C_{60} ," J. E. Fischer, P. A. Heiney, A. R. McGhie, W. R. Romanow, A. M. Denenstein, J. P. McCauley, Jr., and A. B. Smith, III, *Science* **252**, 1288-1290 (1991).
35. "Structure and Mesophases of Hexacyclen Derivatives," S. H. J. Idziak, N. C. Maliszewskyj, P. A. Heiney, J. P. McCauley, Jr., P. A. Sprengler, and A. B. Smith, III, *J. Am. Chem. Soc.* **113**, 7666-7672 (1991).
36. "Orientational Ordering Transition in Solid C_{60} ," P. A. Heiney, J. E. Fischer, A. R. McGhie, W. J. Romanow, A. M. Denenstein, J. P. McCauley Jr., A. B. Smith III, and D. E. Cox, *Phys. Rev. Lett.* **66**, 2911-2914 (1991).

37. "Low Energy Helium Diffraction Studies of C₂ Overlayers Physisorbed on NaCl(001)," G. Liu, G. N. Robinson, G. Scoles, and P. A. Heiney, *Surface Science* **262**, 409-421 (1992).
38. "Response to Comment on 'Orientational Ordering Transition in Solid C₆₀'," P. A. Heiney, J. E. Fischer, A. R. McGhie, W. J. Romanow, A. M. Denenstien, J. P. McCauley Jr., A. B. Smith III, and D. E. Cox, *Phys. Rev. Lett.* **67**, 1468 (1991).
39. "Electronic Properties of Nitrogen-Doped Graphite Flakes," Dong-Pyo Kim, C. L. Lin, T. Mihalisin, P. A. Heiney, and M. M. Labes, *Chem. of Mat.* **3**, 686-692 (1991).
40. "Hexagonal Order in Some Mesophases of Hexacyclene Derivatives," S. H. J. Idziak, N. C. Maliszewskyj, G. B. M. Vaughan, P. A. Heiney, C. Mertesdorf, H. Ringsdorf, J. P. McCauley, Jr., and A. B. Smith, III, *J. Chem. Soc. Chem. Commun.*, 98-99 (1992).
41. "Self-organization of discogenic molecules at the air-water interface," N. C. Maliszewskyj, P. A. Heiney, J. K. Blasie, J. P. McCauley, Jr., and A. B. Smith, III, *J. Phys. II France* **2**, 75-85 (1992).
42. "Conductivity and Structure of a Liquid Crystalline Organic Conductor," G. B. M. Vaughan, P. A. Heiney, J. P. McCauley, Jr., and A. B. Smith, III, *Phys. Rev.* **B46**, 2787-2791 (1992).
43. "Orientational Disorder in Solvent-Free Solid C₇₀," G. B. M. Vaughan, P. A. Heiney, J. E. Fischer, D. E. Luzzi, D. A. Ricketts-Foot, A. R. McGhie, Y. W. Hui, A. L. Smith, D. E. Cox, W. J. Romanow, B. H. Allen, N. Coustel, J. P. McCauley, Jr., and A. B. Smith, III, *Science* **254**, 1350-1353 (1991).
44. "Compressibility of M₃C₆₀ Fullerene Superconductors: Correlation between T_c and Lattice Constant," O. Zhou, G. B. M. Vaughan, Q. Zhu, J. E. Fischer, P. A. Heiney, N. Coustel, J. P. McCauley, Jr., and A. B. Smith, III, *Science* **255**, 833-835 (1992).
45. "Discontinuous Volume Change at the Orientational Ordering Transition in Solid C₆₀," P. A. Heiney, G. B. M. Vaughan, J. E. Fischer, N. Coustel, D. E. Cox, J. R. D. Copley, D. A. Neumann, W. A. Kamitakahara, K. M. Creegan, D. M. Cox, J. P. McCauley, Jr., and A. B. Smith, III, *Phys. Rev.* **B45**, 4544-4547 (1992).
46. "Solid-State Chemistry of Fullerene-Based Materials," J. E. Fischer, P. A. Heiney, and A. B. Smith, III, *Accounts of Chem. Res.* **25**, 112-118 (1992) (**invited review**).
47. "Structure, Dynamics, and Ordering Transition of Solid C₆₀," P. A. Heiney, *J. Phys. Chem. Solids* **53**, 1333-1352 (1992) (**invited review**). Reprinted in *The Fullerenes*, eds. Harold W. Kroto, John E. Fischer, David E. Cox; Pergamon (Oxford, New York), 1993, pp.163-182.
48. "The Orientational Phase Transition in Solid Buckminsterfullerene Epoxide (C₆₀O)," G. B. M. Vaughan, P. A. Heiney, D. E. Cox, A. R. McGhie, D. R. Jones, R. M. Strongin, M. A. Cichy and A. B. Smith, III, *Chem. Phys.* **168**, 185-193 (1992).

49. "Phase Diagram of Hexa-*n*-Alkylthiotriphenylenes," S. H. J. Idziak, P. A. Heiney, J. P. McCauley, Jr., P. Carroll, and A. B. Smith, III, *Mol. Cryst. Liq. Cryst. Lett.* **237**, 271-277 (1993).
50. "Langmuir Films of C₆₀, C₆₀O, and C₆₁H₂," N. C. Maliszewskyj, P. A. Heiney, D. R. Jones, R. Strongin, M. A. Cichy, and A. B. Smith, III, *Langmuir* **9**, 1439-1441 (1993).
51. "Structure of Langmuir-Blodgett Films of Disk-Shaped Molecules Determined by Atomic Force Microscopy," J. Y. Josefowicz, N. C. Maliszewskyj, S. H. J. Idziak, P. A. Heiney, J. P. McCauley, Jr., and A. B. Smith, III, *Science* **260**, 323-326 (1993).
52. "Pseudo-Epitaxial C₆₀ Films Prepared by a Hot-Wall Method," J. E. Fischer, E. Werwa, and P. A. Heiney, *Appl. Phys.* **A56** 193-196 (1993).
53. "Existence of High-Order Superlattices in Orientationally-Ordered C₆₀," J. E. Fischer, D. E. Luzzi, K. Kniaz, A. R. McGhie, D. A. Ricketts-Foot, W. R. Romanow, G. B. M. Vaughan, P. A. Heiney, D. Li, A. L. Smith, R. M. Strongin, M. A. Cichy, L. Brard, and A. B. Smith, III, *Phys. Rev.* **B47**, 14614 (1993).
54. "Liquid Crystalline Hexaamides and Side Chain Polysiloxanes of Azacrown [18]N₆," M. Zhao, W. T. Ford, S. H. J. Idziak, N. C. Maliszewskyj, and P. A. Heiney, *Liq. Cryst.* **16**, 583-599 (1994).
55. "Structural Phase Transitions and Orientational Ordering in C₇₀," G. B. M. Vaughan, P. A. Heiney, D. E. Cox, J. E. Fischer, A. R. McGhie, A. L. Smith, R. M. Strongin, M. A. Cichy, and A. B. Smith, III, *Chem. Phys.* **178** 599-613 (1993).
56. "Liquid Crystalline Octa-(2-ethylhexyloxy) Platinum and Lead Phthalocyanines," W. T. Ford, L. Sumner, W. Zhu, Y. H. Chang, P.-J. Um, K. H. Choi, P. A. Heiney, and N. C. Maliszewskyj, *New J. Chem* **18**, 495-505 (1994).
57. "Molecular Orientational Dynamics in Solid C₇₀: Investigation by One- and Two-Dimensional Magic Angle Spinning Nuclear Magnetic Resonance," R. Tycko, G. Dabagh, G. B. M. Vaughan, P. A. Heiney, R. M. Strongin, M. A. Cichy, and A. B. Smith, III, *J. Chem. Phys.* **99**, 7554-7564 (1993).
58. "Unexpected Square Symmetry Seen by Atomic Force Microscopy in Bilayer Films of Disklike Molecules," N. C. Maliszewskyj, P. A. Heiney, J. Y. Josefowicz, J. P. McCauley, Jr., and A. B. Smith, III, *Science* **264**, 77-79 (1994).
59. "Structure and Phase Transition of the 6,5-Annulene Isomer of C₆₁H₂," A. N. Lommen, P. A. Heiney, G. B. M. Vaughan, P. W. Stephens, D. F. Liu, D. Li, A. L. Smith, A. R. McGhie, R. M. Strongin, L. Brard, and A. B. Smith, III, *Phys. Rev.* **B49**, 12572-12577 (1994).
60. "Phase Transitions in Solid C₇₀: Supercooling, Metastable Phases and Impurity Effect," A. R. McGhie, J. E. Fischer, P. A. Heiney, P. W. Stephens, R. L. Cappelletti, D.

- A. Neumann, W. H. Mueller, H. Mohn and H.-U. ter Meer, Phys. Rev. **B49**, 12614-12618 (1994).
61. "X-ray Structural Studies of Epitaxial Yttrium Silicide on Si(111)," L. J. Martínez-Miranda, J. J. Santiago-Avilés, W. R. Graham, P. A. Heiney, and M. P. Siegal, J. Mater. Res. **9**, 1434-1440 (1994).
 62. "X-ray Powder Diffraction Structure of Triclinic $C_{60}Br_{24}(Br_2)_2$," R. E. Dinnebier, P. W. Stephens, J. K. Carter, A. N. Lommen, P. A. Heiney, A. R. McGhie, L. Brard, and A. B. Smith, III, J. Appl. Cryst. **28**, 327-334 (1995).
 63. "Diffuse X-ray Scattering from Freely Suspended Strands of a Discotic Liquid Crystal," P. Davidson, M. Clerc, S. S. Ghosh, N. C. Maliszewskyj, P. A. Heiney, J. Hynes, Jr., and A. B. Smith, III, J. Phys. France II **5**, 249-262 (1995).
 64. "Formation of a Hexagonal Columnar Mesophase by N-Acylated Polyethyleneimine," H. Fischer, S. S. Ghosh, P. A. Heiney, N. C. Maliszewskyj, T. Plesniviy, H. Ringsdorf, and M. Seitz, Angew. Chem. Int. Ed. Engl. **7**, 795-798 (1995).
 65. "Structure of Langmuir Blodgett Films of Star-Shaped Oligomeric Discogens," N. C. Maliszewskyj, P. A. Heiney, J. Y. Josefowicz, T. Plesniviy, H. Ringsdorf, and P. Schuhmacher, Langmuir **11**, 1666-1674 (1995).
 66. "Fluoroalkylated Discotic Liquid Crystals," U. Dahn, C. Erdelen, H. Ringsdorf, R. Festag, J. H. Wendorff, P. A. Heiney, and N. C. Maliszewskyj, Liq. Cryst. **19**, 759-764 (1995).
 67. "Structure, Dynamics, and Phase Transitions in the Fullerene Derivatives $C_{60}O$ and $C_{61}H_2$," C. Meingast, G. Roth, L. Pintschovius, R. H. Michel, C. Stoermer, M. M. Kappes, P. A. Heiney, L. Brard, R. M. Strongin, and A. B. Smith, III, Phys. Rev. **B54**, 124-131 (1996).
 68. "Thermal stability of solid C_{60} ," M. R. Stetzer, P. A. Heiney, J. E. Fischer, and A. R. McGhie, Phys. Rev. **B55**, 127-131 (1997).
 69. "Complex Ordering in Thin Films of Di- and Tri-Functionalized Hexaalkoxy-Triphenylene Derivatives," P. Henderson, D. Beyer, U. Jonas, O. Karthaus, H. Ringsdorf, P. A. Heiney, N. C. Maliszewskyj, S. S. Ghosh, O. Y. Mindyuk, and J. Y. Josefowicz, J. Am. Chem. Soc. **119** 4740-4748 (1997).
 70. "Structure of Discotic Liquid Crystalline Compounds at the Air-Water Interface," D. Gidalevitz, O. Y. Mindyuk, P. A. Heiney, B. M. Ocko, P. Henderson, H. Ringsdorf, N. Boden, R. J. Bushby, P. S. Martin, J. Strzalka, J. P. McCauley, Jr., and A. B. Smith, III, J. Phys. Chem. B **101**, 10870-10875 (1997).
 71. "Thermal Melting in Langmuir Films of Discotic Liquid Crystalline Compounds," D. Gidalevitz, O. Y. Mindyuk, P. A. Heiney, B. M. Ocko, M. L. Kurnaz and D. K. Schwartz, Langmuir **14**, 2910-2915 (1998).

72. "Multilayer Formation in an Azacrown [18]N₆ Langmuir Film," P. A. Heiney, D. Gidalevitz, N. C. Maliszewskyj, S. Satija, D. Vaknin, D. Pan, and W. T. Ford, *Chemical Communications*, **1998** 1483-1484.
73. "High Resolution X-ray Diffraction Study of a Tubular Liquid Crystal," O. Y. Mindyuk, M. R. Stetzer, P. A. Heiney, J. C. Nelson and J. S. Moore, *Adv. Mater.* **10**, 1363-1366 (1998).
74. "Structural Phase Transition in Ultrathin Films of Disk-Shaped Molecules," N. C. Maliszewskyj, O. Y. Mindyuk, P. A. Heiney, J. Y. Josefowicz, P. Schuhmacher, and H. Ringsdorf, *Liquid Crystals* **26**, 31-36 (1999).
75. "A Conformational Phase Transition in a Langmuir Film of an Amphiphilic Azacrown," 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**, 6688-6691 (1998).
76. "Structure of a Phenylacetylene Macrocycle at the Air-Water Interface," O. Y. Mindyuk, M. R. Stetzer, D. Gidalevitz, P. A. Heiney, J. C. Nelson and J. S. Moore, *Langmuir* **15**, 6897-6900 (1999).
77. "Langmuir Films of Amphiphilic Crown Ethers," P. A. Heiney, M. R. Stetzer, O. Y. Mindyuk, E. DiMasi, A. R. McGhie, H. Liu, and A. B. Smith, III, *J. Phys. Chem. B* **103**, 6206-6214 (1999).
78. "Structure and Growth of Chromophore-Functionalized 3-Aminopropyltriethoxysilane Self-Assembled on Silicon," P. A. Heiney, K. Grüneberg, J. Y. Fang, C. Dulcey and R. Shashidhar, *Langmuir* **16**, 2651-2657 (2000).
79. "Liquid Crystals with Large Induced Tilt Angle and Small Layer Contraction," M. S. Spector, P. A. Heiney, J. Naciri, B. T. Weslowski, D. B. Holt, and R. Shashidhar, *Phys. Rev. E* **61**, 1579-1584 (2000).
80. "Network Growth in the Flocculation of Concentrated Colloidal Silica Dispersions," P. A. Heiney, R. J. Butera, J. D. Londono, R. V. Davidson, and S. Mazur, *J. Phys. Chem. B* **104**, 8807-8821 (2000).
81. "Structure and phase transitions of the 6,6-cyclopropane isomer of C₆₁H₂," M. R. Stetzer, P. A. Heiney, P. W. Stephens, R. E. Dinnebier, Q. Zhu, A. R. McGhie, R. M. Strongin, B. M. Brandt, and A. B. Smith, III, *Phys. Rev. B* **62**, 9305-9316 (2000).
82. "X-ray Reflectivity Study of Langmuir Films of Amphiphilic Monodendrons," W.-J. Pao, M. R. Stetzer, P. A. Heiney, W.-D. Cho and V. Percec, *J. Phys. Chem. B*, **105**, 2170-2176 (2001).
83. "Template-Directed Convective Assembly of 3D Face-Centered-Cubic Colloidal Crystals," J. Zhang, A. Alsayed, S. Sanyal, F. Zhang, W.-J. Pao, V. S. K. Balagurusamy, P. A. Heiney, and A. G. Yodh, *Appl. Phys. Lett.* **81**, 3176-3178 (2002).

84. "Grazing Incidence X-ray Diffraction Study of Langmuir Films of Amphiphilic Monodendrons," W. J. Pao, F. Zhang, P. A. Heiney, W.-D. Cho, C. Mitchell, V. Percec, *Phys. Rev. E* **67**, 021601 (2003) (6 pages).
85. "Self-organization of supramolecular helical dendrimers into complex electronic materials," V. Percec, M. Glodde, T. K. Bera, Y. Miura, I. Shiyankovskaya, K. D. Singer, V. S. K. Balagurusamy, P. A. Heiney, I. Schnell, A. Rapp, H.-W. Spiess, S. D. Hudson, and H. Duan, *Nature* **419**, 384-387 (2002).
86. "Hierarchical Self-Assembly, Co-Assembly and Self-Organization of Novel Liquid Crystalline Lattices and Superlattices from a Twin-Tapered Dendritic Benzamide and its Four-Cylindrical Bundle Supramolecular Polymer," V. Percec, T. K. Bera, M. Glodde, Q. Fu, V. S. K. Balagurusamy, and P. A. Heiney, *Chem. Eur. J.* **9**, 921-935 (2003).
87. "Hydroxylated Secondary Dopants for Surface Resistance Enhancement in Transparent Poly (3,4 Ethylenedioxythiophene)-Poly (Styrenesulfonate) Thin Films," B. D. Martin, N. Nikolov, S. Pollack, A. Sapirgin, R. Shashidhar, F. Zhang and P. A. Heiney, *Synthetic Metals* **142** 187193 (2004).
88. "Synthesis, structural analysis, and visualization of poly (2ethynyl-9-substituted carbazole)s and poly (3-ethynyl-9-substituted carbazole)s containing chiral and achiral minidendritic substituents," V. Percec, M. Obata, J. G. Rudick, B. B. De, M. Glodde, T. K. Bera, S. N. Magonov, V. S. K. Balagurusamy, and P. A. Heiney, *J. Polym. Sci. A-Polymer Chemistry* **40**, 3509-3533 (2002).
89. "Transformation of a spherical supramolecular dendrimer into a pyramidal columnar supramolecular dendrimer mediated by the fluorophobic effect," V. Percec, M. Glodde, G. Johansson, V. S. K. Balagurusamy, and P. A. Heiney *Angew. Chem. Int. Edn* **42**, 43384342 (2003).
90. "Self-assembly of amphiphilic dendritic dipeptides into helical pores," V. Percec, A. E. Dulcey, V. S. K. Balagurusamy, Y. Miura, J. Smidrkal, M. Peterca, S. Numelin, U. Edlund, S. D. Hudson, P. A. Heiney, H. Duan, S. N. Magonov, and S. A. Vinogradov *Nature* **430**, 764-768 (2004).
91. "Designing libraries of first generation AB(3) and AB(2) self-assembling dendrons via the primary structure generated from combinations of (AB)(y)-AB(3) and (AB)(y)-AB(2) building blocks," V. Percec, C. M. Mitchell, W. D. Cho, S. Uchida, M. Glodde, G. Ungar, X. B. Zeng, Y. S. Liu, V. S. K. Balagurusamy, and P. A. Heiney, *J. Am. Chem. Soc.* **126**, 6078-6094 (2004).
92. "Single-walled carbon nanotubes in superacid: X-ray and calorimetric evidence for partially ordered H₂SO₄," W. Zhou, J. E. Fischer, P. A. Heiney, H. Fan, V. A. Davis, M. Pasquali, and R. E. Smalley, *Phys. Rev. B* **52**, 045440 (5 pp.) (2005).
93. "Single-walled carbon nanotube-templated crystallization of H₂SO₄: direct evidence for protonation," W. Zhou, P. A. Heiney, H. Fan, R. E. Smalley and J. E. Fischer, *J. Am. Chem. Soc.* **127**, 1640-1641 (2005).

94. "Self-assembly of amphiphilic calix[4]arenes in aqueous solution," M. Strobel, K. Kitatokarczyk, A. Taubert, C. Vebert, P. A. Heiney, M. Chami, and W. Meier, *Adv. Funct. Mater.* **16**, 252259 (2006).
95. "Aggregation Behavior and Liquid Crystal Properties of an Anionic Monoazo Dye," V. R. Horowitz, L. A. Janowitz, A. L. Modic, P. A. Heiney, and P. J. Collings, *Phys. Rev. E.* **72** 041710 (10 pages) (2005).
96. "The Internal Structure of Helical Pores Self-Assembled from Dendritic Dipeptides is Stereochemically Programmed and Allosterically Regulated," V. Percec, A. Dulcey, M. Peterca, M. Ilies, P. A. Heiney, *Angew. Chem.* **44**, 6516-6521 (2005).
97. "Structure of high weight fraction single wall carbon nanotube suspensions and gels," L. A. Hough, M. F. Islam, B. Hammouda, A. G. Yodh, P. A. Heiney, *Nano Letters* **6**, 313-317 (2006).
98. "Structure of nematic liquid crystalline elastomers under uniaxial deformation," F. Zhang, P. A. Heiney, A. Srinivasan, J. Naciri, and B. Ratna, *Phys. Rev. E.* **73** 021701 (8 pages) (2006).
99. "Self-Assembly of Semifluorinated Janus-Dendritic Benzamides into Bilayered Pyramidal Columns," V. Percec, M. R. Imam, T. K. Bera, V. S. K. Balagurusamy, M. Peterca, P. A. Heiney, *Angew. Chem. Int. Ed. Eng.* **44** 4739-4745 (2005).
100. "Toward Reconciling STEM and SAXS Data from Ionomers by Investigating Gold Nanoparticles," N. M. Benetatos, B. W. Smith, P. A. Heiney, K. I. Winey, *Macromolecules* **38**, 9251-9257 (2005).
101. "Thermoreversible CisCisoidal to CisTransoidal Isomerization of Helical Dendronized Polyphenylacetylenes," V. Percec, J. G. Rudick, M. Peterca, M. Wagner, M. Obata, C. M. Mitchell, W.-D. Cho, V. S. K. Balagurusamy, and P. A. Heiney, *J. Am. Chem. Soc.* **127**, 15257-15264 (2005).
102. "Programming the Internal Structure and Stability of Helical Pores Self-Assembled from Dendritic Dipeptides via the Protective Groups of the Peptide," V. Percec, A. E. Dulcey, M. Peterca, M. Ilies, M. J. Sienkowska and P. A. Heiney, *J. Am. Chem. Soc.* **127**, 17902-17909 (2005).
103. "Principles of Self-Assembly of Helical Pores from Dendritic Dipeptides," V. Percec, A. E. Dulcey, M. Peterca, M. Ilies, S. Nummelin, M. J. Sienkowska and P. A. Heiney, *Proc. Nat. Acad. Sci* **103** 2518-2523 (2006).
104. "Self-Assembly, Structural and Retrostructural Analysis of Dendritic Dipeptide Pores Undergoing Reversible Symmetric to Asymmetric Shape Change," M. Peterca, V. Percec, A. E. Dulcey, S. Nummelin, S. Korey, M. Ilies, and P. A. Heiney, *J. Am. Chem. Soc.* **128**, 6713-6720 (2006).

105. "Reconciling STEM and X-ray Scattering Data from Poly (styrene-ran-methacrylic acid) Ionomers: Ionic Aggregate Size," N. Benetatos, P. A. Heiney, and K. I. Winey, *Macromolecules* **39**, 5174-5176 (2006).
106. "Thermotropic Mesogenic Properties of Soft Materials Bearing Carboxylate-supported μ 4-oxo Tetracupric Clusters," R. Shakya, P. H. Keyes, M. J. Heeg, A. Mousawell, P. A. Heiney, and C. N. Verani, *Inorganic Chemistry* **45**, 7587-7589 (2006).
107. "Exploring and expanding the structural diversity of self-assembling dendrons through combinations of AB, constitutional isomeric AB(2), and AB(3) biphenyl-4-methyl ether building blocks," V. Percec, M. N. Holerca, S. Nununelin, J. L. Morrison, M. Glodde, J. Smidrkal, M. Peterca, B. M. Rosen, S. Uchida, V. S. K. Balagurusamy, M. L. Sienkowska, P. A. Heiney, *Chem. Eur. J.* **12**, 6216-6241 (2006).
108. "Self-assembly of semifluorinated dendrons attached to electron-donor groups mediates their pi-stacking via a helical pyramidal column," V. Percec, M. Glodde, M. Peterca, A. Rapp, I. Schnell, H. W. Spiess, T. K. Bera, Y. Miura, V. S. K. Balagurusamy, E. Aqad, P. A. Heiney, *Chem. Eur. J.* **12**, 6298-6314 (2006).
109. "Synthesis, structural analysis, and visualization of a library of dendronized polyphenylacetylenes," V. Percec, J. G. Rudick, M. Peterca, S. R. Staley, M. Wagner, M. Obata, C. M. Mitchell, W. D. Cho, V. S. K. Balagurusamy, J. N. Lowe, M. Glodde, O. Weichold, K. J. Chung, N. Ghionni, S. N. Magonov, P. A. Heiney, *Chem. Eur. J.* **12**, 5731-5746 (2006).
110. "Liquid Crystalline derivatives of tetraaryl derivatives of benzo[c]cinnoline, tetraazapyrene, phenanthrene, and pyrene: The effect of heteroatom and substitution pattern on phase stability," M. J. Sienkowska, J. M. Farrar, F. Zhang, S. Kusuma, P. A. Heiney, and P. Kaszynski, *J. Mater. Chem.* **17**, 1399-1411 (2007).
111. "Effects of hydrophilic and hydrophobic gold nanoclusters on the stability and ordering of bolaamphiphilic liquid crystals," H. Qi, A. Lepp, P. A. Heiney, and T. Hegmann, *J. Mater. Chem.* **20**, 2139-2144 (2007).
112. "Steric communication of chiral information observed in dendronized polyacetylenes," V. Percec, E. Aqad, M. Peterca, J. G. Rudick, L. Lemon, J. C. Ronda, B. B. De, P. A. Heiney, E. W. Meijer, *J. Am. Chem. Soc.* **128**, 16365-16372 (2006).
113. "Millimeter-scale assembly of CdSe nanorods into smectic superstructures by solvent drying kinetics," C. Querner, M. D. Fischbein, P. A. Heiney, and M. Drndic, *Adv. Mat.* **20**, 2308-2314 (2008).
114. "Bent-core LC decorated gold nanoclusters: Synthesis, self-assembly, and effects in mixtures with bent-core LC hosts," V. M. Marx, H. Girgis, P. A. Heiney, and T. Hegmann, *J. Mater. Chem.* **18**, 2983-2994 (2008).
115. "Thixotropic twin-dendritic organogelators," Percec V., Peterca M., Yurchenko M.E., Rudick J.G., Heiney P.A., *Chem. Eur. J.* **14**, 909-918 (2008).

116. "Self-assembling phenylpropyl ether dendronized helical polyphenylacetylenes," Percec V., Peterca M., Rudick J.G., Aqad E., Imam M.R., Heiney P.A., *Chem. Eur. J.* **13**, 9572-9581 (2007).
117. "Synthesis, structural, and retrostructural analysis of helical dendronized poly (1-naphthylacetylene)s," Percec V., Rudick J.G., Peterca M., Aqad E., Imam M.R., Heiney P.A., *J. Polymer Sci. A-Polymer Chemistry* **45**, 4974-4987 (2007).
118. "Selective transport of water mediated by porous dendritic dipeptides," Kaucher M.S., Peterca M., Dulcey A.E., Kim A.J., Vinogradov S.A., Hammer D.A., Heiney P.A., Percec V., *J. Am. Chem. Soc.* **129**, 11698 (2007).
119. "Expanding the structural diversity of self-assembling dendrons and supramolecular dendrimers via complex building blocks," Percec V., Won B.C., Peterca M., Heiney P.A., *J. Am. Chem. Soc.* **129**, 11265-11278 (2007).
120. "Helical pores self-assembled from homochiral dendritic dipeptides based on L-Tyr and nonpolar alpha-amino acids," Percec V., Dulcey A.E., Peterca M., Adelman P., Samant R., Balagurusamy V.S.K., Heiney P.A., *J. Am. Chem. Soc.* **129**, 5992-6002 (2007).
121. "Self-assembly of hybrid dendrons with complex primary structure into functional helical pores," Percec V., Smidrkal J., Peterca M., Mitchell C.M., Nummelin S., Dulcey A.E., Sienkowska M.J., Heiney P.A., *Chem. Eur. J.* **13**, 3989-4007 (2007).
122. "Self-assembly of semifluorinated minidendrons attached to electron-acceptor groups into pyramidal columns," Percec V., Aqad E., Peterca M., Imam M.R., Glodde M., Bera T.K., Miura Y., Balagurusamy V.S.K., Ewbank P.C., Wurthner F., Heiney P.A., *Chem. Eur. J.* **13**, 3330-3345 (2007).
123. "Hollow Spherical Supramolecular Dendrimers," V. Percec, M. Peterca, A. E. Dulcey, M. R. Imam, S. D. Hudson, S. Nummelin, P. Adelman, Paul A. Heiney, *J. Am. Chem. Soc.* **130**, 13079-13094 (2008).
124. "Influence of the Apical Ligand in the Thermotropic Mesomorphism of Cationic Copper-Based Surfactants," J. A. Driscoll, P. H. Keyes, M. J. Heeg, P. A. Heiney, and C. N. Verani, *Inorg. Chem.* **47**, 7225-7232 (2008).
125. "Self-Assembly of Dendritic Crowns into Chiral Supramolecular Spheres," V. Percec, M. Imam, M. Peterca, D. Wilson, P. A. Heiney, *J. Am. Chem. Soc.* **131**, 1294-1304 (2009).
126. "Self-Assembly of Dendronized Triphenylenes Into Helical Pyramidal Columns and Chiral Spheres," V. Percec, M. R. Imam, M. Peterca, D. Wilson, R. Graf, H. W. Spiess, V. S. K. Balagurusamy, and P. A. Heiney, *J. Am. Chem. Soc.* **131**, 7662-7677 (2009).

127. "Molecular Structure of Helical Supramolecular Dendrimers," M. Peterca, V. Percec, M. R. Imam, P. Leowanawat, K. Morimitsu, P. A. Heiney, *J. Am. Chem. Soc.* **130**, 14840-14852 (2008).
128. "Nanomechanical function from self-organizable dendronized helical polyphenylacetylenes," V. Percec, J. G. Rudick, M. Peterca, P. A. Heiney, *J. Am. Chem. Soc.* **130**, 23 7503-7508 (2008).
129. "Supramolecular structural diversity among first-generation hybrid dendrimers and twin dendrons," V. Percec, J. G. Rudick, M. Peterca, M. E. Yurchenko, J. Smidrkal, P. A. Heiney, *Chem. Eur. J.* **14**, 3355-3362 (2008).
130. "Precipitated Calcium Carbonate Hybrid Hydrogels: Structural and Mechanical Properties," M. Guvendiren, P. A. Heiney, S. Yang, *Macromolecules* **42**, 6606-6613 (2009).
131. "Elucidating the Structure of the Pm3n Cubic Phase of Supramolecular Dendrimers through the Modification of their Aliphatic to Aromatic Volume Ratio," V. Percec, M. Peterca, Y. Tsuda, B. M. Rosen, S. Uchida, M. R. Imam, G. Ungar, and P. A. Heiney, *Chem. Eur. J.* **15**, 8994-9004 (2009).
132. "Self-Assembling Dendronized Dendrimers," V. Percec, M. R. Imam, M. Peterca, W.-D. Cho, and P. A. Heiney, *Israel J. Chem.* **49**, 55-70 (2009).
133. "Predicting the Structure of Supramolecular Dendrimers via the Analysis of Libraries of AB₃ and Constitutional Isomeric AB₂ Biphenylpropyl Ether Self-Assembling Dendrons," B. Rosen, D. Wilson, C. Wilson, M. Peterca, B. Won, C. Huang, L. Lipski, X. Zheng, G. Ungar, P. A. Heiney, V. Percec, *J. Am. Chem. Soc.* **131**, 17500-17521(2009).
134. "Self-Assembly of Hybrid Dendrons into Doubly-Segregated Supramolecular Polyhedral Columns and Vesicles," Peterca, M.; Imam, M.; Leowanawat, P.; Rosen, B.; Wilson, D.; Wilson, C.; Zeng, X.; Ungar, G.; Heiney, P.; Percec, V., *J. Am. Chem. Soc.* **132**, 11288-11305 (2010).
135. "A new family of bent-core C-2-symmetric liquid crystals," K. A. Hope-Ross, P. A. Heiney, J. F. Kadla, *Can. J. Chem.–Rev. Can. de Chimie*, **88**, 639-645 (2010).
136. "Thermotropic Behavior, Self-Assembly and Photophysical Properties of a Series of Squaraines," M. Qaddoura, K. Belfield, P. Tongwa, T. Timofeeva, P. A. Heiney, *Supramolecular Chemistry* **23**, 731-742 (2011).
137. "Self-Assembly of Dendronized Perylene Bisimides into Complex Helical Columns", V. Percec, M. Peterca, T. Tadjiev, X. Zeng, G. Ungar, P. Leowanawat, E. Aqad, M. Imam, B. Rosen, U. Akbey, R. Graf, S. Sekharan, D. Sebastiani, H. Spiess, P. Heiney, S. Hudson, *J. Am. Chem. Soc.* **133**, 12197-12219 (2011).
138. "Liquid Crystal-directed Assembly and Phase Morphology of a Squarine Dye," M. Qaddoura, K. Belfield, P. A. Heiney, submitted to *Supramolecular Chemistry* (2011).

139. “Self-Repairing Complex Helical Columns Generated via Kinetically Controlled Self-Assembly of Dendronized Perylene Bisimides”, V. Percec, S. Hudson, M. Peterca, P. Leowanawat, E. Aqad, R. Graf, H. Spiess, X. Xeng, G. Ungar, P. Heiney, *J. Am. Chem. Soc.* **133**, 18479-18494 (2011).
140. “ Environmental Chamber for In Situ Dynamic Control of Temperature and Relative Humidity during X-ray Scattering,” D. Salas-de la Cruz, J. Denis, M. Griffin, D. King, P. Heiney, and K. Winey, to be published in *Rev. Sci. Inst.* (2012).

Paul A. Heiney: Conference Proceedings and Non-refereed Publications

1. "Structure and Transitions of Monolayer Krypton and Xenon on Graphite," R. J. Birgeneau, E. M. Hammonds, P. Heiney, P. W. Stephens, and P. M. Horn, in *Proceedings of the International Conference on Ordering in Two Dimensions*, edited by S. K. Sinha, pp. 29-38, Plenum, New York (1980).
2. "Quasi-crystals: Respectable Icosahedral Symmetry," P. A. Heiney, *Nature News and Views* **315**, 178 (1985).
3. "Icosahedral Structure of Bimetallic Alloys," P. A. Heiney, P. A. Bancel, P. W. Stephens, and A. I. Goldman, *J. Metals* **37**, A74-A74 (1985).
4. "Structure of High Stage Potassium Graphite," P. A. Heiney, M. E. Huster, V. B. Cajipe, and J. E. Fischer, *Synthetic Metals* **12**, 21-26 (1985).
5. "Icosahedral Alloys: Phase Purity and Phason Strains," P. A. Bancel and P. A. Heiney, *J. de Physique* **47**, C3: 341-350 (1986).
6. "Structure of Quasicrystalline Al-Mn-Ru: X-Ray and Neutron Studies," W. Dmowski, T. Egami, P. A. Bancel, P. A. Heiney, D. V. Baxter, and J. A. Leake, *Mat. Sci. Eng.* **99**, 345-358 (1988).
7. "Local-Structure of $Al_{75}(Mn,Cr,Ru,Re,Si)_{25}$ Icosahedral Alloys Studied by Pulsed Neutron-Scattering," W. Dmowski, T. Egami, P. A. Bancel, P. A. Heiney, and K. Volin, *J. Appl. Phys.* **63**, 4070-4070 (1988).
8. "Structure and Disorder in the Al-Pd Decagonal Phase," S. Idziak, P. A. Heiney and P. A. Bancel, *Proc. Int. Workshop on Quasicrystals (Beijing)*, *Mat. Sci. Forum* **22-24**, 353-368 (1987).
9. "Staging in Potassium-Doped Polyacetylene: in situ X-ray Diffraction," D. Djurado, J. E. Fischer, P. A. Heiney, J. Ma, N. Coustel, and P. Bernier, *Synthetic Metals* **34**, 683-688 (1989).
10. "Comment on a Paper by Linus Pauling," P. A. Bancel, P. A. Heiney, P. M. Horn, and P. J. Steinhardt, *Proc. Nat. Acad. Sci.* **86**, 8600-8601 (1989).
11. "New Results on the X-ray Structure of $Trans-CH_x$ and its Alkali Metal Compounds," J. E. Fischer, P. A. Heiney, and J. Ma, *Synthetic Metals* **41-43**, 33-38 (1991).
12. "Solid C_{60} : Structure, Bonding, Defects and Intercalation," J. E. Fischer, P. A. Heiney, D. E. Luzzi, and D. E. Cox, in *Fullerenes: Synthesis, Properties and Chemistry of Large Carbon Clusters*, G. S. Hammond and V. J. Kuck, editors (American Chemical Society Symposium Series **481**, 1992), pp. 55-69.
13. "Buckyballs: Icosahedral C_{60} ," P. A. Heiney, *Condensed Matter News* **4**, 25-29 (1992).

14. "Temperature Dependent Structural Studies of K- and Rb-Doped C₆₀," O. Zhou, Q. Zhu, G. B. M. Vaughan, J. E. Fischer, P. A. Heiney, N. Coustel, J. McCauley Jr., A. B. Smith III, and D. E. Cox, in *Novel Forms of Carbon*, edited by C. L. Renschler, J. J. Pouch and D. M. Cox (MRS Symposium Proceedings **270**), 191-196 (1992).
15. "Order and Disorder in Fullerene and Fulleride Solids," J. E. Fischer and P. A. Heiney, *J. Phys. Chem. Solids*, **54**, 1725-1757 (1993).
16. "Using Atomic Force Microscopy to Image Langmuir Blodgett Films of Disk Shaped Molecules," N. C Maliszewskyj, J. Y. Josefowicz, P. A. Heiney, J. P. McCauley, Jr., and A. B. Smith, III, *Mater. Res. Soc. Proc. Symp. Proc.* **355**, 147-152 (1995).
17. "Neutron Scattering Studies of C₆₁H₂," D. A. Neumann, J. E. Fischer, J. R. D. Copley, P. A. Heiney, J. J. Rush, R. M. Strongin, L. Brard and A. B. Smith III, in *Science and Technology of Fullerene Materials*, edited by P. Bernier, T. W. Ebbesen, D. S. Bethune, R. M. Metzger, L. Y. Chiang and J. W. Mintmire, p. 537 (The Materials Research Society, Pittsburgh), 1995.
18. "A Neutron Diffraction Study of the 6,5-Annulene Isomer of C₆₁D₂," D. A. Neumann, Q. Huang, J. R. D. Copley, J. E. Fischer, P. A. Heiney, R. M. Strongin, L. Brard, and A. B. Smith, III, in *Recent Advances in the Chemistry and Physics of Fullerenes and Related Materials, Vol. 2*, edited by R. S. Ruoff and K. M. Kadish, p. 791. (The Electrochemical Society, Pennington NJ, 1995).
19. "Orientational Glass Transitions in the Fullerene Derivatives C₆₀O and C₆₁H₂," C. Meingast, G. Roth, M. M. Kappes, R. H. Michel, C. Stoermer, L. Brard, P. A. Heiney, J. E. Fischer, A. B. Smith, III, and R. M. Strongin, in *Physics and Chemistry of Fullerenes and Derivatives*, pp. 167-170, H. Kuzmany, J. Fink, M. Mehring, and S. Roth eds, World Scientific, Singapore (1995).
20. "Structural Studies of Langmuir Films of Disc-shaped Molecules," O. Y. Mindyuk and P. A. Heiney, *Adv. Mat.* **11**, 341-344 (1999).
21. "Electroclinic Liquid Crystals with Large Tilt Angles for Gray Scale Applications," M. S. Spector, J. Naciri, R. Shashidar, and P. A. Heiney, *Proc. SPIE*, **4107** 99-107 (2000).
22. "Network Growth in the Flocculation of Concentrated Colloidal Silica Dispersions," P. A. Heiney, R. J. Butera, J. D. Londono, R. V. Davidson, S. Mazur, *APS Forefront* **1**, 92-95 (2001).
23. "Helical porous protein mimics self-assembled from amphiphilic dendritic dipeptides," V. Percec, A. Dulcey, M. Peterca, M. Ilies, Y. Miura, U. Edlund, P. A. Heiney, *Austral. J. Chem.* **58**, 472-482 (2005), 4739-4745 (2005).
24. "Datasqueeze: A Software Tool for Powder and Small-Angle X-Ray Diffraction Analysis," P. A. Heiney, *Commission on Powder Diffraction Newsletter* **32**, 9-11 (2005).

25. “Functionalized Metal and Semiconductor Nanoparticle Doped Liquid Crystals - Modifying Optical and Electro-optical Properties,” T. Hegmann, H. Qi, B. Kinkead, V. M. Marx , H. Girgis, P. A. Heiney, *Can. Metall. Quarterly* **48**, 1-9 (2009).