Randal Hill, Ph.D.

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Award winning chemist and materials scientist. Former Visiting Scientist at MIT. Served as adjunct faculty at Stanford and the University of Minnesota. Extensive Intellectual Property experience including patent development and strategy. Holder of 70+ issued patents. Author of "Silicone Surfactants" book and 50+ articles. Developed pigments for the Amazon Kindle reflective display. Organized two international symposia. Invited speaker at five international Colloid Chemistry meetings. Experienced expert witness.

AREAS OF EXPERTISE INCLUDE

- Agricultural chemicals
- Chemistry, chemical engineering, and materials science
- Color reflective electronic displays
- Drilling fluids
- Emulsions, microemulsions, foams, and surfactants
- Fire-fighting foams
- Household and personal care products
- Nanotechnology
- Pigments, coatings, and wetting agents
- Polymers, adhesives, and adhesion
- Silicones, silanes, antifoams, sealants, and elastomers
- Surfactant and complex nanofluid technologies for oil and gas applications.
- Superhydrophobic silicone nanofibers

PROFESSIONAL EXPERIENCE

Kodiakhill Services LLC, *Honor, MI* 2020 - present

Founder and Owner,

Consulting and Expert Witness Services. Provide consulting services concerning silicones, adhesives, agricultural and oilfield emulsions, bio-derived surfactants, antifoams, well-drilling fluids, sustainability, microbicides and architectural coatings. Expert witness opinions, reports and testimony.

Flotek Chemistry LLC, *Houston, TX* 2011-2020

Formulation Development Manager and Research Fellow

Developed next generation upstream oil & gas products and well-treatment fluids. Led Formulation Development Group that developed 40 new products in 9 years. Grew patent portfolio from 6 to 93 in 7-years. Served as Science Advisor directing response to Patent Rejections. Diversified patent protection to include green bio-derived raw materials. Trained and mentored Research Scientists. Developed demos to teach potential customers about products.

E Ink Corp., *Cambridge, MA* 2008-2011

Pigment Group Leader and Principal Scientist

Led development of new pigment surface treatments to control charging properties for reflective electronic displays. Participated in development of first color reflective displays.

Dow Corning Corp., *Cambridge, MA*

MIT Visiting Scientist 2003–2008

Worked with MIT faculty to invent and develop superhydrophobic silicone nanofibers. Obtained 3 years of U.S. Army funding to develop nanofiber membranes for breathable protective textiles. Identified emerging innovations in nanotechnology that aligned with Dow's business interests and evaluated partnerships with 9 MIT professors. Led global project on silicone nanomaterials for photonic applications that led to an Army grant to support joint work with MIT and the University of Ioannina in Greece.

Dow Corning Corp., *Midland, MI*

Associate Research Scientist 1998 - 2003

Developed patented silicone surfactant and silicone microemulsion technologies for personal and household care applications. Formulation of silicone vesicles into skin care products. Led a joint project with a Silicon Valley startup to develop transparent high refractive index silicone materials. Led a joint project with Stanford University that substantially broadened the formulation space of transparent personal care products containing silicones.

Research Specialist and Senior Research Specialist 1988 - 1998

Authored/Edited a book entitled "Silicone Surfactants." Initiated a 5-year collaboration with the University of Minnesota that generated new understanding of silicone surfactants, silicone antifoams and new patented product technologies that developed into new product and new market sales.

Horizon Chemical Co., *Decatur, IL* 1986 – 1988

Senior Research Chemist

Developed applications of sugar-based surfactants and their uses in laundry and dish detergents. Presented to customers to facilitate rapid application development of these materials.

Lever Research Inc., *Edgewater, NJ* 1982 - 1986

Principal Research Chemist

Assigned to Unilever Research, Vlaardingen, The Netherlands June 1984 to June 1985. Developed detergent formulations based on enzymes. Served as Key Contact for transfer of enzyme technology from the Enzyme Expertise Center, Unilever Research (Netherlands) to Lever Research US.

EXPERT WITNESS TESTIMONY

1. Prepared Expert Opinion (May 14, 2024) and Rebuttal Report (June 28, 2024) for Plaintiffs in Ridge Corporation v. Altum, et al., Case No. 2:21-CV-5915 in U.S. District Court, Columbus, OH. Deposed in this case on Aug. 20, 2024.

EDUCATION

University of Oklahoma, *Norman, OK* 1982
Ph.D., Physical Chemistry

Southern Nazarene University, *Bethany, OK* 1976
B.S., Physics

PROFESSIONAL ACTIVITIES

Member, **American Oil Chemists Society**	since 2013
Member, **Society of Petroleum Engineers**	since 2011
Member. **American Physical Society**	since 2000
Member, **American Chemical Society**	since 1978
Visiting Scientist, **Massachusetts Institute of Technology (MIT)**	2003-2010
Adjunct Professor, **Wayne State University**	2000-2005
Visiting Scholar, **Stanford University**	2000-2003
Associate Editor, **Journal of Surfactants and Detergents**	since 2014
Adjunct Professor, **University of Minnesota**	1993-1995

AWARDS

AOCS Samuel Rosen Award 2017
Surfactant Chemistry

Dow Corning Technical Achievement Award

Silicone Microemulsions for Antiperspirants	2001
New Personal Care Applications of Siloxane Surfactants	1995
Foam Control Technologies	1990

INVITED LECTURES AND SYMPOSIA ORGANIZED

- **Hill, R.M**. "Surfactant Enhanced Spreading, Gordon Research Conference, Chemistry at Interfaces, July 1998.
- **Hill, R.M**., Dynamics of Surfactant Enhanced Spreading, ACS National Meeting, Dallas, TX, March 1998.
- **Hill, R.M**., "Dynamics of Surfactant Enhanced Spreading, PRA, Orlando, FL ,March 1998.
- Invited speaker on the topic of surfactant solution spreading at international conferences ranging from the Surfactants in Solution meeting in Jerusalem in 1996 to the IACS in Bristol in 2000.
- **Hill, R.M**.; Stoebe, T.; Davis, H.T., Wetting by mixtures of siloxane and hydrocarbon surfactant, Workshop on Spreading, Gien, France, May 2000.

- Co-organized an International Workshop on Spreading in 2000 in Giens, France.
- Organized with Prof. Darsh Wasan (IIT) a two day symposium on Surfactant Spreading at the 1998 ACS National Meeting.

PATENTS

1. US12158684, *Method for driving two layer variable transmission display*, to E Ink Corp., December 3, 2024.
2. US11733580, *Method for driving two layer variable transmission display*, to E Ink Corp., August 2, 2023.
3. US11634625, *Siloxane surfactant additives for oil and gas applications*, to Flotek Chemistry, April 25, 2023.
4. US11560351. *Methods and compositions incorporating alkyl polyglycoside surfactant for use in oil and/or gas wells*, to Flotek Chemistry, January 24, 2023.
5. US11512243, *Microemulsions Comprising An Alkyl Propoxylated Sulfate Surfactant, and Related Methods*, to Flotek Chemistry, November 29, 2022.
6. US11467466, *Illumination systems for reflective displays*, to E Ink Corp., October 12, 2022.
7. CA3073056C, *Compositions comprising aromatic ester solvents for use in oil and/or gas wells and related methods*, to Flotek Chemistry, May 31, 2022.
8. US11254856, *Methods and compositions for use in oil and/or gas wells*, to Flotek Chemistry, February 22, 2022.
9. US11180690, *Diluted microemulsions with low surface tensions*, to Flotek Chemistry, November 23, 2021.
10. US11149189, *Siloxane surfactant additives for oil and gas applications*, to Flotek Chemistry, October 19, 2021.
11. US11053433, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations*, to Flotek Chemistry, July 6, 2021.
12. US11034879, *Methods and compositions for use in oil and/or gas wells*, to Flotek Chemistry, June 15, 2021.
13. US11029576, *Method for driving two layer variable transmission display*, to E Ink Corp., June 8, 2021.
14. US10941106, *Methods and compositions incorporating alkyl polyglycoside surfactant for use in oil and/or gas wells*, to Flotek Chemistry, March 9, 2021.
15. US10738235, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations*, to Flotek Chemistry, August 11, 2020.
16. US10731071, *Methods and compositions for use in oil and/or gas wells comprising microemulsions with terpene and silicone*, to Flotek Chemistry, August 4, 2020.
17. US10703960, *Methods and compositions for use in oil and/or gas wells,* to Flotek Chemistry, July 7, 2020.
18. US10696887, *Oxidative breakers in a silicone based suspension*, to Flotek Chemistry, June 30, 2020.
19. US10590332, *Siloxane surfactant additives for oil and gas applications*, to Flotek Chemistry, March 17, 2020.
20. US10544355, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations using emulsions comprising terpene*, to Flotek Chemistry, January 28, 2020.
21. CA2906097C, *Oxidative breakers in a silicone based suspension*, to Flotek Chemistry, December 3, 2019.
22. CA2904735C, *Methods and compositions for use in oil and/or gas wells,* to Flotek Chemistry, November 26, 2019.

23. CA2906047C, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations*, to Flotek Chemistry, November 12, 2019.

24. CN105971571B, *Method and composition for oil well and/or gas well*, to Flotek Chemistry, October 15, 2019.

25. US10421707, *Methods and compositions incorporating alkyl polyglycoside surfactant for use in oil and/or gas wells*, to Flotek Chemistry, September 24, 2019.

26. AU2017261565, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations*, to Flotek Chemistry, September 12, 2019.

27. AU2018201361B2, *Methods and compositions for use in oil and/or gas wells*, to Flotek Chemistry, May 16, 2019.

28. CN106837217B, *For oil well and/or the composition and method comprising terpenol of gas well*, to Flotek Chemistry, July 2, 2019.

29. US10287483, *Methods and compositions for use in oil and/or gas wells comprising a terpene alcohol*, to Flotek Chemistry, May 14, 2019.

30. CA2904736C, *Siloxane surfactant additives for oil and gas applications*, to Flotek Chemistry, April 23, 2019.

31. CN104755582B, *Method for stimulating and composition for producing hydrocarbons from subsurface formations*, to Flotek Chemistry, April 12, 2019.

32. CN105419750B, *Method and composition for oil well and/or gas well*, to Flotek Chemistry, March 22, 2019.

33. EP3067404A1, *Methods and compositions for use in oil and/or gas wells*, to Flotek Chemistry, March 6, 2019.

34. AU2015227467B2, *Terpene alcohol microemulsion additives*, to Flotek Chemistry, February 21, 2019.

35. AU2015227471B2, *Silicone solvent microemulsions for crude oil demulsification*, to Flotek Chemistry, February 22, 2019.

36. AU2015227391B2, *Silicone solvent microemulsion additives*, to Flotek Chemistry, February 14, 2019.

37. US10196557, *Hydrocarbon solvent microemulsion additives*, to Flotek Chemistry, February 5, 2019.

38. CA2897548C, *Hydrophobic nanoparticle microemulsion additives*, to Flotek Chemistry, October 30, 2018.

39. US10087361, Terpene solvent microemulsion additives, to Flotek Chemistry, October 2, 2018.

40. US10053619, *Siloxane surfactant additives for oil and gas applications*, to Flotek Chemistry, August 21, 2018.

41. US10000693, *Silicone solvent microemulsions*, to Flotek Chemistry, June 19, /2018.

42. US9989829*, Multi-color electro-optic displays*, to E Ink Corp., June 5, 2018.

43. US9994762, *Terpene microemulsions for oil and gas applications*, to Flotek Chemistry, June 12, 2018.

44. CA2842208C, *Siloxane surfactant additives for oil and gas applications*, to Flotek Chemistry, May 1, 2018.

45. CN201480002623.0, *Alpha-olefin microemulsions for oil and gas applications*, to Flotek Chemistry, April 24, 2018.

46. AU2014236272B2, *Amine solvent microemulsion additives for oil and gas applications*, to Flotek Chemistry, March 15, 2018.

47. US9884988, *Stimulation fluid utilized in offshore wells*, to Flotek Chemistry, February 6, 2018.

48. US9868893, *Silicone solvent microemulsions for crude oil demulsification*, to Flotek Chemistry, January 16, 2018.

49. AU2014278002B2, *Hydrocarbon solvent microemulsions for oil and gas applications*, to Flotek Chemistry, November 30, 2017.

50. AU2014236331B2, *Terpene microemulsion additives for oil and gas applications*, to Flotek Chemistry, December 18, 2017.

51. US9809741, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations*, to Flotek Chemistry, November 7, 2017.

52. US9428683, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations*, to Flotek Chemistry, august 30, 2016.

53. US9321955, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations*, to Flotek Chemistry, April 26, 2016.

54. US9341916*, Multi-color electro-optic displays*, to E Ink Corp., May 17, 2016.

55. US9068108, *Methods and compositions for stimulating the production of hydrocarbons from subterranean formations*, to CESI Chemical, June 30, 2015.

56. US8906814, *Highly reactive multilayer assembled coating of metal oxides on organic and inorganic substrates*, to MIT, December 9, 2014.

57. US8574713, *Superhydrophobic fibers and methods of preparation and use thereof*, to MIT, November 5, 2013.

58. US8576476, *Multi-color electro-optic displays, to E Ink Corp.*, November 5, 2013.

59. US6998424, *Clear silicone microemulsions formed spontaneously*, to Dow Corning Corp., February 14, 2006.

60. US6616934, *Clear silicone microemulsions*, to Dow Corning Corp., September 9, 2003.

61. US6498197, *Temperature Insensitive one-phase microemulsions*, to Dow Corning Corp., December 24, 2002.

62. US6479583, *Polymerization of silicone microemulsions*, to Dow Corning Corp., November 12, 2002.

63. US6013683, *Single phase silicone and water compositions for cosmetics*, to Dow Corning Corp. and University of Delaware, January 11, 2000.

64. US5958448, *Siloxane MQ resin vesicles for entrapment of water-soluble substances*, to Dow Corning Corp., September 28, 1999.

65. US5707613, *Spontaneously formed clear silicone microemulsions*, to Dow Corning Corp., January 13, 1998.

66. US5705562, *Spontaneously formed clear silicone microemulsions*, to Dow Corning Corp., January 6, 1998.

67. US5623017, *Clear silicone gels*, to Dow Corning Corp., April 22, 1997.

68. US5411744, *Silicone vesicles and entrapment*, to Dow Corning Corp., May 2, 1995.

69. US5364633, *Siloxane surfactant vesicles for entrapment of cosmetics and pharmaceuticals*, to Dow Corning Corp., November 15, 1994.

70. US5262088, Emulsion gelled silicone antifoams, to Dow Corning Corp., November 16, 1993.

71. US5235082, *Cationic diquaternary ammonium salt containing functional silicones*, to Dow Corning Corp., August 10, 1993.

PUBLICATIONS

1. **Hill, R.M**. et al., Post-frac-hit mitigation and well remediation. In Unconventional Resources Technology Conference, Houston, Texas, 23-25 July 2018 (pp. 1479-1494), Society of Petroleum Engineers.

2. Lin Y.J., A. Perrard, S.L. Biswal, **R.M. Hill**, and S. Trabelsi, Microfluidic investigation of asphaltenes-stabilized water-in-oil emulsions. Energy & Fuels 32(2018)4903.

3. **Hill, R.M**., S. Trabelsi, and G. Pietrangeli, Silicone dispersions in oil and gas. In "Silicone Dispersions," Y. Liu, Editor, CRC Press, 2017, page 333.

4. Ma, M., **R.M. Hill** and G.C. Rutledge, A review of recent results on superhydrophobic materials based on micro- and nanofibers. J. Adhesion Sci. Technol. 22(2008)1799. Also published in "Superhydrophobic Surfaces," A. Carre' and K.L. Mittal, Editors, CRC Press, 2009, page 241.

5. Ma, M.; **R.M. Hill**, Superhydrophobic surfaces. Curr. Op. Colloid Interface Sci. 11(2006)193. Article cited 1701 times since publication (as of 1/2025).

6. Lee, J.A., K.C. Krogman, M. Ma, **R.M. Hill**, P.T. Hammond, and G.C. Rutledge, Highly reactive multilayer-assembled TiO2 coating on electrospun polymer nanofibers. Adv. Mat. 21(2009)1252.

7. Politakos, N., E. Ntoukas, A. Avgeropoulos, V. Krikorian, B.D. Pate, E.L. Thomas, and **R.M. Hill**, Strongly segregated cubic microdomain morphology consistent with the double gyroid phase in high molecular weight diblock copolymers of polystyrene and poly (dimethylsiloxane). J. Polymer Science Part B 47(2009)2419.

8. **Hill, R.M**., Silicone Surfactants. In "Chemistry and Technology of Surfactants," R.J. Farn, Editor, Blackwell Publishing, 2006, p. 186.

9. Ma M., **R.M. Hill**, J.L. Lowery, S.V. Fridrikh, and G.C. Rutledge, Electrospun poly(styrene-block-dimethylsiloxane) copolymer fibers exhibiting superhydrophobicity. Langmuir 21(2005)5549. Article was on the American Chemical Society Hot Papers List in 2007 and has been cited 672 times (as of 1/2025).

10. Lee, J.Y., A.C. Balazs, R.B. Thompson, and **R.M. Hill**, Self-assembly of amphiphilic nanoparticle-coil tadpoles. Macromolecules 37(2004)3536.

11. Dong, J.P., G.Z. Mao, and **R.M. Hill**, Nanoscale aggregate structures of trisiloxane surfactants at the solid-liquid interface. Langmuir 20(2004)2695.

12. Anseth, J.W., A. Bialek, **R.M. Hill**, and G.G. Fuller, Interfacial rheology of graft-type polymeric siloxane surfactants. Langmuir 19(2003)6349.

13. Dong, J., G. Mao, and **R.M. Hill**, Atomic force microscopy study of trisiloxane surfactant aggregate structures at the solid-liquid interface. ACS Symp. Ser. 861(2003)2.

14. Svitova, T., O. Theodoly, S. Christiano, **R.M. Hill**, and C.J. Radke, Wetting behavior of silicone oils on solid substrates immersed in aqueous electrolyte solutions. Langmuir 18(2002)6821.

15. **Hill, R.M**., Silicone surfactants - new developments. Curr. Op. Colloid & Interface Sci. 7(2002)255.

16. **Hill, R.M**., G.G. Fuller, and J. Anseth, Phase behavior of silicone copolymers swollen with water and oil. Abstracts of Papers, 224th Am. Chem. Soc. National Meeting, 2002, p. COLL-289.

17. **Hill, R.M**., Silicone (Siloxane) Surfactants. "Encyclopedia of Physical Science and Technology," 3rd Edition, Robert A. Meyers, Editor, Volume 14, 2002, p. 793.

18. Svitova, T., **R.M. Hill**, and C.J. Radke, Adsorption layer structures and spreading behavior of aqueous non-ionic surfactants on graphite. Colloids Surf. A, 183-185(2001)607.

19. Silas, J.A., E.W. Kaler, and **R.M. Hill**, Effect of didodecyldimethylammonium bromide on the phase behavior of nonionic surfactant-silicone oil microemulsions. Langmuir 17(2001)4534.

20. Churaev, N.V., A.P. Ershov, N.E. Esipova, **R.M. Hill**, V.D. Sobolev, and Z.M. Zorin, Application of a trisiloxane surfactant for removal of oils from hydrophobic surfaces. Langmuir 17(2001)1349.

21. Churaev, N.V., N.E. Esipova, **R.M. Hill**, V.D. Sobolev, V.M. Starov, and Z.M. Zorin, The superspreading effect of trisiloxane surfactant solutions. Langmuir 17(2001)1338.

22. Svitova, T.F., **R.M. Hill**, and C.J. Radke, Spreading of aqueous trisiloxane surfactant solutions over liquid hydrophobic substrates. Langmuir 17(2001)335.

23. **Hill, R.M**., J. Dong, and G. Mao, Surfactant solutions exhibit a critical wetting concentration. Abstracts of Papers – 221st Am. Chem. Soc. National Meeting, 2001, p. COLL-352.

24. Perry, D., **R.M. Hill**, and A. Cackovich, Glorious spread. Polymer Paint & Color Journal, 192(2001)16.

25. **Hill, R.M**., Editor, "Silicone Surfactants." Surfactant Sci. Ser. Vol. 86. 1999, Marcel Dekker.

26. **Hill, R.M**., Siloxane surfactants, in "Silicone Surfactants," **R.M. Hill**, Editor. 1999, Marcel Dekker, p. 1-47.

27. **Hill, R.M**. and K.C. Fey, Silicone polymers for foam control and demulsification, in "Silicone Surfactants," **R.M. Hill**, Editor. 1999, Marcel Dekker, p. 159-180.

28. Stoebe, T., **R.M. Hill**, M.D. Ward, L.E. Scriven, and H.T. Davis, Surfactant-enhanced spreading, in "Silicone Surfactants," **R.M. Hill**, Editor. 1999, Marcel Dekker, p. 275-312.

29. **Hill, R.M**., X. Li, and H.T. Davis, Ternary phase behavior of mixtures of siloxane surfactants, silicone oils, and water, in "Silicone Surfactants," **R.M. Hill**, Editor. 1999, Marcel Dekker, p. 313-348.

30. Svitova, T.F., **R.M. Hill**, and C.J. Radke, Spreading of aqueous dimethyldidodecylammonium bromide surfactant droplets over liquid hydrocarbon substrates. Langmuir 15(1999)7392.

31. Li, X., R.M. Washenberger, L.E. Scriven, H.T. Davis, and **R.M. Hill**, Phase behavior and microstructure of water/trisiloxane E6 and E10 polyoxyethylene surfactant/silicone oil systems. Langmuir 15(1999)2278.

32. Li, X., R.M. Washenberger, L.E. Scriven, H.T. Davis, and **R.M. Hill**, Phase behavior and microstructure of water/trisiloxane E12 polyoxyethylene surfactant/silicone oil systems. Langmuir 15(1999)2267.

33. **Hill, R.M**., Superspreading. Curr. Opin. Colloid Interface Sci. 3(1998)247.

34. **Hill, R.M**., Dynamics of surfactant enhanced spreading. Eur. Coat. J. 7-8(1998)550.

35. Svitova, T., **R.M. Hill**, Y. Smirnova, A. Stuermer, and G. Yakubov, Wetting and interfacial transitions in dilute solutions of trisiloxane surfactants. Langmuir 14(1998)5023.

36. **Hill, R.M**. and R.F. Burow, Why organosilicon adjuvants spread. ASTM Spec. Tech. Publ., STP 1328(1997)226.

37. Stoebe, T., Z. Lin, **R.M. Hill**, M.D. Ward, and H.T. Davis, Surfactant-enhanced spreading. [Erratum to document cited in CA124,127804]. Langmuir 13(1997)7304.

38. Stoebe, T., Z. Lin, **R.M. Hill**, M.D. Ward, and H.T. Davis, Superspreading of aqueous films containing trisiloxane surfactant on mineral oil. Langmuir 13(1997)7282.

39. Stoebe, T., **R.M. Hill**, M.D. Ward, and H.T. Davis, Enhanced spreading of aqueous films containing ionic surfactants on solid substrates. Langmuir 13(1997)7276.

40. Stoebe, T., Z. Lin, **R.M. Hill**, M.D. Ward, and H.T. Davis, Enhanced spreading of aqueous films containing ethoxylated alcohol surfactants on solid substrates. Langmuir 13(1997)7270.

41. **Hill, R.M**., Siloxane surfactants. In "Specialist Surfactants," I.D. Robb, Editor. 1997, Chapman & Hall, p. 143-168.

42. Hill, R.M., in "Structure and flow in surfactant solutions." ACS Symp. Ser. 578(1997)67.

43. Burow, R.F., D. Penner, F.C. Roggenbuck, and **R.M. Hill**, Relationship of organosilicone adjuvant structure and phase behavior to activity enhancement of acifluorfen and glyphosate. FRI Bull. 193(1996)54.

44. Svitova, T., H. Hoffmann, and **R. Hill**, Trisiloxane surfactants, surface/interfacial tension dynamics and spreading on hydrophobic surfaces. Langmuir 12(1996)1712.

45. Lin, Z., T. Stoebe, **R.M. Hill**, H.T. Davis, and M.D. Ward, Improved accuracy in dynamic quartz crystal microbalance measurements of surfactant enhanced spreading. Langmuir 12(1996)345.

46. Stoebe, T., Z. Lin, **R.M. Hill**, M.D. Ward, and H.T. Davis, Surfactant-enhanced spreading. Langmuir 12(1996)337.

47. Li, X., **R.M. Hill**, L.E. Scriven, and H.T. Davis, Liquid crystals in ternary polyoxyethylene trisiloxane surfactant-silicone oil-H2O system. Mat. Res. Soc. Symp. Ser. 425(1996)173.

48. Hill, R. and S. Christiano, "Antifoaming Agents," in Polymeric Materials Encyclopedia, J.C. Salamone, Editor, 1996, CRC Press, p. 285.

49. Hill, R.M., M. He, H.T. Davis, and L.E. Scriven, Reply to comment on silicone superwetters. Langmuir 11(1995)1416.

50. He, M., **R.M. Hill**, H.A. Doumaux, F.S. Bates, H.T. Davis, D.F. Evans, and L.E. Scriven, Microstructure and rheology of nonionic trisiloxane surfactant solutions. ACS Symp. Ser. 578(1994)192.

51. Lin, Z., **R.M. Hill**, H.T. Davis, and M.D. Ward, Determination of wetting velocities of surfactant superspreaders with the quartz crystal microbalance. Langmuir 10(1994)4060.

52. Hill, R.M., M. He, H.T. Davis, and L.E. Scriven, Comparison of the liquid crystal phase behavior of four trisiloxane superwetter surfactants. Langmuir 10(1994)1724.

53. Lin, Z., **R.M. Hill**, H.T. Davis, L.E. Scriven, and Y. Talmon, Cryo transmission electron microscopy study of vesicles and micelles in siloxane surfactant aqueous solutions. Langmuir, 10(1994)1008.

54. He, M., **R.M. Hill**, Z. Lin, L.E. Scriven, and H.T. Davis, Phase behavior and microstructure of polyoxyethylene trisiloxane surfactants in aqueous solution. J. Phys. Chem. 97(1993)8820.

55. Hill, R.M., M. He, Z. Lin, H.T. Davis, and L.E. Scriven, Lyotropic liquid crystal phase behavior of polymeric siloxane surfactants. Langmuir 9(1993)2789.

56. Hill, R., Interactions between siloxane surfactants and hydrocarbon surfactants, in "Mixed Surfactant Systems," P.M. Holland and D.N. Rubingh, Editors, ACS Symposium Series 501(1992)278.

57. Hill, R.M., Applications of surfactant mixtures, in "Mixed Surfactant Systems," K. Ogino and M. Abe, Editors, 1992, Marcel Dekker, p. 317-36.

58. Hill, R.M., The thermodynamics of surfactant aggregation and adsorption at the clay-water interface. Ph.D. Thesis, University of Oklahoma, 1982.

59. Hill, R. and S. Christian, An accurate pressure measurement method for solution studies in the diamond anvil cell in the 0 to 6 kbar range. Applied Spectroscopy 36(1982)302.