

Zvonimir Dogic

Department of Physics
Brandeis University
Waltham MA 02454

Phone: (310) 642-3578
E-mail: zdogic@brandeis.edu
website: www.elsie.brandeis.edu/dogic

(i) Education

Brandeis University	B. Arts (Physics)	1995
Brandeis University	Ph.D. (Physics)	2001
Research Center Juelich	post-doctoral studies	2001-02
University of Pennsylvania	post-doctoral studies	2002-03

(ii) Research and Professional Experience:

Associate Professor	Brandeis University	2011-
Assistant Professor	Brandeis University	2007-10
Rowland Research Fellow	Harvard University	2003-07
Postdoctoral Fellow	University of Pennsylvania	2002-03
Postdoctoral Fellow	Research Center Juelich	2001-02
Research Assistant	Brandeis University	1996-00

(iii) Awards

2010 NSF-CAREER Award
2003 Rowland Junior Research fellowship
2001 Humboldt Postdoctoral fellowship
1995 Stephan Berko Award, Brandeis University

(iv) Graduate and Postdoctoral Advisors and Advisees:

1. Graduate and Postdoctoral Advisors

Graduate :	Seth Fraden	Brandeis University
Postdoctoral:	Arjun Yodh	University of Pennsylvania
	Jan Dhont	Research Center Juelich, Germany

2. Thesis Advisor and Postgraduate-Scholar Sponsor

Edward Barry (2007-present), Brandeis University
Timothy Sanchez (2007-present), Brandeis University
Andy Ward (2007-present), Brandeis University
David Welch (2008-present), Brandeis University
Mark Zachary (2009-present), Brandeis University
Sevim Yardemici (2009-present), Brandeis University
Thomas Gibaud, Post-doc (2009-present), Brandeis University
Karim Addas, Post-doc (2004-2007), Assistant Professor, American University, Egypt

(v) List of Publications All publications can be downloaded from my website:

<http://www.brandeis.edu/departments/physics/complexfluids/dogic/index.html>

1. E. Barry and Z. Dogic, "Entropy Driven Self-Assembly of Non-Amphiphilic Colloidal Membranes", *Proc. Nat. Acad. Sci.*, **107**, 10348 (2010).
2. K. Okada, F. Bartolini, A. M. Deaconescu, J. B. Moseley, Z. Dogic, N. Grigorieff, G. G. Gundersen and B. L. Goode, "Adenomatous polyposis coli protein nucleates actin assembly and synergizes with the formin mDia1", to appear in *J. Biol. Chem.*
3. T. Sanchez, I. Kulic and Z. Dogic, "Circularization, photo-mechanical switching and a supercoiling transition of actin filaments", *Phys. Rev. Lett.* **104**, 098103 (2010).
4. A. Prasad, A. W. C. Lau and Z. Dogic, "Condensation of isolated semiflexible filaments driven by depletion interactions", *EPL*, **87**, 48006 (2009).
5. G. H. Koenderink, Z. Dogic, F. Nakamura, P. M. Bendix, F. C. MacKintosh, J. H. Hartwig, T. P. Stossel and D. A. Weitz, "Active biopolymer networks controlled by molecular motors", *Proc. Nat. Acad. Sci.*, **106**, 15192 (2009).
6. E. Barry, D. Beller and Z. Dogic, "A model liquid crystalline system based on rodlike viruses with variable chirality and persistence length", *Soft Matter*, **5**, 2563 (2009).
7. E. Barry, Z. Dogic, R. B. Meyer, A. P. Pelcovits and R. Oldenbourg, "Direct measurement of twist penetration length in single smectic A layer of colloidal particle", *J. Phys. Chem. B*, **113**, 3910 (2009).
8. P. Huang, K. Addas, A. Ward, N. T. Flynn, E. Valesco, M. F. Hagan, Z. Dogic and S. Fraden, "Pair potential of charged colloidal stars", *Phys. Rev. Lett.*, **102**, 108302 (2009).
9. P. M. Bendix, G. J. Koenderink, D. Cuvelier, Z. Dogic, B. M. Koeleman, W. M. Briehner, C. M. Field, L. Mahadevan, D. A. Weitz, "A quantitative analysis of contractility in active cytoskeletal protein networks", *Biophys. J.*, **94**, 3126 (2008).
10. C. P. Brangwynne, G. H. Koenderink, E. Barry, Z. Dogic, F. C. MacKintosh and D. A. Weitz, "Bending dynamics of fluctuating biopolymers probed by automated high-resolution filament tracking", *Biophys. J.*, **93**, 346 (2007).
11. K. G. Kang, M. P. Lettinga, Z. Dogic and J. K. G. Dhont, "Vorticity banding in rodlike virus suspensions", *Phys. Rev. E.*, **74**, 026307 (2006).
12. A. Cebers, Z. Dogic and P. A. Janmey, "Counterion mediated attraction and kinks on loops of semiflexible polyelectrolyte bundles", *Phys. Rev. Lett.*, **96**, 247801 (2006).
13. Z. Dogic and S. Fraden "Ordered phases of filamentous viruses", *Curr. Opin. in Coll. and Inter. Sci.*, **11**, 45 (2006)
14. E. Barry, Z. Hensel, M. Shribak, R. Oldenbourg and Z. Dogic, "Entropy driven formation of a chiral liquid crystalline phase of helical filaments", *Phys. Rev. Lett.*, **96**, 018305 (2006).
15. M. P. Lettinga, Z. Dogic, H. Wang and J. Vermant, "Flow behavior of colloidal rod-like viruses in the nematic phase", *Langmuir*, **21**, 8048 (2005).
16. M. P. Lettinga, E. Barry and Z. Dogic, "Self-diffusion of rod-like viruses in the nematic phase", *Europhysics Letters*, **71**, 692, (2005).

17. Z. Dogic and S. Fraden, "Phase behavior of rod-like viruses and virus-sphere mixtures", *Soft Matter: Complex Colloidal Suspensions*, v. 2, Gompper G., Schick, M. eds., Wiley-VCH Weinheim, 2005.
18. A. M. Alsayed, Z. Dogic, and A. G. Yodh, "Melting of lamellar phases in temperature sensitive colloid-polymer mixture", *Phys. Rev. Lett.*, **93**, 057801 (2004).
19. Z. Dogic, K. R. Purdy, E. Grelet, M. Adams and S. Fraden, "Isotropic-nematic phase transition in suspension of filamentous virus and dextran", *Phys. Rev. E.*, **69**, 051702 (2004).
20. Z. Dogic, J. Zhang, A. W. C. Lau, P. Dalhaimer, H. Aranda-Espinoza, D. Disher, P. Janmey, R. D. Kamien, T. C Lubensky and A. G. Yodh, "Elongation and fluctuations of semi-flexible polymers in a nematic solvent", *Phys. Rev. Lett.*, **92**, 125503 (2004).
21. M. F. Islam, A. M. Alsayed, Z. Dogic, J. Zhang, T. C. Lubensky, and A. G. Yodh, "Nematic Nanotube Gels", *Phys. Rev. Lett.*, **92**, 088303, (2004).
22. Z. Dogic, "Surface freezing and a two-step pathway of the isotropic-smectic phase transitions in colloidal rods", *Phys. Rev. Lett.*, **91**, 165701, (2003).
23. K. R. Purdy, Z. Dogic, S. Fraden, A. Rühm, L. Lurio, S. G. J. Mochrie, "Measuring the nematic order parameter of colloidal *fd* virus by x-ray diffraction", *Phys. Rev. E.*, **67**, 031708 (2003).
24. J. K. G. Dhont, M. P. Letting, Z. Dogic, T. A. J. Lenstra, H. Wang, S. Rathgeber, P. Carletto, L. Willner, H. Frielinghaus and P. Lindner, "Shear-banding and Microstructure of Colloids in Shear Flow", *Faraday Discussions*, **123**, 157 (2003).
25. T. A. J. Lenstra, Z. Dogic and J. K. G. Dhont, "Shear induced displacement of the isotropic-nematic spinodals", *J. Chem. Phys.*, **114**, 10151 (2001).
26. Dogic, Z. and S. Fraden, "Development of model colloidal liquid crystals and the kinetics of the isotropic - smectic transition", *Phil. Tran. R. Soc. Lond. A.*, **359**, 997 (2001).
27. Dogic, Z. and S. Fraden, "Cholesteric phase in virus suspensions", *Langmuir*, **16**, 7820 (2000).
28. Dogic, Z., A.P. Philipse, S. Fraden, and J.K.G. Dhont, "Concentration dependent sedimentation of colloidal rods", *J. Chem. Phys.*, **113**, 8368 (2000).
29. Dogic, Z., D. Frenkel, and S. Fraden, "Enhanced stability of layered phases in parallel hard-spherocylinders due to the addition of hard spheres", *Phys. Rev. E*, **62**, 3925 (2000).
30. Adams, M., Z. Dogic, S.L. Keller, and S. Fraden, "Entropically driven microphase transitions in mixtures of colloidal rods and spheres", *Nature*, **393**, 349 (1998).
31. Dogic, Z. and S. Fraden, "Smectic phase in a colloidal suspension of semiflexible virus particles", *Phys. Rev. Lett.*, **78**, 2417 (1997).