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EDUCATION

Ph.D., Institute of Physics, Ukrainian Academy of Sciences, Ukraine, 1997, Physics and Mathematics

M.S., Kiev State University, Kiev, Ukraine 1991, Physics

PROFESSIONAL EXPERIENCE

08/15-present	Associate Professor, Department of Materials Science and Engineering, Clemson University, Clemson, SC
10/11-07/15	Research Associate Professor, Chemical Engineering Department University of Pittsburgh, Pittsburgh, PA
02/08-09/11	Visiting Research Assistant Professor, Chemical Engineering Department, University of Pittsburgh, Pittsburgh, PA
09/00-01/08	Postdoctoral Research Associate, Chemical Engineering Department, University of Pittsburgh, Pittsburgh, PA
08/97-08/00	Research Scientist, Department of Theoretical Physics, Institute for Nuclear Research, Kiev, Ukraine

PROFESSIONAL ACTIVITIES

Reviewer for: Physical Review Letters, Physical Review E, Physics of Fluids, Soft Matter, Langmuir, Europhysics Letters, Analitica Chemica Acta, Polymer Composites, Journal of Applied Physics, Lab on a Chip, Journal of Chemical Physics, RSC Book proposal
Member of Editorial Board of ISRN Computational Mathematics Journal, 2011-2014

PUBLICATIONS

Book Chapters

6. Yong, X.; Snow, C.S.; Kuksenok, O., Balazs, A.C. Developing Hybrid Modeling Methods to Simulate Self-Assembly in Polymer Nanocomposites," *Self-Assembling Systems: Theory and Simulation*. Ed. Li-Tang Yan, Wiley, 2016, in press

5. Deb, D., Dayal, D., Balazs, A.C., Kuksenok, O., "Modeling stimuli-induced reconfiguration and directed motion of responsive gels," (2015), *Engineering of Chemical Complexity II*, Eds. Mikhailov A.S. and Ertl G., World Scientific, Singapore.

4. Dayal, P., Kuksenok, O., Bhattacharya, A., Buxton, G.A., Usta, O.B., and Balazs, A.C., "Modeling the Interaction of Active Cilia with Species in Solution: From Chemical Reagents to Microscopic Particles," (2013), *Artificial Cilia*. Edited by Jaap M J den, Toonder and Patrik, R.O., Royal Society of Chemistry.

3. Kuksenok, O., Yashin, V.V., Dayal, P., and Balazs, A.C., "Self-Oscillating Gels as Biomimetic Soft Materials," (2011), *Nonlinear Dynamics with Polymers*, Wiley-VCH.

2. Kuksenok, O., Dayal, P., Yashin, V.V., and Balazs, A.C., "Self-Oscillating Gels as Stimuli-Responsive Materials," (2011), *Handbook on Stimuli-Responsive Polymers* Wiley-VCH.

1. Kuksenok, O., Travasso, R.D.M., Dayal, P., and Balazs, A.C., "Modeling the Self-Assembly of Ternary Blends that Encompass Photosensitive Chemical Reactions: Creating Defect-free, Hierarchically Ordered Materials," (2010), *Encyclopedia of Polymer Blends: Volume 1: Fundamentals* Edited by Avraam I. Isayev, Wiley-VCH.

Refereed Journal Publications

72. Kuksenok. O., and Balazs, A.C., "Stimuli-responsive behavior of composites integrating thermo-responsive gels with photo-responsive fibers", *Mater. Horiz.*, DOI: 10.1039/C5MH00212E (2016)

71. Liu, Y., Yong, X., McFarlin IV, G.T., Kuksenok. O., Aizenberg, J., and Balazs, A.C., "Designing a gel–fiber composite to extract nanoparticles from solution," *Soft Matter, DOI:* 10.1039/C5SM01719J (2015).

70. Liu, Y., McFarlin IV, G.T., Yong, X., Kuksenok. O., and Balazs, A.C., "Designing Composite Coatings That Provide a Dual Defense against Fouling," *Langmuir*, **31** 7524-7532 (2015)

69. Kuksenok, O., and Balazs, A.C., "Designing Dual-functionalized Gels for Self- reconfiguration and Autonomous Motion," *Scientific Reports*, **5**, 9569 (2015)

68. Shastri A., He, X., Mc Gregor, L., Liu, Y., Mujica, M., Vasquez, Y., Bhattacharya, A., Ma, Y., Aizenberg, M., Kuksenok, O., Balazs, A.C., and Aizenberg, J., "An aptamer-functionalized chemomechanically modulated biomolecule catch-and-release system," *Nature Chemistry*,**7**(5) 447-454 (2015)

67. Yong, X., Kuksenok, O., and Balazs, A.C., "Modeling Free Radical Polymerization Using Dissipative Particle Dynamics," *Polymer*, **72** (18), 217–225 (2015)

66. Yong, X., Simakova, A., Averick, S., Gutierrez, J., Kuksenok, O., Balazs, A.C., Matyjaszewski, K., "Stackable, Covalently-Fused Gels: Repair and Composite Formation," *Macromolecules*, **48** (4), 1169–1178 (2015)

65. Kuksenok, O., Deb, D., Yong, X., and Balazs, A.C, "Designing Biomimetic, Reactive Polymer Gels," *Materials Today*, **17** (10) 486–493 (2014)

64. Deb, D., Kuksenok, O., and Balazs, A.C., "Using Light to Control the Interactions between Self-rotating Assemblies of Active Gels," *Polymer*, **55** (23) 5924–5932 (2014)

63. Kuksenok, O., **"***Chemical Synthesis in Small Spaces*", *Physics*, **7**, 4 (2014)

62. Kuksenok, O., Deb, D., Dayal, P., and Balazs, A.C., "Modeling Chemo-Responsive Polymer Gels," *Annual Review of Chemical and Biomolecular Engineering*, **5** (2014) 35-54.

61. Deb, D., Kuksenok, O., Dayal, P., and Balazs, A.C., "Forming self-rotating pinwheels from assemblies of oscillating polymer gels," *Mater. Horiz.*, **1**, 125-132 (2014)

60. Kuksenok, O., and Balazs, A.C., "Modeling the Photoinduced Reconfiguration and Directed Motion of Polymer Gels," *Advanced Functional Materials*, **23** (36), 4601-4610, (2013)

59. Yong, X., Kuksenok, O., Matyjaszewski, K., and Balazs, A.C., "Harnessing Interfacially-Active Nanorods to Regenerate Severed Polymer Gels," *Nano Letters **13***, 6269-6274, (2013)

58. Dutt, M., Kuksenok, O., and Balazs, A.C., "Nano-pipette directed transport of nanotube transmembrane channels and hybrid vesicles," *Nanoscale*, **5**, 9773-9784 (2013)

57. Liu, Y., Kuksenok, O., and Balazs, A.C., "Using Light To Guide the Motion of Nanorods in Photoresponsive Binary Blends: Designing Hierarchically Structured Nanocomposites," *Langmuir*, **29** (41), 12785-12795 (2013)

56. Kuksenok, O., Dayal, P., Bhattacharya, A., Yashin, V.V., Deb, D., Chen, I.C., Van Vliet, K.J., and Balazs, A.C, "Chemo-responsive, self-oscillating gels that undergo biomimetic communication," *Chem. Soc. Rev*., **42**, 7257-7277 (2013)

55. Salib, I., Yong, X., Crabb E.J., Moellers, N.M., McFarlin IV, G.T., Kuksenok, O., and Balazs, A.C., "Harnessing fluid-driven vesicles to pick up and drop off Janus particles," *ACS Nano* **7** (2), 1224-1238, (2013)

54. Yuan, P., Kuksenok, O., Gross, D.E., Balazs, A.C., Moore, J.S., and Nuzzo, R.G., "UV patternable thin film chemistry for shape and functionally versatile self-oscillating gels," *Soft Matter* **9** (4), 1231-1243, (2013)

53. Dayal, P., Kuksenok, O., and Balazs, A.C., "Reconfigurable assemblies of active, autochemotactic gels," *PNAS* **110** (2), 431-436, (2013)

52. Liu, Y., Kuksenok, O., and Balazs, A.C., "Coassembly of nanorods and photosensitive binary blends: "combing" with light to create, periodically ordered nanocomposites," *Langmuir* 29 (**2**), 750-760, (2013)

51. He, X., Aizenberg, M., Kuksenok, O., Zarzar, L.D., Shastri, A., Balazs, A.C., and Aizenberg, J., "Synthetic homeostatic materials with chemo-mechano-chemical self-regulation," *Nature* , **487**, 214-218, (2012)

50. Ma, Y., Bhattacharya, A., Kuksenok, O., Perchak, D., and Balazs, A.C., "Modeling the Transport of Nanoparticle-filled Binary Fluids through Micropores," *Langmuir* **28** (31), 11410-11421 (2012)

49. Yashin, V.V., Kuksenok, O., Dayal, P., and Balazs, A.C., "Mechano-chemical oscillations and waves in reactive gels," *Rep. Prog. Phys*., **75,** 066601 (2012)

48 Chen, I.C., Kuksenok, O., Yashin, V.V., Balazs, A.C., and Van Vliet, K.J., "Mechanical Resuscitation of Chemical Oscillations in Belousov-Zhabotinsky Gels," *Adv. Funct. Mater*. **22**(12), 2535-2541, (2012)

47. Epstein, I.R., Vanag, V.K., Balazs, A.C., Kuksenok, O., Dayal, P., and Bhattacharya, A., "Chemical Oscillators in Structured Media," *Acc. Chem. Res.*, **45** (12), 2160-2168 (2012)

46. Dayal, P., Kuksenok, O., Bhattacharya, A., and Balazs, A.C., "Chemically-mediated communication in self-oscillating, biomimetic cilia," *J. Mater. Chem.*, **22**, 241-250, (2012)

45. Kuksenok, O., Yashin, V.V., Kinoshita, M., Sakai,T., Yoshida, R., and Balazs, A.C. "Exploiting Gradients in Cross-link Density to Control the Bending and Self-Propelled Motion of Active Gels," *Journal of Materials Chemistry*, **21**, 8360-8371 (2011)

44. Dutt, M., Nayhouse, M., Kuksenok, O., Little S.R., and Balazs, A.C., "Modeling the Self-Assembly of Lipids and Nanotubes in Solution: Forming Vesicles and Bicelles with Transmembrane Nanotube Channels," *ACS Nano*, **5**, 4769-4782 (2011)

43. Dutt, M., Kuksenok, O., Nayhouse, M., Little S.R., and Balazs, A.C., "Interactions of End-functionalized Nanotubes with Lipid Vesicles: Spontaneous Insertion and Nanotube Self-organization," *Current Nanoscience*, **5**, 699-715, (2011)

42. Chen, I.C., Kuksenok, O., Yashin, V.V., Moslin, R.M., Balazs, A.C., and Van Vliet, K.J., "Shape- and Size-Dependent Patterns in Self-Oscillating Polymer Gels," *Soft Matter*, **7**, 3141-3146 (2011)

41. Dutt, M., Kuksenok, O., Little S.R., and Balazs, A.C., "Forming transmembrane channels using end-functionalized nanotubes," *Nanoscale*, **3** (1), 240 – 250, (2011)

40. Yashin, V.V., Kuksenok, O., and Balazs, A.C., "Computational Design of Active, Self-Reinforcing Gels," *J. Phys. Chem. B*, **114**, (19), 6316-6322, (2010)

39. Dayal, P., Kuksenok, O., and Balazs, A.C., "Designing autonomously motile gels that follow complex paths," *Soft Matter*, **6** (4), 768 (2010)

38. Kuksenok, O., Yashin, V.V., Dayal, P., and Balazs, A.C., "Copying from nature: Designing adaptive, chemoresponsive gels," *Polymer Physics*, **48** (24), 2533, (2010)

37. Yashin, V.V., Kuksenok, O., and Balazs, A.C., "Modeling Autonomously Oscillating Chemo-Responsive Gels," *Progress in Polymer Science*, **35** (1-2), 155, (2010)

36. Kuksenok, O., Yashin, V.V., and Balazs, A.C., "Spatial confinement controls self-oscillations in polymer gels undergoing the Belousov-Zhabotinsky reaction," *Phys. Rev. E*, **80**, 056208 (2009)

35. Balazs, A.C., Kuksenok, O., and Alexeev, A., "Modeling the Interactions between Membranes and Inclusions: Designing Self-Cleaning Films and Resealing Pores," *Macromol. Theory Simul.*, **18** (1), 11–24 (2009)

34. Kuksenok, O., Yashin, V.V., and Balazs, A.C., "Global signaling of localized impact in chemo-responsive gels," *Soft Matter*, **5**, 1835-1839 (2009)

33. Dayal, P., Kuksenok, O., and Balazs, A.C., "Using Light to Guide the Self-Sustained Motion of Active Gels," *Langmuir*, **25** (8), 4298–4301 (2009)

32. Dayal, P., Kuksenok, O., and Balazs, A.C., "Forming ordered structures in ternary, photosensitive blends through the use of masks," *Soft Matter*, **5**, 1205 - 1213 (2009)

31. Kuksenok, O., Yashin, V.V., and Balazs, A.C., "Three-dimensional model for chemoresponsive polymer gels undergoing the Belousov-Zhabotinsky reaction," *Phys. Rev. E* **78**, 041406 (2008).

30. Kuksenok, O., and Balazs, A.C., "Gradient Sensing in Reactive, Ternary Membranes," *Langmuir*, **24** (5), 1878 (2008).

29. Dayal, P., Kuksenok, O., and Balazs, A.C., "Using a Single Mask to Create Multiple Patterns in Three-Component, Photoreactive Blends," *Langmuir*; **24**(5) 1621 (2008)

28. Kuksenok, O., and Balazs, A.C., "Modeling Multi-Component Reactive Membranes," *Phys. Rev. E* **75**, 051906 (2007)

27. Kuksenok, O., Yashin, V.V., and Balazs, A.C., "Mechanically Induced Chemical Oscillations and Motion in Responsive Gels," *Soft Matter* **3**, 1138 (2007)

26. Kuksenok, O., Travasso, R.D.M., and Balazs, A.C., "Dynamics of ternary mixtures with photosensitive chemical reactions: Creating three dimensionally ordered blends," *Phys. Rev. E* **74,** 011502 (2006)

25. Travasso, R.D.M., Kuksenok, O., and Balazs, A.C., "Exploiting Photo-induced Reactions in Polymer Blends to Create Hierarchically Ordered, Defect-free Materials," *Langmuir* **22**(6), 2620-2628 (2006).

24. Kuksenok, O., Jasnow, D., and Balazs A.C., **"**Local control of periodic pattern formation in binary fluids within microchannels," *Phys. Rev. Lett.* **95**, 240603 (2005)

23. Travasso, R.D.M., Kuksenok, O., and Balazs, A.C., "Harnessing Light to Create Defect Free, Hierarchically Structured Polymeric Materials," *Langmuir* **21**(24), 10912-10915 (2005).

22. Balazs, A.C., Verberg R., Pooley C.M., Kuksenok O., "Modeling the flow of complex fluids through heterogeneous channels," *Soft Matter* **1** (1), 44-54 (2005).

21. Travasso, R.D.M., Buxton G.A., Kuksenok, O., Good, K., and Balazs, A.C., "Modeling the morphology and mechanical properties of sheared ternary mixtures," *J. Chem. Phys.* **122**, 194906 (2005).

20. Pooley, C.M., Kuksenok, O., and Balazs, A.C., "Convection-driven pattern formation in phase-separating binary fluids," *Phys. Rev. E* **71**, 030501 (2005).

19. Kuksenok, O., and Balazs, A.C., "Structures formation in binary fluids driven through patterned microchannels: effect of hydrodynamics and arrangement of surface patterns," *Physica D,* **198** (3-4): 319-332 (2004).

18. Good, K., Kuksenok, O., Buxton, G.A., Ginzburg, V.V., and Balazs, A.C., "Effect of hydrodynamic interactions on the evolution of chemically reactive ternary mixtures," *J. Chem. Phys.* **121** (12), 6052-6063 (2004).

17. Kuksenok, O., Jasnow, D., and Balazs, A.C., "Diffusive Intertwining of Two Fluid Phases in Chemically Patterned Microchannels," *Phys. Rev. E* **68**, 051505 (2003).

16. Kuksenok, O., Jasnow, D., Yeomans, J.M., and Balazs, A.C., "Periodic Droplet Formation in Chemically Patterned Microchannels," *Phys. Rev. Lett.* **91**, 108303 (2003).

15. Kuksenok, O., and Balazs, A.C., "Simulating the dynamic behavior of immiscible binary fluids in three-dimensional chemically patterned microchannels**,"** *Phys. Rev. E* **68**, 011502 (2003).

14. Suppa, D., Kuksenok, O., Balazs, A.C., and Yeomans, J.M., "Phase separation of a binary fluid in the presence of immobile particles: A lattice Boltzmann approach," *J. Chem. Phys.* **116** (14), 6305-6310 (2002).

13. Kuksenok, O., Yeomans, J.M., and Balazs, A.C., "Using patterned substrates to promote mixing in microchannels," *Phys. Rev. E* **65** (3), 031502 (2002).

12. Suppa, D., Kuksenok, O., Balazs, A.C. and Yeomans, J.M., "Effect of Stationary Particles on the Phase Separation of Binary Fluids," *Polymer Interfaces and Thin Films*, Materials Research Society, Pittsburgh, 61 (2002).

11. Ouskova, E., Reznikov, Y., Shiyanovskii, S.V., Su, L., West, J.L., Kuksenok, O., Fran-cescangeli, O., and Simoni, F., "Photo-orientation of liquid crystals due to light-induced desorption and adsorption of dye molecules on an aligning surface," *Phys. Rev. E* **64** (5), 051709 (2001).

10. Kuksenok, O., Yeomans, J.M., and Balazs, A.C., "Creating localized mixing stations within microfluidic channels," *Langmuir* **17** (23), 7186-7190 (2001).

9. Kuksenok, O., and Shiyanovskii, S.V., "Surface control of dye adsorption in liquid crystals," *Mol.. Cryst. Liq. Cryst.* **359**, 427-438 (2001).

8. Fedorenko, D., Ouskova, E., Reznikov, Y., Shiyanovskii, S.V., Su, L., West, J.L., Kuksenok, O., Francescangeli, O., Simoni. F., "Adsorption-driven Photoalignment of Dye-Doped Liquid Crystals," *Phys. Rev. E* **63** (2), 021701 (2001).

7. Kuksenok, O., and Shiyanovskii, S.V., "Structural changes around a spherical particle in nematic," *Ukrainian Physical Journal*, **43** (3), 305-312 (1998).

6. Kuksenok, O., and Shiyanovskii, S.V., "Structural transitions in nematic filled with colloid particles," *Mol. Cryst. Liq. Cryst*., **321**, 489-500 (1998).

5. Kuksenok, O., and Shiyanovskii, S.V., "The radiation effect on the structural transitions in nematics with colloid particles," *Ukrainian Physical Journal*, **43**(8), 826-828 (1998).

4. Kuksenok, O., Ruhwandl, R.W., Shiyanovskii, S.V.**,** and Terentjev, E.M., "Director structure around a colloid particle in a nematic liquid crystal," *Phys. Rev. E*, **54**, 5198-5204 (1996).

3. Kuksenok, O., and Shiyanovskii, S.V., "Study of structures in heterogeneous system: nematic liquid crystal with spherical particles," *Ukrainian Physical Journal*, **41**(2), 190-192 (1996).

2. Kuksenok, O., Sugakov, V.I., and Shiyanovskii, S.V., "Conductivity of liquid crystals with donor and acceptor dopants under irradiation," *Ukrainian Physical Journal*, **39** (6), 692-695 (1994).

1. Kuksenok, O., Sugakov, V.I., and Shiyanovskii, S.V., "On the mechanism of negative effect of ionizing irradiation on conductivity of liquid crystals," *Ukrainian Physical Journal*, **37** (4), 589-594 (1992).

Conference Proceedings

4. Dutt, M., Kuksenok, O., and Balazs, A.C., "Designing Tunable Bio-nanostructured Materials via Self-Assembly of Amphiphilic Lipids and Functionalized Nanotubes," *Materials Research Society Proceedings*, **1464** (2012).

3. Suppa, D., Kuksenok, O., Balazs, A.C., and Yeomans J. M., "Effect of Stationary Particles on the Phase Separation of Binary Fluids," *Materials Research Society Proceedings*, **710**, 61-66 , Warrendale, PA (2002).

2. Shiyanovskii, S.V., Kuksenok, O., Ruhwandl, R.W., and Terentjev, E.M., "Topological defects in a nematic filled with colloid particles," *Proceedings of SPIE*, 2949, 33-37, Imaging Sciences and Display Technologies, Crimea, Ukraine (February 1997).

1. Shiyanovskii, S.V., and Kuksenok, O., "Study of structures in filled nematics with spherical particles," *Proceedings* of SPIE, 2795, 121-125, Nonlinear Optics of Liquid and Photorefractive Crystals, Berlin, Germany, (April, 1996).

PRESENTATIONS

34. "Modeling gel-based composites," *MRS Fall*, Boston, MA, (Dec, 2015)

33. "Designing biomimetic gel-based composites," *12th International Symposium on Stimuli-responsive Materials*, Santa Rosa, CA, (Oct, 2015)

32. "Stimuli-induced Reconfiguration and Directed Motion of Chemo-responsive Gels," *Nonlinear Dynamics in Chemical Systems*, Tempe, AZ, (Sep, 2015)

31. "Shape Changes and Active Motion of Dual-functionalized Gels," *Polymer Networks Group Meeting & Gel Symposium* Tokyo, Japan (Nov. 2014).

30. "Shape-shifting and Self-propelled Motion of Spirobenzopyran-functionalized Self-oscillating Gels," *MRS Spring* (Apr, 2014).

29. "Modeling Spirobenzopyran-Functionalized Self-Oscillating Gels: Focus on 3D Shape Changes and Self-Propelled Motion," *Gordon Research Conferences*, Girona, Spain (July 13-18, 2014).

28. "Light-induced reconfiguration and directed motion of chemo-responsive gels," *International Workshop on Micro- and Nanomachines*, Hannover, Germany (July 2-5, 2014).

27. "Modeling stimuli-responsive reconfiguration and directed motion of self-oscillating gels," *9th International Symposium on stimuli-responsive materials*, Santa Rosa, CA (October 20-23, 2013).

26. "Modeling photo-induced reconfiguration and directed motion of active gels," *7th International Conference on Engineering of Chemical Complexity*, Rostock-Warnemünde, Germany (10-13 June 2013).

25. "Designing active polymer gels with biomimetric functionality: from reconfiguration to directed motion and autochemotaxis," *Colloquium at Leibniz Institute of Polymer Research*, Dresden (Jun 6, 2013).

24. "Toward Autonomic Response: Self-oscillating Gels." *CIMTEC 2012*, Montecatini Terme, Italy (June 10-14, 2012).

23. "Designing Synthetic Self-oscillating Cilia using Active Polymer Gels," *Advanced Energy Consortium Biannual Project Review*, Austin, TX (Dec. 7, 2010).

22. “Modeling Multi-Component Reactive Polymeric Systems,“ *Department of Macromolecular Science and Engineering, Graduate School of Science and Technology*, Kyoto Institute of Technology, Kyoto, Japan (Sep. 1, 2010).

21. “Confinement-Directed Dynamic Patterning in Chemo-Responsive Gels,” *Gordon Research Conference: Oscillations & Dynamic Instabilities in Chemical Systems*, Lucca (Barga), Italy (July 4-9, 2010).

20. “Controlling bending of chemo-responsive gels with gradient in cross-link density,” *APS March Meeting*, Portland, OR (March 15–19, 2010).

19. “Self-oscillating Gels as Stimuli-Responsive Materials,” *International Symposium on Stimuli-Responsive Materials*, Hattiesburg, MS (October 27 - 28, 2009).

18. “Global signaling of localized impact in chemo-responsive gels,” *2nd International Conference on Self-Healing Materials 2009*, Chicago, IL (June 28-July 1, 2009).

17. “Effect of Confinement on the Dynamics of Three-Dimensional Chemo-responsive Gels,” *2009 APS March Meeting*, Pittsburgh, PA (March 16–20, 2009).

16. “Modeling mechanochemical transduction in chemo-responsive gels,” *2007 APS March Meeting*, Denver, CO (March 5–9, 2007).

15. “Multi-component reactive membranes: a computer simulation study,” *2001 MRS Fall Meeting*, Boston, MA (Nov 27-Dec 1, 2006).

14. “Dynamics of ternary mixtures with photosensitive chemical reactions: designing three dimensionally ordered blends,” *Annual APS March Meeting 2006*, Baltimore, MD (March 13-17, 2006).

13. “Harnessing light to create defect free, hierarchically structured polymeric materials,” *168th Technical Meeting of the Rubber Division, ACS* in Pittsburgh, PA (Nov 1-3, 2005).

12. “Local control of periodic pattern formation in driven binary immiscible fluid,” *Annual APS March Meeting 2005*, Los Angeles, CA (March 21-25, 2005).

11. “Modeling non-equilibrium phenomena in multi-component systems,” *Department of Materials Science and Engineering at Pennsylvania State University*, PA (October 28, 2004).

10. “Diffusive entwining and slug-like flow in patterned microchannels,” *Annual APS March Meeting 2004*, Montreal, Canada (March 20 - 26, 2004).

9. “Modeling equilibrium and non-equilibrium phenomena in complex fluids,” *North Dakota State University, Physics Department*, ND (March 11, 2004).

8. “Using chemical patterning to direct the flow of binary fluids in microchannels,” *Tribology Programm Review*. US Naval Academy, Annapolis, MD (August 13-14, 2003).

7. “Oscillatory behavior and pattern formation in binary fluid flowing in patterned Microchannel,” *2003 MRS spring meeting*, San Francisco, CA (April 21-25, 2002).

6. “Dynamics of binary fluids in patterned microchannels: periodic droplet formation and memory effect,” *Annual APS March Meeting 2003*, Austin, TX (March 3 - 7, 2003).

5. “Modeling the flow of binary fluid in patterned microchannels,” *AIChE 2002 Annual Meeting*, Indianapolis, IN (November 3-8, 2002).

4. “Flow of binary fluids over patterned substrates within microchannels,” *2002 MRS spring meeting*, San Francisco, CA (April 1-5, 2002).

3. “Dynamics of binary fluid within 3D microchannel with chemically patterned substrates,” *Annual APS March Meeting 2002*, Indianapolis, IN (March 18 - 22, 2002).

2. “Structural transitions in nematic filled with colloid particles,” *7th International Topical Meeting on Optics of Liquid Crystals*, Heppenheim, Germany (September 8-12, 1997).

1. “Conductivity of liquid crystals under irradiation,” *1st International Conference "Electronic Processes in Organic Materials"*, Kiev, Ukraine (August 1996).

HONORS AND AWARDS

Scholarship of the President of Ukraine for Young Scientist (1998 – 2000).
Young Scientist Award of the Ukrainian Academy of Sciences (1997).

SPONSORED RESEARCH

“Combing With Light to Create Hierarchically Ordered Polymeric Materials” , Department of Energy, co-PI, $1,047,374, (2005-2008).

TEACHING

Courses

CHE 3922: Modeling of Soft Matter
MSE 2100: Introduction to Materials Science