CURRICULUM VITAE

Anna Christina Balazs
Chemical and Petroleum Engineering Department
209 Benedum Hall
University of Pittsburgh, Pittsburgh, PA. 15261
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PROFESSIONAL INTERESTS

Statistical mechanical and computer modeling of complex chemical systems. Developing theories for the properties of polymer blends and the behavior of polymers at surfaces and interfaces.

CURRENT POSITION

Distinguished Professor of Chemical Engineering (1/1/2005-)
Robert Von der Luft Professor (9/2001-)
Adjunct Professor (1/92-), Department of Chemistry, University of Pittsburgh, Pittsburgh, PA.

EXPERIENCE

William Kepler Whiteford Professor (9/99 - 9/2001),
Department of Chemical and Petroleum Engineering, University of Pittsburgh, Pittsburgh, PA.
Associate Professor (9/92-8/99), **Assistant Professor** (1/87-8/92), **and Bicentennial Engineering Alumni Faculty Fellow**,
Chemical and Petroleum Engineering Department (9/97-,
Materials Science and Engineering Department (1/87 - 8/97),
University of Pittsburgh, Pittsburgh, PA.

University of Massachusetts: (6/84-12/86) Research Associate in the Polymer Science and Engineering Department with Dr. Frank Karasz, Dr. William MacKnight, Dr. Isaac Sanchez, NBS.

Massachusetts Institute of Technology: (4/82-6/84) Postdoctoral research in the Chemistry Department with Dr. John Deutch.

Brandeis University: (7/81-6/83) Postdoctoral research in the Chemistry Department with Dr. Irving Epstein.

Visiting Positions:

Oxford University, UK: (9/2000-8/2001, 9/2007-8/2008) Visiting Professor in the Theoretical Physics Department; Visiting Fellow, Corpus Christi College.

The Scripps Research Institute: (7/93-12/93) Visiting Professor in the Molecular Biology Department.

University of Texas, Austin: (1/94-7/94) Visiting Professor in the Chemical Engineering Department.

EDUCATION

Ph. D., 1981. Massachusetts Institute of Technology, Cambridge, MA,
Department of Materials Science and Engineering.

Thesis Title: "Molecular Orbital Models for the Catalytic Activity of Coordinatively Unsaturated Transition Metal Complexes and Surfaces."

Thesis Committee:
Dr. K.H. Johnson, Professor of Materials Science, M. I. T.
Dr. George M. Whitesides, Professor of Chemistry, Harvard.
Dr. Robert Silbey, Professor of Chemistry, M.I.T.

S. M., 1977. Massachusetts Institute of Technology, Cambridge, MA, Department of Materials Science and Engineering.

Thesis Title: "On the Dissociation and the Reactivity of Hydrogen at Low Coordination Transition Metal Sites."

A. B. (with Honors), 1975 Bryn Mawr College, PA. Major: Physics, Minor: Mathematics

HONORS

ACS Langmuir Lecture Award, 2014

Fellow, Materials Research Society, 2014

Mines Medal, South Dakota School of Mines, 2013.

Fellow, Royal Society of Chemistry, 2010.

Board of Visitors Award, University of Pittsburgh, 2008.

Honoree, "Women in the Material World", Women and Girls Foundation of Southwest Pennsylvania , 2006

Senior Visiting Fellow, Oxford Center for Advanced Materials and Composites (OCAMAC), and Materials Science Department, Oxford University, UK (1/2004-2007)

Maurice Huggins Award of the Gordon Research Conference for outstanding contributions to Polymer Science, 2003.

Chancellor's Distinguished Research Award, Senior Category, University of Pittsburgh, 2002.

Visiting Fellow, Corpus Christi College, Oxford University, 2000 – 2001; 2007- 2008.

Special Creativity Award, National Science Foundation, 1999-2001.

Fellow, American Physical Society, 1993.

President's Distinguished Research Award, Junior Category, University of Pittsburgh, 1990.

Lilly Teaching Fellowship Award, 6/89 - 6/90.

Robert Von der Luft Professor (9/2001-)

William Kepler Whiteford Professor (9/99 - 9/2001)

Bicentennial Engineering Alumni Faculty Fellow, 9/87 - 9/99

Invited Participant, National Academy of Sciences' 6th Annual Frontiers of Science Symposium, November 3-5, 1994.

PROFESSIONAL ACTIVITIES

Leadership Positions

APS Selection Committee of the Marie Goeppert-Mayer Award, Member, 2005; Chair, 2006.

Chair, APS Division of High Polymer Physics, 2000 - 2001.
Vice-Chair; Chair-Elect, APS Division of High Polymer Physics, 1997 - 1999.
Member, Fellowship Committee, APS Division of High Polymer Physics, 1996-1997.
Member, "Physics News" Committee, APS Division of High Polymer Physics, 1994.

Continuing Symposia Chair, ACS Division of Colloid and Surface Chemistry, 1999 - .
Responsible for long range planning of technical programs at national ACS meetings.

Member, Canvassing Committee, ACS Awards in the Chemistry of Materials (1997 - 2000)

Member, Research Award Selection Committee, Society of Plastic Engineers, 1993 - 1996.

Program Committee, Adhesion Society, 1994-1995.

Meeting Organization

Organizer: DOE Workshop on Dissipative Self-Assembly as a Foundation for Biomimetic Systems, August 13-15, 2014, University of Pittsburgh, Pittsburgh, PA

Co-organizer (with Ezat Khoshdel) 2011: Stimuli Responsive and Reactive Polymer Systems, High Polymer Research Group, 51st Meeting, Sunday 17th - Thursday 21st April, 2011, Shrigley Hall Hotel, Pott Shrigley, Cheshire, UK

Co-Chair (with Dr. Jeff Brinker), Third Biennial DOE Contractors' Meeting in Biomolecular Materials, Warrenton, VA, Oct. 11-14, 2009.

Gordon Research Conferences, Selection and Scheduling Committee, Nov. 1, 2008 – Oct. 31, 2014

Scientific Committee, International Conference on Self-Healing Materials, Chicago, IL, June 28-July 1, 2009.

Co-organizer, Emergence in Chemical Systems 2.0, University of Alaska Anchorage, Anchorage, Alaska, USA, June 22-26, 2009.

Co-organizer (with A. Alexeev and T. Emrick) ACS Colloid and Surface Chemistry Division, Symposium on “Polymeric Microcapsules: Theory, Experiment and Applications”, Salt Lake City, March, 2009.

Co-organizer (with Ramanathan Nagarajan) ACS Colloid and Surface Chemistry Division, Symposium on “Polymer-Nanoparticle Systems: Theory, Simulation, Experiments”, New Orleans, April 6-10, 2008.

Co-organizer (with Julia Yeomans) of “Workshop on Mesoscale Modelling for Complex Fluids and Flows” Oxford, UK, June 25-27, 2007.

Co-organizer, MRS Symposium on "Transport Behavior in Heterogeneous Polymeric Materials and Composites", April 2007.

Overseas Representative, Conference Organizing Committee, High Polymer Research Group, UK (Moretonhampstead/Shrigley Hall Conferences), 2007-2013.

Member, International Advisory Board, “Computer Modeling and Simulations Materials Nanoworld” May 2004, Acireale, Sicily, Italy.

Member, International Advisory Board, “Polymer Nanocomposites 2003: An International Symposium on Polymer Nanocomposites Technology” Oct. 2003, Montreal, CA.

Co-Chair, Materials Research Society Meeting, April 2000.

Chairman, Gordon Research Conference on Polymers (West), Jan. 1999.

Co-organizer, ACS Division of Physical Chemistry, Symposium on "Physical Properties of Polymeric Materials and Molecular Thin Films", August 1998

Co-organizer, MRS Symposium on "Polymers in Confined Geometries", Dec. 1997.

Vice-Chairman, Gordon Research Conference on Polymers (West), Jan. 1997.

Chairman and Organizer, ACS Workshop on "Polymer Surfaces and Interfaces", Oct. 1994.

Advisory Boards

Chemical Engineering Department, Rice University, Houston, TX, Dec. 2-3, 2014.

DOE Materials Genome Initiative Grand Challenges Summit: Soft Materials, Rockville, MD, Nov.18-19, 2013.

National Science Foundation Workshop on Future Directions in Polymer Science, Santa Barbara, CA, August 15-16, 2013.

Materials Council for Materials Sciences and Engineering Division of DOE-BES, April 2012-

Advisory board for this division of the Department of Energy, Basic Energy Sciences.

International Panel to Review Standing and Potential of UK Chemistry Research, Organized by the Royal Society of Chemistry, April 19-26, 2009.

Role of 18-member panel was to assess chemistry research in UK universities.

National Academy Panel on Chemical Science and Technology, Thermophysical Properties Division Review, NIST, Boulder CO, Feb. 12-13, 2009.

National Science Foundation Workshop on Future Directions in Polymer Science, August 15-16, 2007.

National Science Foundation Workshop on Complexity and Emergence, Steering Committee Member, May 13-15, 2007.

Department of Energy, Committee of Visitors, Materials Division, Basic Energy Sciences, April 2006.

UK College of Reviewers (Panel that reviews EPSRC grants in the UK), 2005-2009.

Science and Engineering External Advisory Board, Center for Materials Science and Engineering, M.I.T., 2005-2009.

Department of Energy, Review Panel for the Frederick Seitz Materials Research Laboratory, University of Illinois, May 18-20, 2005.

National Science Foundation MPS Theory Workshop, Oct. 28-29, 2004.

American Physical Society, Public Policy Committee, Jan. 2004-2007.

The 12-member committee addresses those science policy issues that affect the development of physics for the nation's scientific and technological needs. The committee makes recommendations to the APS.

National Science Foundation Workshop on Grand Challenges in Nanomaterials, June 11-13, 2003.

National Science Foundation Workshop on Chemical Bonding Centers, May 17-18, 2003.

Visiting Committee, Cornell University, Cornell Center for Materials Research, Nov. 11-12, 2002.

International Panel to Review Standing and Potential of UK Chemistry Research, Organized by the Royal Society of Chemistry, Oct. 27-Nov. 3, 2002.

Role of twelve-member panel was to assess chemistry research in UK universities.

Nanotechnology Roadmap Workshop, Organized by Chemical Industry Vision 2020 Technology Partnership, National Nanotechnology Initiative and DOE., Sept 30-Oct. 2, 2002.

Role of group was to prepare a nanotechnology/nanomaterials roadmap that prioritizes the R&D needs of the chemical and materials processing industries.

DOE Study Panel on Macromolecules at Surfaces and Interfaces, Santa Fe, NM, 2001.

Army Research Office Workshop on Slow Processes: Molecular Events Leading to Macroscopic Failure, Durham, NC, August, 2000.

Visiting Committee, Lehigh University, Zettlemoyer Center for Surface Science, 1999 – 2002.

National Science Foundation Special Emphasis Panel on Materials Theory, 1998.

National Science Foundation Workshop on Interdisciplinary Macromolecular Science and Engineering, 1997

Technical Advisory Board, The Dow Chemical Company (1995 - 1996).

Role of board is to assist in the identification of new businesses and products for Dow Chemical.

Naval Studies Board Panel on Polymers, organized by National Academy of Sciences and National Research Council (1993-1994).

Role of panel was to determine the future direction of polymer research at the Naval Research Laboratory.

Editorial Boards

Member, Editorial Advisory Boards:

Materials Research Express (MRX) (2014-
Computational Materials Science (2014-
Polymer Reviews (2005 –
Langmuir (2012-2014)
Soft Matter (2008-2014)
Journal of Macromolecular Science Part A: Pure and Applied Chemistry (2008)
Journal of Computational and Theoretical Nanoscience (2004 - 2006)
European Polymer Journal (2000 - 2008)
Journal of Polymer Science B: Polymer Physics (2000 - 2002)
Macromolecular Theory and Simulations (1995 - 2002)
Computational and Theoretical Polymer Science (1999 - 2001)
Macromolecules (1996 - 1999)
Langmuir (1996 -1999)
Accounts of Chemical Research (1994 - 1997)

Specialist Editor, *Computer Physics Communications* (1997 - 2003).

Serve as editor for papers on polymer physics and physical chemistry.

Guest Editor, *Materials Research Society Bulletin*, Special issue on "Theory and Simulations of Polymer Surfaces and Interfaces", January 1997.

CONSULTING

Dow Chemical Company, Midland, MI (1998 - 2007)

Dow Corning, Midland, MI (2000 - 2004)

Aristech, Pittsburgh, PA (1997 - 1998)

Hoechst Celanese, Summit, NJ (1989 - 1996)

Mitsubishi Chemical Corporation, Okayama, Japan (1995 - 1996)

Pannier Corporation, Pittsburgh, PA (1991)

PUBLICATIONS

Journal Articles

285. Yong, X., Simakova, A., Averick, S., Gutierrez, J., Kuksenok, O., Balazs, A.C., and Matyjaszewski, K., "Stackable, Covalently-Fused Gels: Repair and Composite Formation", *Macromolecules*, submitted.

284. Kuksenok, O. and Balazs, A.C., "Designing Dual-functionalized Gels for Self-reconfiguration and Autonomous Motion", *Scientific Reports*, submitted.

284. Iyer, B.V.S. Yashin, V.V., and Balazs, A.C., "Harnessing Biomimetic Catch Bonds to Create Mechanically Robust Nanoparticle Networks", *Polymer*, submitted.

283. Ankita Shastri, Ximin He, Lynn McGregor, Ya Liu, Maritza Mujica, Yolanda Vasquez, Amitabh Bhattacharya, Yongting Ma, Michael Aizenberg, Olga Kuksenok, Anna Balazs, and Joanna Aizenberg "Chemo-mechanically Modulated Biomolecule "Catch and Release" with Aptamer-functionalized Reconfigurable Systems", *Nature Chemistry*, submitted.

282. Iyer, B.V.S., Hamer, M.J., Yashin, V.V., Kowalewski, T., Matyjaszewski, K. and Balazs, A.C., "Ductility, toughness and strain recovery in self-healing dual cross-linked nanoparticle networks studied by computer simulations", *Progress in Polymer Science*, in press. DOI: 10.1016/j.progpolymsci.2014.07.004

281. Kuksenok, O., Deb, D., Yong, X. and Balazs, A.C., "Designing Biomimetic, Reactive Polymer Gels", *Materials Today*, 17 (2014) 486-493; DOI: 10.1016/j.mattod.2014.06.003

280. Hamer, M. J., Iyer, B.V.S. Yashin, V.V., and Balazs, A.C., Designing Mechanomutable Composites: Reconfiguring the Structure of Nanoparticle Networks through Mechanical Deformation, *Nano Letters*, 14 (2014) 4745–4750

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

278. Averick, S., Karácsony, O., Yong, X., Moellers, N.M., Woodman, B.F., Zhu, W., Mehl, R.A., Balazs, A.C., Kowalewski, T., and Matyjaszewski, K., "Cooperative, Reversible Self-assembly of Covalently Pre-linked Proteins into Giant Fibrous Structures", *Angewandte Chemie*, 53 (2014) 8050-8055.

277. Iyer, B.V.S, Yashin, V.V., and Balazs, A.C., "Dynamic Behavior of Dual Cross-linked Nanoparticle Networks under Oscillatory Shear", *New Journal of Physics*, 16 (2014) 075009 (26 pages).

276. Kosif, I., Chang, C.C., Bai, Y., Ribbe, A. E., Balazs, A. C. and Emrick, T.S. "Picking up Nanoparticles with Functional Droplets", *Advanced Materials Interfaces*, 1 (2014) 1400121 DOI: 10.1002/admi.201400121

275. 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.

274. Dayal, P., Kuksenok, O., and Balazs, A.C, "Perspective: Directing the Behavior of Active, Self-oscillating Gels with Light", *Macromolecules*, 47 (2014) 3231-3242

273. Balazs, A.C., Bhattacharya, A., Tripathi, A. Shum, H. "Designing Bio-inspired Artificial Cilia to Regulate Particle-Surface Interactions", *Journal of Physical Chemistry Letters*, 5 (2014) 1691−1700

272. Balazs, A. C. and Aizenberg, J. "Reconfigurable soft matter", Soft Matter, 10 (2014) 1244-1245

271. Tripathi, A, Shum, H., and Balazs, A.C., "Fluid-driven Motion of Passive Cilia Enables the Layer to Expel Sticky Particles", *Soft Matter*, 10 (2014) 1416 – 1427.—web published, Dec. 10, 2013.

270. Hamer, M.J., Iyer, B.V.S., Yashin, V.V., Kowalewski, T., Matyjaszewski, K. and Balazs, A.C., "Modeling Polymer Grafted Nanoparticle Networks Reinforced by High-strength Chains", *Soft Matter*, 10 (2014) 1374-1383.—web published, Dec. 9, 2013.

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

268. Yong, X., Crabb, E.J., Moellers, N. M., and Balazs, A.C, "Self-healing Vesicles Deposit Lipid-coated Janus Particles into Nanoscopic Trenches", *Langmuir*, 29 (2013) 16066–16074

267. Yong, X., Kuksenok, O, Matyjaszewski, K. and Balazs, AC, "Harnessing Interfacially-Active Nanorods to Regenerate Severed Polymer Gels" *Nano Letts*., 13 (2013) 6269–6274

266. Kaladhar Kamalasanan, Riccardo Gottardi, Susheng Tan, Yanan Chen, Bhaskar Godugu,

Sam Rothstein, Anna C. Balazs, Alexander Star, and Steven R. Little " 'Zero-Dimensional' Single-Walled Carbon Nanotubes", *Angewandte Chemie*, 52 (2013) 11308 –11312.

265. Shum, H., Tripathi, A, Yeomans, J.M. and Balazs, A.C., "Active Ciliated Surfaces Excel Model Swimmers", *Langmuir*, 29 (2013) 12770–12776.

264. Liu, Y. Kuksenok, O. and Balazs, A.C., "Using Light to Guide the Motion of Nanorods in Photo-responsive Binary Blends: Designing", *Langmuir*, 29 (2013) 12785–12795.

263. Dutt, M., Kuksenok, O. and Balazs, A.C., "Nano-pipette Directed Transport of Nanotube Transmembrane Channels and Hybrid Vesicles", *Nanoscale*, 5 (2013) 9773-9784.

262. Kuksenok, O. and Balazs, A.C., "Modeling the Photo-induced Reconfiguration and Directed Motion of Polymer Gels" *Adv. Func. Mater.*, 23 (2013) 4601-4610.

261. Iyer, B.V.S., Yashin, V.V., Kowalewski, T., Matyjaszewski, K. and Balazs, A.C., "Strain Recovery and Self-healing in Dual Cross-linked Nanoparticle Networks", *Polymer Chemistry*, 4 (2013) 4927 - 4939

260. 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 (2013) 7257 – 7277

259. Tripathi, A., Bhattacharya, A., and Balazs, A.C., "Size selectivity in cilia-particle interactions: Mimicking the behavior of suspension feeders" *Langmuir*, 29 (2013) 4616–4621

258. Salib, I., Yong, X., Crabb, E.J., Moellers, N. M., McFarlin, G., Kuksenok, O., and Balazs, A.C, "Harnessing Fluid-Driven Vesicles to Pick Up and Drop Off Janus Particles", *ACS Nano*, 7 (2013)1224–1238.

257. Bhattacharya, A. and Balazs, AC, "Stiffness-Modulated Motion of Soft Microscopic Particles over Active Adhesive Cilia", *Soft Matter*, 9 (2013) 3945 - 3955

256. Liu, Y., Kuksenok, O., and Balazs, A.C., "Co-assembly of Nanorods and Photosensitive Binary Blends: 'Combing" with Light to Create Periodically Ordered Nanocomposites', *Langmuir* 29 (2013) 750-760—web published Dec. 19, 2012.

255. Balazs, A.C., "Polymer Chemistry: Wasted Loops Quantified", *Nature*, 493 (2013) 172-173.

254. Yuan, P., Kuksenok, O., Gross, D.E., Balazs, A.C., Moore, J.S. and Nuzzo, R.G., "A New UV Patternable Thin Film Chemistry for Shape and Functionally Versatile Self-Oscillating Gels", *Soft Matter* 9 (2013) 1231-1243 —web published Nov., 2012.

253. Dayal, P., Kuksenok, O., and Balazs, A.C., "Reconfigurable Assemblies of Active, Autochemotactic Gels", *PNAS* 110 (2013) 431-436.—web published Dec. 27, 2012.

252. Iyer, B.V.S., Salib, I.G., Yashin, V.V., Kowalewski, T., Matyjaszewski, K. and Balazs, A.C., "Modeling the response of dual cross-linked nanoparticle networks to mechanical deformation", *Soft Matter* 9 (2013) 109-121—web published, Oct. 29, 2012.

251. Peleg, O., Savin, T., Kolmakov, G.V., Salib, I. G., Balazs, A.C., Kroger, M., Vogel, V., "Fibers with Integrated Mechano-Chemical Switches: Minimalistic Design Principles Derived from Fibronectin", *Biophysical Journal*, 103 (2012) 1909-1918.

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

249. He, X., Aizenberg, M., Kuksenok, O., Zarzar, L., Shastri, A., Friedlander, R.S., Balazs, A.C., Aizenberg, J. "Creating Homeostasis in Synthetic Materials via Self-regulating Chemo-mechano-chemical Systems with Built-in Feedback Loops" *Nature*, 487 (2012) 214-218.

248. Yashin, V.V., Suzuki, S., Yoshida, R., and Balazs, A.C., "Controlling the Dynamic Behavior of Heterogeneous Self-Oscillating Gels", *Journal of Materials Chemistry*, 22 (2012) 13625 – 13636.

247. Yashin, V., Kuksenok, O., Dayal, P, and Balazs, A.C., "Mechanochemical waves in reactive gels", *Reports on Progress in Physics*, 75 (2012) 066601 (40 pages).

246. 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", *Advanced Functional Materials*, 22 (2012) 2535-2541.

245. Epstein, I., Vanag, V, Balazs, A.C., Kuksenok, O, Dayal, P., Bhattacharya, A., "Chemical Oscillators in Structured Media", *Accounts of Chemical Research* 45 (2012) 2160-2168—web published Dec. 31, 2011.

244. Bhattacharya, A. Buxton, G.A., Usta, O.B. and Balazs, A.C., "Propulsion and Trapping of Micro-particles by Active Cilia Arrays", *Langmuir* 28 (2012) 3217-3226.

243. Kratz, K., Narasimhan, A., Tangirala, R., Moon, S.C., Revanur, R., Kundu, S., Kim, H.S., Crosby, A.J. Russell, T.P., Emrick, T., Kolmakov, G. and Balazs, A.C. "Probing damaged substrates with 'repair-and-go' ", *Nature Nanotechnology* 7 (2012) 87-90.

242. Yoon, J.A., Kamada, J., Koynov, K., Mohin, J., Nicolaÿ, R., Zhang, Y. Balazs, A.C., Kowalewski, T. and Matyjaszewski, K., "Self-healing Polymer Films Based on Thiol-Disulfide Exchange Reactions and Self-healing Kinetics Measured Using Atomic Force Microscopy", *Macromolecules* 45 (2012) 142-149—web published Dec. 16, 2011.

241. Kolmakov, G., Schaefer, A., Aronson, I. and Balazs, A.C. "Designing Mechano-responsive Microcapsules that Undergo Self-propelled Motion", *Soft Matter* 8 (2012) 180-190—web published Nov.18, 2011.

240. Dayal, P, Kuksenok, O., Bhattacharya, A., and Balazs, A.C., Chemically-mediated Communication in Self-oscillating, Biomimetic Cilia, *J. Mat. Chem,* 22 *(*2012) 241-250—web published Oct. 31, 2011.

239. Maresov, E., Kolmakov, G. V., Yashin, V.V., Van Vliet, K. and Balazs, A.C "Modeling the Making and Breaking of Bonds as an Elastic Microcapsule Moves over a Compliant Substrate", *Soft Matter* 8 (2012) 77-85—web published Oct. 4, 2011.

238. Edington, C., Murata, H., Koepsel, R., Andersen, J., Eom, S., Kanade, T., Balazs, A.C., Kolmakov, G., Kline, C., McKeel, D., Liron, Z., and Russell, A.J., "Tailoring the Trajectory of Cell Rolling with Cytotactic Surfaces", *Langmuir* 27 (2011) 15345–15351.

237. Salib, I., Kolmakov, G.V., Bucior, B.J., Peleg, O., Kröger, M., Vogel,V., Matyjaszewski, K., and Balazs, A. C. "Using Mesoscopic Models to Design Strong and Tough Biomimetic Polymer Networks", *Langmuir*, 27 (2011)13796–13805

236. Chen, W., Wang, J., Zhao, W., Li, L., Wei, X., Balazs, A.C., Matyjaszewski, K., Russell, T.P., "Photocontrol over the Disorder-to-Order Transition (DOT) in Thin Films of Polystyrene-block-Poly(methyl methacrylate) Block Copolymers Containing Photodimerizable Anthracene Functionality", *J. Am. Chem. Soc*., 133 (2011) 17217-17224.

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

234. Yan, L.-T. and Balazs, A.C. "Self-Assembly of Nanorods in Ternary Mixtures: Promoting the Percolation of the Rods and Creating Interfacially Jammed Gels" *Journal of Materials Chemistry,* 21 (2011) 14178 – 14184.

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

232. Le Li, Caroline Miesch, P. K. Sudeep, Anna C. Balazs, Todd Emrick, Thomas P.Russell, Ryan C. Hayward, "Kinetically trapped co-continuous polymer morphologies through intra-phase gelation of nanoparticles" *Nano Letters*, 11 (2011) 1997–2003.

231. Chen, W., Wei, X., Balazs, A. C., Matyjaszewski, K, and Russell, T. P.,"Phase Behavior and Photoresponse of Azobenzene-Containing Polystyrene-block-poly(n-butyl methacrylate) Block Copolymers" *Macromolecules*, 44 (2011) 1125-1131.

230. Salib, I.; Kolmakov, G.; Gnegy, C.; Matyjaszewski, K.; Balazs, A.C. "Role of Parallel Reformable Bonds in the Self-Healing of Crosslinked Nanogel Particles", *Langmuir*, 27 (2011) 3991–4003.

229. Kuksenok, O., Yashin, V.V., Kinoshita, M., Sakai, T., Yoshida, R., 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 (2011) 8360-8371.

228. Kolmakov, G. V., Yashin, V.V., Levitan, S.P., Balazs, A.C "Designing Self-propelled Microcapsules for Pick-up and Delivery of Microscopic Cargo", *Soft Matter*, 7 (2011) 3168-3176.

227. Kolmakov, G. V., Yashin, V.V., and Balazs, A.C., "Design Rules for Creating Sensing and Self-actuating Microcapsules", *Smart Structures and Systems*, 7 (2011) 199-211.

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

225. Duki, S.F., Kolmakov, G. V., Yashin, V., Kowalewski, T., Matyjaszewski, K. and. Balazs, A.C., "Modeling the Nano-scratching of Self-healing Materials", *J. Chem. Phys*., 134 (2011), 084901 (12 pages).

224. Chen, W., Wang, J-Y., Wei, X., Xu, J., Balazs, A. C., Matyjaszewski, K. Russell, T.P. "UV-enhanced Ordering in Azobenzene-containing Polystyrene-block-Poly(n-Butyl Methacrylate) Copolymer Blends, *Macromolecules*, 44 (2011) 278–285

223. Yan, L.-T., Maresov, E., Buxton, G.A. and Balazs, A.C., "Self-Assembly of Mixtures of Nanorods in Binary, Phase-separating Blends", *Soft Matter*, 7 (2011) 595-607—web published Nov. 22, 2010.

222. Dutt, M., Kuksenok, O., Little, S.R., and Balazs, A.C., "Forming Trans-membrane Channels Using End-functionalized Nanotubes", *Nanoscale*, 3 (2011) 240 – 250—web published, Oct. 26, 2010.

221. Kuksenok, O. Yashin, V. V., Dayal, P. and Balazs, A.C., "Copying from Nature: Designing Adaptive, Chemo-responsive Gels", *Journal of Polymer Science, Part B: Polymer Physics*, 48 (2010) 2533-2541.

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