

## PART 1. CURRICULUM VITAE

NAME Bartosz A. v.P. Grzybowski	POSITION TITLE Associate Professor of Chemical And Biological Engineering and of Chemistry		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MTH/YR(s)	FIELD OF STUDY
Yale University, New Haven, CT	B.S.	6/1995	Chemistry
Yale University, New Haven, CT	M.Sc.	6/1995	Chemistry
Harvard University, Cambridge, MA	Ph.D.	11/2000	Chemistry

### A. Positions and Honors:

#### Professional Experience

10/2000 – 7/2001	Postdoctoral Fellow, Harvard University
7/2001 – 8/2003	Director of Research, Concurrent Pharmaceuticals and Associate of the Department of Chemistry and Chemical Biology, Harvard University
7/2002 – present	Chief Scientific Officer, ProChimia Surfaces, Ltd.
9/2003 – 8/2007	Assistant Professor, Northwestern University, Department of Chemical and Biological Engineering and Department of Chemistry
9/2007 – present	Tenured Associate Professor, Northwestern University, Department of Chemical and Biological Engineering and Department of Chemistry

#### Honors

1995	Arthur Fleischer Award for Outstanding Performance in Chemistry, Yale University
1995	Honoris in Chimia, Yale University
1995	Summa cum Laude, Yale University
2003	Camille and Henry Dreyfus New Faculty Award
2006	NSF CAREER Award
2006	3M Non-Tenured Faculty Award
2006	Pew Scholar in the Biomedical Sciences
2006	American Chemical Society Division of Colloid and Surface Chemistry Unilever Award
2007	Sloan Fellowship
2007	Camille Dreyfus Teacher-Scholar Award
2008	Gerhard Kanig Biannual Award for Innovation (Berliner-Brandenburgischer Verband für Polymerforschung, Germany)

**B. Scientific interests:** self-assembly in equilibrium and non-equilibrium regimes, light-controlled materials, nanoscience, nanostructured materials for plasmonics and energy storage, energy-efficient and parallel synthesis, complex chemical networks and systems, systems' chemistry, cell biology and biomimetic materials.

**C. Books authored.** B.A. Grzybowski "Chemistry in Motion: Reaction-Diffusion Systems for Micro- and Nanotechnology" Wiley, 2009, ISBN: 978-0-470-03043-1).

## D. Peer Reviewed Publications

### Submitted:

- [108] J. Kim, Y. Wei & B.A. Grzybowski\* Selective Self-Assembly of Nanoparticles via Click Chemistry.
- [107] I. Lagzi, B. Kowalczyk & B.A. Grzybowski\* Rational design of Liesegang-like rings from “nanoionic” particles.
- [106] Y. Wei, S. Chen, B. Kowalczyk, S. Huda, T. P. Gray & B.A. Grzybowski\* Synthesis of Stable, Low-dispersity Copper Nanoparticles and Nanorods and Their Antifungal and Catalytic Properties
- [105] B. Kowalczyk, M.M. Apodaca, S. Soh & B.A. Grzybowski\* Rapid deposition of hydrophobic nanoparticle monolayers onto hydrophilic surfaces from liquid-liquid interfaces.
- [104] K. P. Browne, R. Klajn, J. A. Villa, B. A. Grzybowski\*, “Mechanofabrication of “pancake” and rod-like nanostructures from deformable nanoparticles aggregates”
- [103] M. A. Olson, A. Coskun, R. Klajn, L. Fang, S. K. Dey, K. P. Browne, B. A. Grzybowski\*, J. F. Stoddart\*, “Assembly of polygonal clusters directed by reversible noncovalent bonding interactions”,
- [102] S. Huda, S.K. Smoukov, H. Nakanishi, B. Kowalczyk, K.J.M Bishop & B.A. Grzybowski\* Nanoparticle monolayers on chemically inert surfaces exhibit antimicrobial properties through controlled ion release (2009),

### In Press:

- [101] H.Nakanishi, K.J.M. Bishop, B.Kowalczyk, E.A. Weiss, A.Nitzan, K.V. Tretiakov, M.M . Apodaca, R. Klajn, J.F. Stoddart & B.A. Grzybowski\* Photoconductance and inverse photoconductance in films of functionalized metal nanoparticles, *Nature* (2009).
- [100] G. Mahmud, C.J. Campbell, K.J.M. Bishop, Y.A. Komarova, O. Chaga, S. Soh, S. Huda, K. Kandere-Grzybowska\* & B.A. Grzybowski\* Directing cell motions on micropatterned ratchets, *Nature Physics* (2009).
- [99] B. Kowalczyk, M.M. Apodaca, H. Nakanishi, S.K. Smoukov & B.A. Grzybowski\* Lift-off and micropatterning of mono- and multilayer nanoparticle films, *Small* (2009)
- [98] K.J.M. Bishop, C.E. Wilmer, S. Soh & B.A. Grzybowski\* Nanoscale forces and their uses in self-assembly, *Small* (2009)
- [97] R. Klajn, K.J.M. Bishop, P.J. Wesson & B.A. Grzybowski\* Writing Self-Erasing Images using Metastable Nanoparticle "Inks" *Angew. Chem. Int. Ed.* (2009). **COVER ART**
- [96] R. Orlik, A.C. Mitus\*, B. Kowalczyk, A.Z. Patashinski & B.A. Grzybowski\* Computer Simulation of Self-Assembly (Crystallization) of Oppositely Charged Nanoparticles with Various Size Distributions *J. Non-Cryst. Sol.* (2009)
- [95] B.A. Grzybowski\*, C.E. Wilmer, M. Fialkowski, Mechanical and Electrical Properties of Nanostructured “Plastic Metals” *J. Non-Cryst. Sol.* (2009)

### Published:

- [94] B. Kowalczyk, K.J.M. Bishop, S. Smoukov & B.A. Grzybowski\* Synthetic popularity reflects chemical reactivity: Reactivity measures based on the counts of literature-reported reactions. *J. Phys. Org. Chem.* DOI:10.1002/poc.1535 (2009).
- [93] K.V. Tretiakov, K.J.M. Bishop, & B.A. Grzybowski\*, Additivity of the excess energy dissipation rate in a dynamically self-assembled system, *J. Phys. Chem. B* **113**, 7574-7578 (2009).
- [92] P.J. Wesson, S. Soh, R. Klajn, K.J.M. Bishop, T.P. Gray & B.A. Grzybowski\* “Remote” Fabrication via Three-Dimensional Reaction-Diffusion: Making complex core-and-shell particles and assembling them into open-lattice crystals *Adv. Mater.* **21**, 1911-1915 (2009). **COVER ART**
- [91] B.A. Grzybowski\*, K.J.M. Bishop, B. Kowalczyk, C.E. Wilmer The wired universe of organic chemistry *Nature Chemistry* **1**, 31-36 (2009).

- [90] R. Klajn, L. Fang, A. Coskun, M.A. Olson, P.J. Wesson, J.F. Stoddart\*, & Bartosz A. Grzybowski\* Metal Nanoparticles Functionalized with Molecular and Supramolecular Switches. *J. Am. Chem. Soc.* **131**, 4233–4235 (2009)
- [89] K.V. Tretiakov, K.J.M. Bishop, B. Kowalczyk, A. Jaiswal, M.A. Poggi & B.A. Grzybowski\*, Mechanism of the Cooperative Adsorption of Oppositely Charged Nanoparticles, *J. Phys. Chem. A*, **113**, 3799-3803 (2009)
- [88] B.Kowalczyk, G. Mahmud, M. Byrska, S. Huda, K. Kandere-Grzybowska & B.A. Grzybowski\* Nanoparticle-based, solution deposition of gold films supporting bioresistant SAMs *Langmuir* **25**, 1905-1907 (2009).
- [87] B.A. Grzybowski\*, C.E. Wilmer, J. Kim, K. Browne, K.J.M. Bishop Self-assembly: From crystals to cells, *Soft Matter* **5**, 1110 - 1128 (2009).
- [86] M.A. Olson, A.B. Braunschweig, L.Fang, T. Ikeda, R. Klajn, A. Trabolsi, B.A. Grzybowski\* & J. F. Stoddart\* Bistable Side-chain Poly[2]catenane Based Nanostructures, *Angew. Chem. Int. Ed.* **48**, 1792-1797 (2009).
- [85] K.V. Tretiakov, K.J.M. Bishop & B.A. Grzybowski\* On the dependence between forces and dissipation rates mediating Dynamic Self-Assembly *Soft. Matter* **5**, 1279 - 1284 (2009).
- [84] B. Kowalczyk, A.M. Kalsin, R. Orlik, K.J.M. Bishop, A.Z. Patashinskii, A.Mitus & B. A. Grzybowski\* Size-selection during crystallization of oppositely charged nanoparticles *Chem. Eur. J.* **15**, 2032-2035 (2009). **COVER ART**
- [83] C. J. Campbell, M. Fialkowski, I, K.J.M. Bishop & B.A. Grzybowski\* “Ratchet” mechanism of reactive spreading and direct, visual determination of the kinetics of self-assembled monolayer formation *Langmuir* **25**, 9-12 (2009).
- [82] B.A. Grzybowski\* & K.J.M. Bishop Micro and nanoprinting into solids using reaction diffusion etching and hydrogel stamps, *Small* **5**, 22-27 (2009) **COVER ART**
- [81] K.J.M. Bishop, B.Kowalczyk & B.A. Grzybowski\* Precipitation of oppositely charged nanoparticles by dilution and/or temperature increase *J. Phys. Chem. C* **113**, 1413-1417 (2009).
- [80] P.J. Wesson & B.A. Grzybowski\*, Lattice-gas models to assist Fabrication by Reaction Diffusion, in *Unconventional Nanofabrication*, Rogers and Lee, Eds. Wiley (2008).
- [79] C. J. Campbell, S. Soh & B.A. Grzybowski\*, Strong influence of hydrogen bonding on the composition of mixed-SAMs revealed by Wet Stamping and fluorescence microscopy, *Langmuir* **24**, 11600 - 11604 (2008).
- [78] Y-H. Wei, R. Klajn & B.A. Grzybowski\*, Synthesis of Au/Fe<sub>3</sub>O<sub>4</sub> „Nanoflowers”, *Small* **4**, 1635-1639 (2008).
- [77] S. Soh, K.J.M. Bishop & B.A. Grzybowski\* Dynamic Self-Assembly in Ensembles of Camphor Boats, *J. Phys. Chem. B* **112**; 10848-10853 (2008).
- [76] R. Klajn, T.P. Gray, P.J. Wesson, S.K. Smoukov & B.A. Grzybowski\* Synthesis of nanoporous metals and alloys from supraspherical nanoparticle aggregates, *Adv. Funct. Mater.* **18**, 1-7 (2008).
- [75] K.J. M. Bishop, C.J. Campbell, G. Mahmud, & B.A. Grzybowski\* Bioinspired dynamic self-assembly, in *Self-Assembly – Interdisciplinary Snapshots*, Elsevier (2008).
- [74] G. Mahmud, K.J.M. Bishop, Y. Chegel, S.K. Smoukov & B.A. Grzybowski\*, Wet-stamped precipitant gradients control the growth of protein microcrystals in an array of nanoliter wells *J. Am. Chem. Soc.* **130**, 2146-2147 (2008).
- [73] S.K. Smoukov, K.J.M. Bishop, B. Kowalczyk, A.M. Kalsin & B.A. Grzybowski\* A versatile route to nanoparticle coatings via cooperative electrostatic adsorption, *J. Am. Chem. Soc.* **129**; 15623-15630 (2007).
- [72] R. Klajn, A.O. Pinchuk, G.C. Schatz & B.A. Grzybowski\* Synthesis of heterodimeric sphere-prism nanostructures via metastable gold supraspheres, *Angew. Chem. Int. Ed.* **44**, 8363-8367 (2007).
- [71] K.J.M. Bishop & B.A. Grzybowski\* “Nanoions”: fundamental properties and analytical applications of charged nanoparticles” *Chem. Phys Chem.* **8**, 2171-2176 (2007).
- [70] A.O. Pinchuk, A.M. Kalsin, B. Kowalczyk, G.C. Schatz & B.A. Grzybowski\* Modeling of electrodynamic interactions between metal nanoparticles aggregated by electrostatic interactions into closely-packed clusters, *J. Phys. Chem. C* **111**, 11816-11816 (2007).
- [69] R. Klajn, K.J.M. Bishop & B.A. Grzybowski\* Light-controlled self-assembly of reversible and irreversible nanoparticle suprastructures, *Proc. Nat. Acad. Sci. USA* **104**, 10305-10309 (2007).

- [68] A. M. Kalsin, B. Kowalczyk, P. Wesson & B. A. Grzybowski\* Studying the thermodynamics of surface reactions on nanoparticles by electrostatic titrations, *J. Am. Chem. Soc.* **129**, 6664-6665 (2007).
- [67] B.A. Grzybowski\* & C.J. Campbell, Fabrication with “programmable” chemical reactions, *Materials Today* **10**, 38-46 (2007) **COVER ART**
- [66] R. Klajn, K.J.M. Bishop, M. Fialkowski, M. Paszewski, C.J. Campbell, T.P. Gray & B.A. Grzybowski\* Plastic and moldable metals by self-assembly of sticky nanoparticle aggregates, *Science* **316**, 261-264 (2007).
- [65] A.M. Kalsin & B.A. Grzybowski\* Controlling the Growth of “Ionic” Nanoparticle Supracrystals, *Nano Lett.* **7**, 1018-1021 (2007)
- [64] M. Paszewski, S. K. Smoukov & B.A. Grzybowski\* Multilevel surface nanostructuring via sequential photoswelling of dichromated gelatin, *Langmuir* **23**, 5419-5422 (2007).
- [63] K. Kandere-Grzybowska, C.J. Campbell, G. Mahmud, Y.A. Komarova, S. Soh & B. A. Grzybowski\* Cell Motility on Micropatterned Treadmills and Tracks. *Soft Matter* **3**, 672 - 679 (2007).
- [62] D. Witt, P. Barski, B.A. Grzybowski\* Versatile and efficient synthesis of  $\omega$ -functionalized asymmetric disulfides via sulfenyl bromide adducts, *Langmuir*, **23**, 2318-2321 (2007).
- [61] A. M. Kalsin, A. Pinchuk, B.Kowalczyk, R. Klajn & B. A. Grzybowski\* Ionic-like behavior of oppositely charged nanoparticles, *J. Am. Chem. Soc.*, **128**, 15046-15047 (2006).
- [60] K. J. M. Bishop, T. P. Gray, M. Fialkowski and B. A. Grzybowski\* Micro-chameleons: Nonlinear chemical microsystems for amplification and sensing, *Chaos*, **16**, #037102 (2006).
- [59] K.J.M. Bishop and B.A. Grzybowski\* Localized chemical wave emission and mode switching in a patterned excitable medium, *Phys. Rev. Lett.* **97**, #128702 (2006)
- [58] S.K. Smoukov & B. A. Grzybowski\* Maskless microetching of transparent conductive oxides (ITO and ZnO) and semiconductors (GaAs) based on reaction-diffusion *Chem. Mater.*, **18**, 4722-4723 (2006).
- [57] A.M. Kalsin, M. Paszewski, A. Pinchuk, G.C. Schatz & B. A. Grzybowski\* Electrostatic aggregation and formation of core-shell suprastructures in binary mixtures of charged metal nanoparticles, *Nano Lett.*, **6**, 1896 – 1903 (2006).
- [56] K.J. M. Bishop, R. Klajn & B.A. Grzybowski\* The core and most useful molecules in organic chemistry *Angew. Chem. Int. Ed.*, **45**, 5348 (2006).
- [55] C. J. Campbell, S.K. Smoukov, K. J.M. Bishop, E. Baker & B.A. Grzybowski\* Direct Printing of 3D and Curvilinear Micrometer-Sized Architectures into Solid Substrates with Sub-micrometer Resolution, *Adv. Mater.* **18**, 2004 (2006). **COVER ART**
- [54] A.M. Kalsin, M. Fialkowski, M. Paszewski, S.K. Smoukov, K. J.M. Bishop & B.A. Grzybowski\* Electrostatic self-assembly of binary nanoparticle crystals with a diamond lattice, *Science*, **312**, 420 (2006).
- [53] M. Fialkowski, K.J. M. Bishop, R. Klajn, S.K. Smoukov, C.J. Campbell, B.A. Grzybowski\* Principles and implementations of dissipative (dynamic) self-assembly, *J. Phys. Chem. B*, **110**, 2482 (2006).
- [52] S.K. Smoukov, A. Bitner, C.J. Campbell, K. Kandere-Grzybowska & B.A. Grzybowski\* Decorating surfaces with nanowaves of linearly increasing heights, *J. Am. Chem. Soc.*, **127**, 17803 (2005).
- [51] M. Fialkowski, K.J.M. Bishop, V. Chubukov, C.J. Campbell & B.A. Grzybowski\*, The architecture and evolution of organic chemistry, *Angew. Chem. Int. Ed.*, **44**, 7263 (2005) **COVER ART**
- [50] K.J.M. Bishop, M.Fialkowski & B.A. Grzybowski\*, Chemical waves, autofocusing and symmetry breaking in a purely oscillatory system, *J. Am. Chem. Soc.*, **127**, 15943 (2005).
- [49] B.A. Grzybowski\*, M. Fialkowski & J.A. Wiles, Kinetics of contact electrification between metals and polymers *J. Phys. Chem. B*, **109**, 20511 (2005).
- [48] K.Kandere-Grzybowska, C.J. Campbell, Y. Komarova, B.A. Grzybowski\* & G.G Borisy\* Molecular dynamics imaging in micropatterned living cells, *Nature Methods* **2**, 739 (2005). **COVER ART**
- [47] A. Bitner, M. Fialkowski, S. Smoukov, C. J. Campbell, B. A. Grzybowski\*, Visualizing changes in macromolecular structure by macroscopic reaction-diffusion patterns., *J. Am. Chem. Soc.* **127**, 6936 (2005).
- [46] B.A. Grzybowski\*, K.J.M. Bishop, C.J. Campbell, M. Fialkowski, S.K. Smoukov, Micro- and nanotechnology via reaction-diffusion, *Soft. Matter*, **1**, 114 (2005). **COVER ART**
- [45] C.J. Campbell, E. Baker, M. Fialkowski and B.A. Grzybowski\* Self-organization of planar microlenses by periodic precipitation, *J. Appl. Phys.* **97**, 126102/1 (2005).

- [44] S.K. Smoukov, C.J. Campbell, R. Klajn, K.J.M. Bishop & B.A. Grzybowski\* Cutting into solids with gels, *Adv. Mater.* **17**, 1361 (2005).
- [43] C.J. Campbell, S.K. Smoukov, K.J.M. Bishop, and B.A. Grzybowski\* Reactive surface micropatterning by Wet Stamping, *Langmuir*, **21**, 2637 (2005).
- [42] S. Smoukov, K. M. Bishop, C.J. Campbell & Bartosz A. Grzybowski\* Freestanding, three dimensional copper foils prepared by electroless deposition on micropatterned gels. *Adv. Mater.* **17**, 751 (2005).
- [41] C.J. Campbell, R. Klajn, M. Fialkowski & B.A. Grzybowski\*, One-Step, multilevel microfabrication by reaction-diffusion, *Langmuir*, **21**, 418 (2005). **COVER ART**
- [40] M. Fialkowski, A. Bitner & B.A. Grzybowski\*, Self-assembly of polymeric microspheres of complex internal structures. *Nature Mater.*, **4**, 93 (2005) **COVER ART**
- [39] M. Fialkowski, A. Bitner & B.A. Grzybowski\*, Wave optics of Liesegang rings. *Phys. Rev. Lett.*, **94**, 018303/1 (2005).
- [38] I.T. Bensemann, M. Fialkowski, R. Klajn & B. A. Grzybowski\*, Wet stamping of microscale periodic precipitation patterns. *J. Phys. Chem. B*, **109**, 2774 (2005). **COVER ART**
- [37] A. Bitner, M. Fialkowski & B.A. Grzybowski\*, Color micropatterning with reconfigurable stamps, *J. Phys. Chem. B* **108**, 19904 (2004).
- [36] J. A. Wiles, M.Fialkowski, M.R. Radowski, G.M. Whitesides & B.A. Grzybowski\*, Effects of surface modification and moisture on the rates of charge transfer between metals and organic materials. *J. Phys. Chem. B*, **108**, 20296 (2004).
- [35] D. Witt, R. Klajn, P. Barski & B.A. Grzybowski\* Applications, properties and synthesis of  $\omega$ -functionalized n-alkanethiols and disulfides – the building blocks of self-assembled monolayers. *Curr. Org. Chem.*, **8**, 1763 (2004).
- [34] R. Klajn, M. Fialkowski, I.T. Bensemann, A. Bitner, C.J. Campbell, K.J.M. Bishop, S. Smoukov & B.A. Grzybowski\*, Multi-color micropatterning of thin films of dry gels, *Nature Mater.* **3**, 729 (2004).
- [33] C. J. Campbell, E. Baker, M. Fialkowski & B. A. Grzybowski\*, Arrays of microlenses of complex shapes prepared by reaction-diffusion in thin films of ionically-doped gels, *Appl. Phys. Lett.*, **85**, 1871 (2004).
- [32] C. J. Campbell, M. Fialkowski, R. Klajn, I.T. Bensemann & B.A. Grzybowski\*, Color micro- and nanopatterning with counter-propagating reaction-diffusion fronts, *Adv. Mater.* **16**, 1921 (2004). **COVER ART**
- [31] M. Fialkowski, C.J. Campbell, I.T. Bensemann & B.A. Grzybowski\*, Absorption of water by thin, ionic films of gelatin, *Langmuir* **20**, 3513 (2004).
- [30] B. A. Grzybowski\*, M. Radowski, J.N. Lee, C.A. Campbell & G. M. Whitesides\*, Self-assembling fluidic machines, *Appl. Phys. Lett.* **84**, 1798 (2004). **COVER ART**
- [29] B.A. Grzybowski\* & C.A. Campbell, Complexity and dynamic self-assembly. *Chem. Eng. Sci.* **59**, 1667 (2004).
- [28] C.A. Campbell & B.A. Grzybowski\*, Active microfluidic mixers: from microfabricated to self-assembling devices. *Phil. Trans. Roy. Soc.: Special Issue on Mixing and Transport at the Microscale.* **362**, 1069 (2004).

#### **From Harvard:**

- [27] J.A. Wiles, B.A. Grzybowski\*, A. Winkleman & G.M. Whitesides\*, A sensitive tool for studying contact electrification in systems comprising metals and insulating polymers. *Anal. Chem.* **75**, 4859 (2003).
- [26] J. Ng, M. Fuerstman, B.A. Grzybowski & G.M. Whitesides\*, Dynamic self-assembly of systems of gears rotating at a liquid-air interface *J. Am. Chem. Soc.* **125**, 7948 (2003).
- [25] B.A. Grzybowski\*, J.A. Wiles, A. Winkleman, Y. Brummer & G.M. Whitesides\*, Electrostatic self-assembly of macroscopic crystals using contact electrification, *Nature Mater.* **2**, 241 (2003).
- [24] E. Ostuni, B.A. Grzybowski, M. Mrksich, C.S. Roberts & G.M. Whitesides\*, Adsorption of proteins at well-defined hydrophobic sites on surfaces, *Langmuir*, **19**, 1861 (2003).
- [23] B.A. Grzybowski\*, J.A. Wiles & G.M. Whitesides\*, Dynamic self-assembly of rings of charged metallic spheres. *Phys. Rev. Lett.*, **90**, 083903 (2003).
- [22] G.M. Whitesides\* & B.A. Grzybowski, Self-assembly at all scales, *Science* **295**, 2418 (2002)
- [21] B.A. Grzybowski\* A.V. Ishchenko\*, J. Shimada, & E.I. Shakhnovich, From knowledge-based potentials to combinatorial lead design in silico. *Acc. Chem. Res.* **35**, 261 (2002). **COVER ART**

- [20] B.A. Grzybowski\* & G.M. Whitesides\*, Directed dynamic self-assembly of objects rotating on two parallel fluid interfaces. *J. Chem. Phys.* **116**, 8571 (2002).
- [19] B.A. Grzybowski\* & G.M. Whitesides\*, Dynamic aggregation of chiral spinners. *Science* **296**, 718 (2002).
- [18] B.A. Grzybowski, A.V. Ishchenko, C.-Y. Kim, G. Topalov, R. Chapman, D.W. Christianson, G.M. Whitesides & E.I. Shakhnovich\*, De Novo Design of potent inhibitors of Human Carbonic Anhydrase II using Small Molecule Growth Algorithm, *Proc. Nat. Acad. Sci. USA* **99**, 1270 (2002).
- [17] B.A. Grzybowski\*, H.A. Stone & G.M. Whitesides\*, Dynamics of self-assembly of magnetized disks rotating at the liquid-air interface. *Proc. Nat. Acad. Sci. USA* **99**, 4147 (2002).
- [16] B.A. Grzybowski\* & G.M. Whitesides\*, Three-dimensional dynamic self-assembly of spinning magnetic disks: Vortex Crystals. *J. Phys. Chem. B* **106**, 1188 (2001). **COVER ART**
- [15] B.A. Grzybowski\* & G.M. Whitesides\*, Macroscopic synthesis of self-assembled dissipative structures. *J. Phys. Chem. B*, **105**, 8770 (2001).
- [14] B.A. Grzybowski, N. Bowden, F. Arias, H. Yang & G.M. Whitesides\*, Modeling of menisci and capillary forces from the millimeter to the micrometer size range. *J. Phys. Chem. A* **105**, 404 (2001).
- [13] H. Wu, S. Brittain, J.R. Anderson, B.A. Grzybowski, S. Whitesides & G.M. Whitesides\*, Fabrication of topologically complex three-dimensional microstructures: metallic microknots. *J. Am. Chem. Soc.* **122**, 12691 (2000).
- [12] B.A. Grzybowski\*, X. Jiang, H.A. Stone & G.M. Whitesides\*, Dynamic self-assembled aggregates of magnetized, millimeter-sized objects rotating at the liquid-air interface: macroscopic, two-dimensional classical artificial atoms and molecules. *Phys. Rev. E.* **6401**, 1603-+ (2001).
- [11] B.A. Grzybowski, A. Ischenko, R. DeWitte, G.M. Whitesides, E.I. Shakhnovich\* Derivation of a knowledge-based potential for hydrogen bonds in crystals of small organic molecules, *J. Phys. Chem B* **104**, 7293 (2000).
- [10] B.A. Grzybowski, H.A. Stone & G.M. Whitesides\*, Dynamic self-assembly of millimeter-sized disks spinning on a liquid-air interface. *Nature* **405**, 1033 (2000).
- [9] B.A. Grzybowski, D. Qin, R. Haag & G.M. Whitesides\*, Elastomeric optical elements with corner-cube surface topographies. *Sensors & Actuators A* **86**, 81 (2000).
- [8] B.A. Grzybowski, J.R. Anderson, I. Colton, S.T. Brittain, E.I. Shakhnovich & G.M. Whitesides\*, Modeling the kinetics of acylation of insulin using a recursive method for solving the systems of coupled differential equations. *Biophys. J.* **78**, 652 (2000).
- [7] J. Lahiri, L. Isaacs, B.A. Grzybowski, J. Carbeck & G.M. Whitesides\*, Biospecific binding of carbonic anhydrase to mixed SAMs presenting benzenesulfonamide ligands: A model system for studying lateral steric effects. *Langmuir* **15**, 7186 (1999).
- [6] B. Xu, F. Arias, S.T. Brittain, M. Zhao, B.A. Grzybowski, S. Torquato & G.M. Whitesides\*, Making negative Poisson's ratio microstructures by soft lithography. *Adv. Mater.* **11**: (14) 1186-1189, 1999.
- [5] N. Bowden, I.S. Choi, B.A. Grzybowski & G.M. Whitesides\*, Mesoscale self-assembly of hexagonal plates using lateral capillary forces: Synthesis using the "capillary bond" *J. Am. Chem. Soc.* **121**, 5373 (1999).
- [4] B.A. Grzybowski, D. Qin, & G.M. Whitesides\*, Beam redirection and frequency filtering with transparent elastomeric diffractive elements. *Appl. Opt.* **38**, 2997 (1999).
- [3] B.A. Grzybowski, S.T. Brittain & G.M. Whitesides\*, Thermally actuated interferometric sensors based on the thermal expansion of transparent elastomeric media. *Rev. Sci. Instrum.* **70**, 2031 (1999).
- [2] B.A. Grzybowski, R. Haag, N. Bowden & G.M. Whitesides\*, Generation of micrometer-sized patterns for microanalytical applications using a laser direct-write method and microcontact printing. *Anal. Chem.* **70**, 4645 (1998).

#### **From Yale:**

- [1] Q.G. Zhang, P. Dupre, B.A. Grzybowski, & P.H. Vaccaro\* Laser induced fluorescence studies of jet-cooled S<sub>2</sub>O -- axis switching and predissociation effects, *J. Chem. Phys.* **103**, 67-79, (1995)

**E. Patents:** B.A. Grzybowski, A.M. Kalsin, B. Kowalczyk, S. Smoukov The method of forming nanoparticle coatings by electrostatic self-assembly, U.S. Provisional Patent

## **F. Other Scientific Publications (not peer-reviewed).**

4. B. A. Grzybowski, *Soft Matter* **5**, 1109 (2008)
3. B. A. Grzybowski, *Nature* **455**, 1153 (2008),
2. B. A. Grzybowski, Nanoionics – Engineering Nanostructured Crystals from Charged Nanoparticles, *Science at Stake*, [www.scienceatstake.com](http://www.scienceatstake.com), May 8 (2006)
1. B. A. Grzybowski, Crawling cells: How to stop cancer, *Polityka*, **45** (2529), 87, 2005.

## **G. Editorial:**

*Soft Matter*, member of the Scientific Advisory Board (2008-)  
Guest Editor, *Soft Matter*, Special Issue on Self-Assembly (March, 2009)

**H. Press releases:** all listed at [dysa.northwestern.edu](http://dysa.northwestern.edu)

## **I. Invited Lectures:**

1. NECSI International Conference on Complex Systems (Nashua, NH, 2000)
2. Politechnika Gdanska (Poland, 2001)
3. Freiburg University (Germany, 2002)
4. EMBL Heidelberg (Germany, 2002)
5. European Workshop on Morphology of Surfaces and Interfaces in Soft Matter (Jadwisin, Poland 2003)
6. Moscow State University (Russia, 2003)
7. AIChE Annual Meeting, San Francisco (2003)
8. University of Munster (Germany, 2004)
9. Brown University (2004)
10. Volkswagen Conference on Complexity (Germany, 2005)
11. EPA Workshop on Self-Assembly (Cincinnati, 2005)
12. International Conference on the Technologies of the 21<sup>st</sup> Century, Moscow (2005)
13. Stanford University (2005)
14. NICO Launch Seminar (Northwestern, 2005)
15. Halliburton, Inc. (2005)
16. MATNON'05 International Conference on Nonlinear Systems (Kyoto, Japan, 2005)
17. Workshop on Stochastic Effects in Liesegang Patterns Formation (Sils-Maria, Switzerland, 2006)
18. ACS Colloid and Surface Science Symposium (Boulder, 2006)
19. Gordon Research Conference (Oxford, England, 2006)
20. Lehigh University (2006)
21. Illinois Institute of Technology, Chemistry Department (2006)
22. ACS Annual Meeting, San Francisco (2006)
23. NSF US-Poland Workshop on Nanotechnology (Poznan, Poland, 2006)
24. Dow Chemical (2006)
25. 3M (2006)
26. NIH/NCI Nanotechnology in Cancer Research, Investigators Meeting (San Diego, 2006)
27. Yale University (2007)
28. Keystone Symposium, Nanotechnology in Biomedicine (Tahoe City, 2007)
29. Pew Scholars Meeting (Mexico, 2007)
30. International Conference on Bioinspired Engineering (Dead Sea, Israel, 2007)
31. Freie Universitat Berlin (2007)
32. ACS Annual Meeting, Chicago, PMSE Symposium (Chicago, 2007)

33. ACS Annual Meeting, Chicago, Colloidal Atoms Symposium (Chicago, 2007)
34. ACS Annual Meeting, Chicago, George Whitesides Symposium (Chicago, 2007)
35. ACS Colloids Meeting, keynote lecture (University of Delaware, 2007)
36. Gordon Conference on Thin Films and Crystal Growth (Mt. Holyoke College, 2007)
37. RPI, Dept. of Chemical Engineering (Troy, 2007)
38. US-Japan Symposium on Coordination Chemistry (Evanston, 2007)
39. Argonne National Laboratory User's Meeting (Argonne, 2007)
40. University of Wisconsin, Materials Science Colloquium (2007)
41. Northwestern University, Materials Science Colloquium (2007)
42. Harvard University, Department of Chemistry (2007)
43. PATFOR07 Symposium, Dresden, Germany (2007)
44. NIH/NCI Nanotechnology in Cancer Research, Investigators Meeting (Rayleigh, 2007)
45. ACS Annual Meeting, Symposium on Nonlinear Effects in Polymer Science (New Orleans, 2008)
46. ACS Annual Meeting, Symposium on Nanostructured Materials (New Orleans, 2008)
47. University of California at Berkeley, Department of Chemistry (2008).
48. ACS Colloids Meeting, keynote lecture (2008).
49. Electrostatics Society of America, keynote lecture (2008).
50. Symposium on Printed Functional Materials (Ireland, 2008)
51. US-Poland NSF Workshop on Nanostructured Materials (Poland, 2008)
52. Argonne National Laboratory User's Meeting (Argonne, 2008)
53. Polydays 2008 (Berlin, Germany)
54. MRS Annual Meeting (Cambridge, MA, 2008)
55. 5<sup>th</sup> International Conference on Functional Materials, FMMA 2008, Lvov, the Ukraine (2008)
56. DARPA Infochemistry Meeting (Boston, 2008)
57. University of North Carolina (Rayleigh, 2008)
58. American Society of Cell Biology, Annual Meeting (San Francisco, 2008)
59. American Physical Society (Annula Meeting, Pittsburgh, 2009)
60. University of Toronto (Canada, 2009)
61. MRS Fall National Meeting (Boston, 2009)