

Ramin Golestanian

List of Publications

11 February 2015

Submitted Manuscripts

Microfluidics powered by mesoscale turbulence, S.P. Thampi, A. Doostmohammadi, T.N. Shendruk, R. Golestanian, and J.M. Yeomans, submitted to Sci. Adv. (2015).

The Power Spectrum of Ionic Nanopore Currents: The Role of Ion Correlations, M. Zorkot, R. Golestanian, and D.J. Bonn, submitted to Nano Lett. (2015).

Effective dynamics of microorganisms that interact with their own trail, W.T. Kranz, A. Gelimson, and R. Golestanian, submitted to Phys. Rev. Lett. (2015).

Publications in Peer-Reviewed Journals

- 2016 [130] **Species-dependent hydrodynamics of flagellum-tethered bacteria in early biofilm development**, R.R. Bennett, C.K. Lee, J. De Ande, K.H. Nealson, F.H. Yildiz, G.A. O'Toole, G.C.L. Wong, and R. Golestanian, J. R. Soc. Interface 13, 20150966 (2016).
- 2015 [129] **Micromotors Powered by Enzyme Catalysis**, K.K. Dey, X. Zhao, B. Tansi, W. Mendez-Ortiz, U. Cordova-Figueroa, R. Golestanian, and A. Sen, Nano Lett. 15, 8311 (2015).
- [128] **A supramolecular structure in the membrane of *Staphylococcus aureus***, J. Garcia-Lara, X. Ma, J. Kasturiarachchi, H. Crossley, R. Golestanian, and S. Foster, Proc. Natl. Acad. Sci. U.S.A. 112, 15725 (2015).
- [127] **Boundaries can Steer Active Janus Spheres**, S. Das, A. Garg, A. Campbell, J. Howse, A. Sen, D. Velez, R. Golestanian, and S. Ebbens, Nature Comm. 6:8999 doi: 10.1038/ncomms9999 (2015).
- [126] **Intrinsic Free Energy in Active Nematics**, S.P. Thampi, A. Doostmohammadi, R. Golestanian, and J.M. Yeomans, Europhys. Lett. 112, 28004 (2015).
- [125] **Enhanced Diffusion of Enzymes that Catalyze Exothermic Reactions**, R. Golestanian, Phys. Rev. Lett. 115, 108102 (2015).
- [124] **Self-assembly of Active Colloidal Molecules with Dynamic Function**, R. Soto and R. Golestanian, Phys. Rev. E 91, 052304 (2015).
- [123] **Driven active and passive nematics**, S.P. Thampi, R. Golestanian, and J.M. Yeomans, Molecular Physics (2015) doi: 10.1080/00268976.2015.1031840.
- [122] **A steering mechanism for phototaxis in *Chlamydomonas***, R.R. Bennett and R. Golestanian, J. R. Soc. Interface 12, 20141164 (2015).
- [121] **Collective Dynamics of Dividing Chemotactic Cells**, A. Gelimson and R. Golestanian, Phys. Rev. Lett. 114, 028101 (2015).

Highlights:

- Selected as "Editors' Suggestion"
 - "Cellular model of tissue growth could shed light on metastasis," *Physics World* (21 January 2015)
 - Commentary in *Journal Club for Condensed Matter Physics* (March 2015)
- 2014 [120] **Active Nematics with Substrate Friction**, S.P. Thampi, R. Golestanian, and J.M. Yeomans, Phys. Rev. E 90, 062307 (2014).
- [119] **Vorticity, Defects and Correlations in Active Turbulence**, S.P. Thampi, R. Golestanian, and J.M. Yeomans, Phil. Trans. R. Soc. A 372, 20130366 (2014).
- [118] **Mechanosensitive Channel Activation by Diffusio-Osmotic Force**, D.J. Bonn and R. Golestanian, Phys. Rev. Lett. 113, 148101 (2014).
- [117] **Hydrodynamic suppression of phase separation in active suspensions**, R. Matas-Navarro, R. Golestanian, T. Liverpool, S.M. Fielding, Phys. Rev. E 90, 032304 (2014).

- [116] **Vibrio cholerae mechanically scan surfaces using pili before irreversible attachment and microcolony formation**, A.S. Utada, R.R. Bennett, J.C.N. Fong, M.L. Gibiansky, F. Yildiz, R. Golestanian, and G.C.L. Wong, *Nature Comm.* 5, 4913 (2014).
- [115] **Collective behavior of chemotactic colloids: clusters, asters and oscillations**, S. Saha, R. Golestanian, and S. Ramaswamy, *Phys. Rev. E* 89, 062316 (2014).
- [114] **Electrokinetic effects in catalytic platinum-insulator Janus swimmers**, S. Ebbens, D.A. Gregory, G. Dunderdale, J.R. Howse, Y. Ibrahim, T.B. Liverpool, and R. Golestanian, *Europhys. Lett.* 106, 58003 (2014).
- [113] **Emergent cometlike swarming of optically driven thermally active colloids**, J.A. Cohen and R. Golestanian, *Phys. Rev. Lett.* 112, 068302 (2014).

Highlight:

- Selected as “Editors’ Suggestion”

[112] **Self-assembly of catalytically active colloidal molecules: Tailoring activity through surface chemistry**, R. Soto and R. Golestanian, *Phys. Rev. Lett.* 112, 068301 (2014).

[111] **Instabilities and Topological Defects in Active Nematics**, S.P. Thampi, R. Golestanian, and J.M. Yeomans, *Europhys. Lett.* 105, 18001 (2014).

[110] **Run-and-tumble in a crowded environment: persistent exclusion process for swimmers**, R. Soto and R. Golestanian, *Phys. Rev. E* 89, 012706 (2014).

2013 [109] **Reply to Comment on “Length scale dependence of DNA mechanical properties”**, A. Noy and R. Golestanian, *Phys. Rev. Lett.* 111, 179802 (2013).

[108] **Quantum Cherenkov Radiation and Non-contact Friction**, M.F. Maghrebi, R. Golestanian, and M. Kardar, *Phys. Rev. A* 88, 042509 (2013).

Highlight:

- Selected as “Editors’ Suggestion”

[107] **Velocity correlations in an active nematic**, S.P. Thampi, R. Golestanian, and J.M. Yeomans, *Phys. Rev. Lett.* 111, 118101 (2013).

[106] **Phase Dependent Forcing and Synchronization in the three-sphere model of *Chlamydomonas***, R.R. Bennett and R. Golestanian, *New J. Phys.* 15, 075028 (2013).

[105] **Emergent Run-and-Tumble Behavior in a Simple Model of *Chlamydomonas* with Intrinsic Noise**, R.R. Bennett and R. Golestanian, *Phys. Rev. Lett.* 110, 148102 (2013).

[104] **A Scattering approach to dynamical Casimir effect**, M.F. Maghrebi, R. Golestanian, and M. Kardar, *Phys. Rev. D* 87, 025016 (2013).

2012 [103] **Hydrodynamic Synchronization between Objects with Cyclic Rigid Trajectories**, N. Uchida and R. Golestanian, *Eur. Phys. J. E* 35, 135 (2012).

[102] **Translocation through environments with time dependent mobility**, J.A. Cohen, A. Chaudhuri, and R. Golestanian, *J. Chem. Phys.* 137, 204911 (2012).

[101] **Length scale dependence of DNA mechanical properties**, A. Noy and R. Golestanian, *Phys. Rev. Lett.* 109, 228101 (2012).

Highlight:

- “DNA flexibility at the atomic scale,” *Phys. Rev. Focus* (30 November 2012)

[100] **Stochastic sensing of polynucleotides using patterned nanopores**, J.A. Cohen, A. Chaudhuri, and R. Golestanian, *Phys. Rev. X* 2, 021002 (2012).

[99] **Synchronizing noncontact rack-and-pinion devices**, M. Nasiri, M.F. Miri, and R. Golestanian, *Appl. Phys. Lett.* 100, 114105 (2012).

[98] **Chiral Structure of F-actin Bundle Formed by Multivalent Counterions**, S. Mohammadinejad, R. Golestanian, and H. Fazli, *Soft Matter* 8, 3649 (2012).

[97] **Size Dependence of the Propulsion Velocity for Catalytic Janus-Sphere Swimmers**, S. Ebbens, M.-H. Tu, J.R. Howse, and R. Golestanian, *Phys. Rev. E* 85, 020401(R) (2012).

[96] **Collective Behavior of Thermally Active Colloids**, R. Golestanian, *Phys. Rev. Lett.* 108, 038303 (2012).

2011 [95] **Active polymer translocation through flickering pores**, J.A. Cohen, A. Chaudhuri, and R. Golestanian, *Phys. Rev. Lett.* 107, 238102 (2011).

[94] **Effect of interactions on the cellular uptake of nanoparticles**, A. Chaudhuri, G. Battaglia, and R. Golestanian, Phys. Biol. 8, 046002 (2011).

[93] **Probing Passive Diffusion of Flagellated and Deflagellated *Escherichia coli***, S. Tavaddod, M.A. Charsooghi, F. Abdi, H.R. Khalesifard, and R. Golestanian, Eur. Phys. J. E 34, 16 (2011).

Highlight:

- EPJE Cover (February 2011)

[92] **Generic Conditions for Hydrodynamic Synchronization**, N. Uchida and R. Golestanian, Phys. Rev. Lett. 106, 058104 (2011).

[91] **Hydrodynamic Synchronization at Low Reynolds Number**, R. Golestanian, J. M. Yeomans, and N. Uchida, Soft Matter 7, 3074 (2011).

2010 [90] **Effect of the Heterogeneity of Metamaterials on Casimir-Lifshitz Interaction**, A. Azari, M.F. Miri, and R. Golestanian, Phys. Rev. A 82, 032512 (2010).

[89] **Self-Assembled Autonomous Runners and Tumblers**, S. Ebbens, R.A.L. Jones, A.J. Ryan, R. Golestanian, and J.R. Howse, Phys. Rev. E 82, 015304 (R) (2010).

Highlight:

- "Different strokes," Science News (16 July 2010)

[88] **Coherent Hydrodynamic Coupling for Stochastic Swimmers**, A. Najafi and R. Golestanian, Europhys. Lett. 90, 68003 (2010).

[87] **Synthetic Mechanochemical Molecular Swimmer**, R. Golestanian, Phys. Rev. Lett. 105, 018103 (2010).

[86] **Peptidoglycan Architecture can Specify Division Planes in *Staphylococcus aureus***, R. Turner, E. Ratcliffe, R. Wheeler, R. Golestanian, J. Hobbs, and S. Foster, Nat. Commun. 1:26 doi:10.1038/ncomms1025 (2010).

[85] **The chirality of DNA: elasticity cross-terms at base pair level including A-tracts and the influence of ionic strength**, A. Noy and R. Golestanian, J. Phys. Chem. B 114, 8022–8031 (2010).

[84] **Synchronization and Collective Dynamics in A Carpet of Microfluidic Rotors**, N. Uchida and R. Golestanian, Phys. Rev. Lett. 104, 178103 (2010).

[83] **Synchronization in A Carpet of Hydrodynamically Coupled Rotors with Random Intrinsic Frequency**, N. Uchida and R. Golestanian, Europhys. Lett. 89, 50011 (2010).

[82] **Nonlinear dynamics of a rack-pinion-rack device powered by the Casimir force**, M.F. Miri, V. Nekouie, and R. Golestanian, Phys. Rev. E 81, 016104 (2010).

[81] **Controlled propulsion in viscous fluids of magnetically actuated colloidal doublets**, P. Tierno, O. Güel, F. Sagues, R. Golestanian, and I. Pagonabarraga, Phys. Rev. E 81, 011402 (2010).

2009 [80] **Directed Single Molecule Diffusion Triggered By Surface Energy Gradients**, P. Burgos, Z. Zhang, R. Golestanian, G.J. Leggett, and M. Geoghegan, ACS Nano 3, 3235–3243 (2009).

Highlights:

- "Scientists give insight into movement of molecules," nanotechweb.org (IOP Publishing) (07 October 2009)

- "Controlled movement of molecules," Materials Today (05 November 2009)

[79] **Salt-induced aggregation of stiff polyelectrolytes**, H. Fazli, S. Mohammadinejad, and R. Golestanian, J. Phys.: Condens. Matter 21, 424111 (2009).

[78] **Casimir-Lifshitz Interaction between Dielectric Heterostructures**, A. Azari, H.S. Samanta, and R. Golestanian, New J. Phys. 11, 093023 (2009).

[77] **Casimir-Lifshitz Interaction between Dielectrics of Arbitrary Geometry: A Dielectric Contrast Perturbation Theory**, R. Golestanian, Phys. Rev. A 80, 012519 (2009).

[76] **Anomalous Diffusion of Symmetric and Asymmetric Active Colloids**, R. Golestanian, Phys. Rev. Lett. 102, 188305 (2009).

Highlight:

- "Microswimmers make a splash," Science News (4 July 2009)

[75] **A frustrated non-contact rack-pinion-rack device**, M.F. Miri and R. Golestanian, J. Phys.: Conf. Ser. 161, 012038 (2009).

[74] **Stochastic Low Reynolds Number Swimmers**, *R. Golestanian and A. Ajdari*, *J. Phys.: Condens. Matter* 21, 204104 (2009).

[73] **Orientationally ordered aggregates of stiff polyelectrolytes in the presence of multivalent salt**, *S. Mohammadinejad, H. Fazli, and R. Golestanian*, *Soft Matter* 5, 1522-1529 (2009).

2008 [72] **Magnetically actuated colloidal microswimmers**, *P. Tierno, R. Golestanian, I. Pagonabarraga, and F. Sagues*, *J. Phys. Chem. B* 112, 16525-16528 (2008).

Highlights:

○ "Microswimmers Make Big Splash For Improved Drug Delivery," *ScienceDaily* (13 January 2009)

○ "Microfluidics: In a spin," *Nature Chemistry* 99 (2008) (Research highlights, 5 December 2008)

[71] **Controlled swimming in confined fluids of magnetically actuated colloidal rotors**, *P. Tierno, R. Golestanian, I. Pagonabarraga, and F. Sagues*, *Phys. Rev. Lett.* 101, 218304 (2008).

Highlights:

○ "Tiny 'paddleboat' could ship drugs around the body," *New Scientist* (4 December 2008)

○ "Microscopic robot could deliver drugs inside the body," *Daily Telegraph* (3 December 2008)

○ "Microswimmer could deliver drugs," *Channel 4 News* (4 December 2008)

[70] **Self-organized gels in DNA/F-actin mixtures without crosslinkers: Entangled networks of nematic domains with tunable density**, *J.C. Butler, O.V. Zribi, I.I. Smalyukh, G.H. Lai, T.E. Angelini, K. Purdy, R. Golestanian, and G.C.L. Wong*, *Phys. Rev. Lett.* 101, 218303 (2008).

[69] **Effect of Bending Anisotropy on the 3D Conformation of Short DNA Loops**, *D. Norouzi, F. Mohammad-Rafiee, and R. Golestanian*, *Phys. Rev. Lett.* 101, 168103 (2008).

[68] **Soret Motion of a Charged Spherical Colloid**, *S.N. Rasuli and R. Golestanian*, *Phys. Rev. Lett.* 101, 108301 (2008).

[67] **A frustrated nanomechanical device powered by the lateral Casimir force**, *M.F. Miri and R. Golestanian*, *Appl. Phys. Lett.* 92, 113103 (2008).

Highlight:

○ "Nanomechanics: Pulling teeth," *Nature* 452, 506 (2008) (Research highlights, 3 April 2008)

[66] **Analytic results for the three-sphere swimmer at low Reynolds number**, *R. Golestanian and A. Ajdari*, *Phys. Rev. E* 77, 036308 (2008).

[65] **Three-Sphere Low Reynolds Number Swimmer with a Cargo Container**, *R. Golestanian*, *Euro. Phys. J. E* 25, 1 (R) (2008).

[64] **Mechanical Response of a Small Swimmer Driven by Conformational Transitions**, *R. Golestanian and A. Ajdari*, *Phys. Rev. Lett.* 100, 038101 (2008).

[63] **The interfacial behaviour of single poly(N,Ndimethylacrylamide) chains as a function of pH**, *Z. Zhang, M.R. Tomlinson, R. Golestanian, and M. Geoghegan*, *Nanotechnology* 19, 035505 (2008).

2007 [62] **Casimir Rack and Pinion**, *A. Ashourvan, M.F. Miri, and R. Golestanian*, *J. Phys.: Conf. Ser.* 89, 012017 (2007).

[61] **Aggregation kinetics of stiff polyelectrolytes in the presence of multivalent salt**, *H. Fazli and R. Golestanian*, *Phys. Rev. E* 76, 041801 (2007).

[60] **On the Landau-Levich Transition**, *M. Maleki, E. Reyssat, D. Quéré, and R. Golestanian*, *Langmuir* 23, 10116-10122 (2007).

[59] **Self-motile colloidal particles: from directed propulsion to random walk**, *J.R. Howse, R.A.L. Jones, A.J. Ryan, T. Gough, R. Vafabakhsh, and R. Golestanian*, *Phys. Rev. Lett.* 99, 048102 (2007).

Highlights:

○ "Microscopic Polystyrene Balls - now Jet-propelled!" *News from the American Physical Society (APS)* (16 July 2007)

○ "Artificial swimmers have no moving parts," *Physics Web (IoP Publishing)* (24 July 2007)

○ "Das (nano) Boot," *New Scientist* (16 November 2007)

IoP Select

[58] **Designing phoretic micro- and nano-swimmers**, *R. Golestanian, T.B. Liverpool, and A. Ajdari*, *New J. Phys.* 9, 126 (2007).

[57] **Evolution of growth modes for polyelectrolyte bundles**, *G.H. Lai, R. Coridan, O.V. Zribi, R. Golestanian, G.C.L. Wong*, *Phys. Rev. Lett.* 98, 187802 (2007).

[56] **Rectification of the lateral Casimir force in a vibrating non-contact rack and pinion**, A. Ashourvan, M.F. Miri, and R. Golestanian, Phys. Rev. E 75, 040103 (R) (2007).

[55] **Non-contact rack and pinion powered by the lateral Casimir force**, A. Ashourvan, M.F. Miri, and R. Golestanian, Phys. Rev. Lett. 98, 140801 (2007).

Highlights:

○ "Rack and pinion gets nano-treatment," nanotechweb.org (IoP Publishing) (26 April 2007)

2006 [54] **Dynamics of Liquid Rope Coiling**, M. Habibi, M. Maleki, R. Golestanian, N.M. Ribe, and D. Bonn, Phys. Rev. E 74, 066306 (2006).

[53] **The pH-induced swelling and collapse of a polybase brush synthesized by atom transfer radical polymerization**, M. Geoghegan, L. Ruiz-Pérez, C.C. Dang, A.J. Parnell, S.J. Martin, J.R. Howse, R.A.L. Jones, R. Golestanian, P.D. Topham, C.J. Crook, A.J. Ryan, D.S. Sivia, J.R.P. Webster, and A. Menelled, Soft Matter 2, 1076-1080 (2006).

[52] **Counterions between charged polymers exhibit liquid-like organization and dynamics**, T.E. Angelini, R. Golestanian, R.H. Coridan, J.C. Butler, A. Beraud, M. Krisch, H. Sinn, K.S. Schweizer, and G.C.L. Wong, Proc. Natl. Acad. Sci. U.S.A. 103, 7962 (2006).

[51] **Condensation of DNA-actin polyelectrolyte mixtures driven by ions of different valences**, O.V. Zribi, H. Kyung, R. Golestanian, T.B. Liverpool, and G.C.L. Wong, Phys. Rev. E 73, 031911 (2006).

[50] **Efficient in-depth trapping using an oil immersion objective lens**, S.N.S. Reihani, M.A. Charsooghi, H.R. Khalesifard, and R. Golestanian, Opt. Lett. 31, 766-768 (2006).

[49] **Measuring lateral efficiency of optical traps: the effect of tube length**, S.N.S. Reihani, H.R. Khalesifard, and R. Golestanian, Optics Comm. 259, 204 (2006).

[48] **Rod-like Polyelectrolyte Brushes with Mono- and Multivalent Counterions**, H. Fazli, R. Golestanian, P.L. Hansen, and M.R. Kolahchi, Europhys. Lett. 73, 429 (2006).

[47] **Can non-linear elasticity explain contact-line roughness at depinning?**, P. Le Doussal, K.J. Wiese, E. Raphael, R. Golestanian, Phys. Rev. Lett. 96, 015702 (2006).

2005 [46] **Lifshitz Interaction between Dielectric Bodies of Arbitrary Geometry**, R. Golestanian, Phys. Rev. Lett. 95, 230601 (2005).

[45] **Orientational ordering and dynamics of rodlike polyelectrolytes**, H. Fazli, R. Golestanian, and M.R. Kolahchi, Phys. Rev. E 72, 011805 (2005).

[44] **Elastic Correlations in Nucleosomal DNA Structure**, F. Mohammad-Rafiee and R. Golestanian, Phys. Rev. Lett. 94, 238102 (2005).

[43] **Propulsion of a molecular machine driven by asymmetric distribution of reaction-products**, R. Golestanian, T.B. Liverpool, A. Ajdari, Phys. Rev. Lett. 94, 220801 (2005).

[42] **Salt-induced condensation in actin-DNA mixtures**, O.V. Zribi, H. Kyung, R. Golestanian, T.B. Liverpool, and G.C.L. Wong, Europhys. Lett. 70, 541 (2005).

[41] **Propulsion at low Reynolds number**, A. Najafi and R. Golestanian, J. Phys.: Condens. Matter 17, S1203 (2005).

[40] **Thermophoresis in charged colloids**, S.N. Rasuli and R. Golestanian, J. Phys.: Condens. Matter 17, S1171 (2005).

[39] **The effect of anisotropic bending elasticity on the structure of bent DNA**, F. Mohammad-Rafiee and R. Golestanian, J. Phys.: Condens. Matter 17, S1165 (2005).

2004 [38] **Force generation due to fluctuations of media and boundaries**, R. Golestanian, Modern Phys. Lett. B 18, 1225 (2004).

[37] **Forces Induced by Non-Equilibrium Fluctuations: The Soret-Casimir Effect**, A. Najafi and R. Golestanian, Europhys. Lett. 68, 776 (2004).

[36] **Liquid rope coiling on a solid surface**, M. Maleki, M. Habibi, R. Golestanian, N.M. Ribe, and D. Bonn, Phys. Rev. Lett. 93, 214502 (2004).

[35] **Electrostatic Contribution to Twist Rigidity of DNA**, F. Mohammad-Rafiee and R. Golestanian, Phys. Rev. E 69, 061919 (2004).

[34] **Electromechanical Stiffening of Rods and Tubes**, R. Zandi, R. Golestanian, and J. Rudnick, Appl. Phys. Lett. 84, 5467 (2004).

[33] **Simple Swimmer at Low Reynolds Number: Three Linked Spheres**, A. Najafi and R. Golestanian, Phys. Rev. E 69, 062901 (2004).

Highlights:

- "Do the Nano-Locomotion," *Phys. Rev. Focus* (25 June 2004)
- "Fluid mechanics: Different strokes for nano-folks," *Nature* 430, 159 (2004) (Research highlights, 8 July 2004)
- "Teaching Nanotech to Swim," *MIT's Technology Review* (21 July 2004)
- Commentary in *Bell Labs Journal Club for Condensed Matter Physics* (September 2004)
- "Des nanonageurs sont possibles," *Science et Vie* (October 2004)
- "Shrinkage Department," *Popular Science* (February 2005)
- "Artificial Animalcules: In the microscopic realm, machines learn to swim," *Science News* (18 February 2006)

[32] **Moving Contact Lines on Heterogeneous Substrates**, R. Golestanian, Phil. Trans. R. Soc. Lond. A 362, 1613 (2004).

2003 [31] **Nonlinear Mechanical Response of DNA due to Anisotropic Bending Elasticity**, F. Mohammad-Rafiee and R. Golestanian, Eur. Phys. J. E 12, 599 (2003).

[30] **Phonon-Mediated Anomalous Dynamics of Defects**, A. Najafi and R. Golestanian, Eur. Phys. J. B 34, 99 (2003).

[29] **Anomalous Bending of a Polyelectrolyte**, R. Zandi, J. Rudnick, and R. Golestanian, Phys. Rev. E 67, 061805 (2003).

[28] **Roughening Transition in a Moving Contact Line**, R. Golestanian and E. Raphael, Phys. Rev. E 67, 031603 (2003).

[27] **Normal and Lateral Casimir Forces between Deformed Plates**, T. Emig, A. Hanke, R. Golestanian, and M. Kardar, Phys. Rev. A 67, 022114 (2003).

[26] **Probing Polyelectrolyte Elasticity Using Radial Distribution Function**, R. Zandi, J. Rudnick, and R. Golestanian, Phys. Rev. E 67, 021803 (2003).

2002 [25] **Radial Distribution Function of Rodlike Polyelectrolytes**, R. Zandi, J. Rudnick, and R. Golestanian, Eur. Phys. J. E 9, 41 (2002).

[24] **Fluctuations of Fluctuation-Induced "Casimir" Forces**, D. Bartolo, A. Ajdari, J.-B. Fournier, and R. Golestanian, Phys. Rev. Lett. 89, 230601 (2002).

[23] **Conformational Instability of Rodlike Polyelectrolytes due to Counterion Fluctuations**, R. Golestanian and T.B. Liverpool, Phys. Rev. E 66, 051802 (2002).

[22] **Tracer Diffusivity in a Time or Space Dependent Temperature Field**, R. Golestanian and A. Ajdari, Europhys. Lett. 59, 800 (2002).

[21] **Distribution of Interacting Ionic Particles in Disordered Media**, R. Golestanian, Europhys. Lett. 58, 712 (2002).

2001 [20] **Probing the Strong Boundary Shape Dependence of the Casimir Force**, T. Emig, A. Hanke, R. Golestanian, and M. Kardar, Phys. Rev. Lett. 87, 260402 (2001).

[19] **Dissipation in Dynamics of a Moving Contact Line**, R. Golestanian and E. Raphael, Phys. Rev. E 64, 031601 (2001).

[18] **Casimir Torques between Anisotropic Boundaries in Nematic Liquid Crystals**, R. Golestanian, A. Ajdari, and J.-B. Fournier, Phys. Rev. E 64, 022701 (2001).

[17] **Relaxation of a Moving Contact Line and the Landau-Levich Effect**, R. Golestanian and E. Raphael, Europhys. Lett. 55, 228 (2001), Erratum, Europhys. Lett. 57, 304 (2002).

Highlights:

- "Wetting dynamics: Adsorbed colloids relax slowly," *Nature Materials* 11, 99 (2012) (News & Views, 24 January 2012)

2000 [16] **Statistical Mechanics of Semiflexible Ribbon Polymers**, R. Golestanian and T.B. Liverpool, Phys. Rev. E 62, 5488 (2000).

[15] **Casimir Dispersion Forces and Orientational Pairwise Additivity**, R. Golestanian, Phys. Rev. E 62, 5242 (2000).

[14] **Dynamics of Counterion Condensation**, R. Golestanian, Europhys. Lett. 52, 47 (2000).

[13] **Finite Temperature Behavior of the $\nu = 1$ Quantum Hall Effect in Bilayer Electron Systems**, *M. Abolfath, R. Golestanian, and T. Jungwirth*, Phys. Rev. B 61, 4762 (2000).

1999 [12] **Comment on Adsorption of Polyelectrolytes onto a Colloid of Opposite Charge**, *R. Golestanian*, Phys. Rev. Lett. 83, 2473 (1999).

[11] **The “Friction” of Vacuum, and other Fluctuation-Induced Forces**, *M. Kardar and R. Golestanian*, Rev. Mod. Phys. 71, 1233 (1999).

Highlights:

○ “The force of fluctuations,” *Nature* 451, 136 (2008) (News & Views, 10 January 2008)

[10] **Collapse of Stiff Polyelectrolytes due to Counterion Fluctuations**, *R. Golestanian, M. Kardar, and T.B. Liverpool*, Phys. Rev. Lett. 82, 4456 (1999).

[9] **Motion-Induced Radiation from a Dynamically Deforming Mirror**, *F. Miri and R. Golestanian*, Phys. Rev. A 59, 2291 (1999).

1998 [8] **Path Integral Approach to the Dynamic Casimir Effect with Fluctuating Boundaries**, *R. Golestanian and M. Kardar*, Phys. Rev. A 58, 1713 (1998).

[7] **Statistical Mechanics of Double Stranded Semiflexible Polymers**, *T.B. Liverpool, R. Golestanian, and K. Kremer*, Phys. Rev. Lett. 80, 405 (1998).

1997 [6] **A Dynamical Test of Special Relativity Using Anomalous Electron g-Factor**, *M. Kohandel, R. Golestanian, and M.R.H. Khajehpour*, Phys. Lett. A 231, 315 (1997).

[5] **Mechanical Response of Vacuum**, *R. Golestanian, and M. Kardar*, Phys. Rev. Lett. 78, 3421 (1997).

Highlights:

○ “Quantum friction across the vacuum,” *Physics World* 11, 27 (1998) (February 1998)

○ *F. Chen, U. Mohideen, G. L. Klimchitskaya, and V. M. Mostepanenko*, Phys. Rev. Lett. 88, 101801 (2002) (Experimental verification of our theory work)

○ “Out of the void,” *New Scientist* (2 February 2002) (on both the theory and the experiment)

1996 [4] **Reduced Persistence Length and Fluctuation-Induced Interactions of Directed Semiflexible Polymers on Fluctuating Surfaces**, *R. Golestanian*, Europhys. Lett. 36, 557 (1996).

[3] **Fluctuation-Induced Interactions between Rods on a Membrane**, *R. Golestanian, M. Goulian, and M. Kardar*, Phys. Rev. E 54, 6725 (1996).

[2] **Fluctuation-Induced Interactions between Rods on Membranes and Interfaces**, *R. Golestanian, M. Goulian, and M. Kardar*, Europhys. Lett. 33, 241 (1996).

1995 [1] **A Test Theory of Local Structure of Space-time; A Finslerian Approach**, *R. Golestanian, M.R.H. Khajehpour, and R. Mansouri*, Class. Quantum Grav. 12, 273 (1995).

Proceedings Publications

[7] **Controlling Phoretic Swimmer Trajectory**, *S. Ebbens, A. Sadeghi, J. Howse, R. Golestanian, and R.A.L. Jones*, Mater. Res. Soc. Symp. Proc. Vol. 1346 (2011) DOI: 10.1557/opl.2011.1003.

[6] **The Dynamics for the Soret Motion of a Charged Spherical Colloid**, *S. N. Rasuli and R. Golestanian*, Proceedings of the 8th International Meeting on Thermo-diffusion, Edited by S. Wiegand, W. Köhler and J. Dhont, pp 269-74 (2008) (Forschungszentrum Jülich GmbH Zentralbibliothek, Verlag).

[5] **Fluctuation-induced forces in and out of equilibrium**, *R. Golestanian*, Proceedings of the 22nd IUPAP International Conference on Statistical Physics (STATPHYS 22), Pramana-Journal of Physics, 64 (6) 1029-1038 (2005).

[4] **Dynamics of a Moving Contact Line**, *R. Golestanian and E. Raphael*, Proceedings of the 4th European Coating Symposium ECS2001: Advances in Coating Processes, Edited by J.-M. Buchlin and J. Anthoine, pp. 65-72 (von Karman Institute, Rhode-St-Genèse, 2002).

[3] **Fluctuation-Induced Phenomena: From Biophysics To Cavity QED**, *R. Golestanian and M. Kardar*, Annual Reviews of Computational Physics VIII, Edited by D. Stauffer, pp. 229-260 (World Scientific, Singapore, 2000).

[2] **Statistical Mechanics of Double-Stranded Semi-flexible Polymers**, *T.B. Liverpool, R. Golestanian, and K. Kremer*, Statistical Mechanics of Biocomplexity: Proceedings of the XV Sitges Conference Held at Sitges, Barcelona, Spain, 8-12 June 1998, Edited by D. Reguera, J. M. Rubí, and J. M. G. Vilar, pp. 282 (Lecture Notes in Physics (Springer-Verlag), Vol 527).

^[1]**Path Integral Approach to the Dynamic Casimir Effect with Fluctuating Boundaries**, *R. Golestanian*, Proceedings of the ITAMP Topical Group Meeting on Casimir Forces (Harvard-Smithsonian Center Report, 1998).

Commentaries and Miscellaneous Publications

- 2010 ^[1]**Viewpoint: Debut of a hot “fantastic voyager”**, *R. Golestanian*, Physics 3, 108 (2010) [DOI: 10.1103/Physics.3.108].