

In Publication Pipeline

270. Josh Kelly, Alexander Y. Grosberg, Robijn Bruinsma “Generalized Flory Theory for Rotational Symmetry Breaking of Complex Macromolecules” arXiv:1809.01047
269. Cato Sandford, Daniel Seeto, and Alexander Y. Grosberg “*Active Sorting of Particles and the Gibbs Mixing Paradox*”,

Published

268. Angus McMullen, Miranda Holmes-Cerfon, Francesco Sciortino, Alexander Y. Grosberg, and Jasna Brujic “*Freely-jointed polymers made of droplets*,” Phys. Rev. Letters, 2018
267. Alexander Y. Grosberg, and Robijn Bruinsma “*Confining Annealed Branched Polymers inside Spherical Capsids*”, Journal of Biological Physics, v. **44**, n. 2, p. 133-145, 2018.
266. A.Y.Grosberg “*Ilya Mikhailovich Lifshitz (toward 100th anniversary)*,” Uspekhi Fizicheskikh Nauk, v. **188**, n. 1, p. 89-94, 2018.
265. Cato Sandford, and Alexander Y. Grosberg “*Memory effects in active particles with exponentially correlated propulsion*”, Physical Review E, v. **97**, n. 1, 2018.
264. Alexander Y.Grosberg, Bertrand Halperin, and John Singleton “*In celebration of Ilya Lifshitz*”, Physics Today, n. 11 (November), p. 44-50, 2017.
263. Cato Sandford, Alexander Y. Grosberg, and Jean-François Joanny “*Pressure and Flow of Exponentially Self-Correlated Active Particles*”, Physical Review E, v. **96**, n. 11, 052605, 2017.
262. Ralf Everaers, Alexander Y. Grosberg, Michael Rubinstein, Angelo Rosa “*Flory theory of randomly branched polymers*”, Soft Matter, v. **13**, p. 1223-1234, 2017.
261. Alexander Y. Grosberg, Joshua Kelly, and Robijn Bruinsma “*The Confinement of an Annealed Branched Polymer by a Potential Well*” Low Temperature Physics, v. **43**, n. 1, p. 122-131, 2017.
260. Alexander Y. Grosberg “*Vingt ans après (Twenty years after)*
Comment on “Disentangling DNA Molecules” by Alexander Vologodskii” Physics of Life Reviews, v. **18**, p. 139-143, 2016.
259. Alexander Y. Grosberg “*Do knots self-tighten for entropic reasons?*,” Vysokomolekulyarnye Soedineniya, Ser. A, v. **58**, n. 6, pp. 560-568, 2016; **English translation:** Polymer Science Ser. A (Moscow), v. **58**, n. 6, pp. 864-872, 2016.
258. Calin Plesa, Daniel Verschuere, Sergii Pud, Jaco van der Torre, Justus W. Ruitenber, Menno J. Witteveen, Magnus P. Jonsson, Alexander Y. Grosberg, Yitzhak Rabin, and Cees Dekker “*Direct observation of DNA knots using solid state nanopore*” Nature Nanotechnology, v. **11**, p. 1093 - 1097, 2016.
257. Alexander Y. Grosberg “*Ensemble view of RNAs and proteins: loops, knots, territories, and evolution*,” Biophysical Journal (News & Notable), v. **110**, n. 11, p. 2289-2290, 2016.

256. Jan Smrek, and Alexander Y. Grosberg “*Minimal surfaces on unconcatenated polymer rings in melt,*” ACS Macro Letters, v. **5**, p. 750-754, 2016.
255. Alexander Y. Grosberg “*Extruding loops to make loopy globule?*,” Biophysical Journal (News & Notable), v. **110**, n. 10, p. 2133-2135, 2016.
254. Alexander Y. Grosberg, Jean-François Joanny, Watee Srinin, and Yitzhak Rabin “*Scale-dependent viscosity in polymer fluids,*” Journal of Physical Chemistry B v. **120**, n. 26, p. 6383-6390, 2016.
253. Joshua Kelly, Alexander Y. Grosberg, Robijn Bruinsma “*Sequence dependence of viral RNA encapsidation,*” Journal of Physical Chemistry B v. **120**, n. 26, p. 6038-6050, 2016.
252. Robijn F. Bruinsma, Mauricio Comas-Garcia, Rees F. Garmann, Alexander Y. Grosberg “*Quasi-equilibrium self-assembly of small RNA viruses,*” Physical Review E v. **93**, n. 3, 032405, 2016.
251. Alexander Y. Grosberg, and Jean-François Joanny “*Nonequilibrium statistical mechanics of mixtures of particles in contact with different thermostats*” PRE v. **92**, n. 3, 032118, 2015.
250. Alexander Y. Grosberg, and Sergei K. Nechaev “*From statistics of regular tree-like graphs to distribution function and gyration radius of branched polymers*”, Journal of Physics A: Math. & Theor., v. **48**, 345003, 2015.
249. Jan Smrek, and Alexander Y. Grosberg “*Facilitated diffusion of proteins through crumpled fractal DNA globule*” PRE v. **92**, n. 1, 012702, 2015.
248. Henrique W. Moyses, Ross O. Bauer, Alexander Y. Grosberg, and David G.Grier “*A perturbative theory for Brownian vortexes*” PRE v. **91**, n. 6, 062144, 2015.
247. Jérémie Palacci, Stefano Sacanna, Anais Abramian, Jeremie Barral, Kasey Hanson, Alexander Y. Grosberg, David J. Pine, Paul M. Chaikin “*Artificial Rheotaxis,*” Science Advances, v. **1**, e1400214, 2015.
246. Jason Cantarella, Alexander Y. Grosberg, Robert Kusner, and Clayton Shonkwiler “*The Expected Total Curvature of Random Polygons*”, American Journal of Mathematics, v. **137**, n. 2, pages 411-438, 2015.
245. Jan Smrek, and Alexander Y. Grosberg “*On enumeration of Hilbert-like curves,*” Journal of Physics A: Mathematical and Theoretical, v. **48**, 195001, 2015.
244. Jan Smrek, and Alexander Y.Grosberg “*Understanding the dynamics of rings in the melt in terms of the annealed tree model,*” Journal of Physics: Condensed Matter, v. **27**, n. 6, 064117, 2015.
243. Alexander Y.Grosberg “*The tyranny of correspondence principle: Comment on “Fluctuations in the DNA double helix: A critical review” by Maxim D.Frank-Kamenetskii and Shikha Prakash*”, Physics of Life Reviews, v. **11**, n. 2, p. 178-180, 2014.
242. Robijn Bruinsma, Alexander Y.Grosberg, Yitzhak Rabin, and Alexandra Zidovska “*Chromatin Hydrodynamics,*” Biophysical Journal, v. **106**, n. 9, p. 1871-1881, 2014.
241. Shlomi Medalion, Michal Wagman, Alexander Y. Grosberg and Yitzhak Rabin “*Network formation by cross-hybridization of complementary strands to grafted ssDNA,*” Macro Letters, v. **3**, p. 191-193, 2014.
240. Jonathan D. Halverson, Jan Smrek, Kurt Kremer, and Alexander Y.Grosberg “*From a melt of rings to chromosome territories: the role of topological constraints in genome folding,*” Reports on Progress in Physics, v. **77**, 022601 (24 pages), 2014.

239. Alexander Y. Grosberg “*Annealed lattice animal model and Flory theory for the melt of non-concatenated rings: Towards the physics of crumpling*” *Soft Matter*, v. **10**, n. 4, p. 560-565, 2014.
238. Ludvig Lizana, and Alexander Y. Grosberg “*Exact expressions for the mobility and electrophoretic mobility of a weakly charged sphere in a simple electrolyte,*” *Europhysics Letters*, v. **104**, 68004 (6 pages), 2013. arXiv:1305.4060
237. Jonathan D.Halverson, Won Bo Lee, Gary S.Grest, Alexander Y.Grosberg, Kurt Kremer “*Reply to Comment on “Molecular dynamics simulation study of nonconcatenated ring polymers in a melt. I. Statics” [J. Chem. Phys. 134, 204904 (2011)]*,” *Journal of Chemical Physics*, v. **139**, 217102, 2013.
236. Jan Smrek and Alexander Y.Grosberg “*A novel family of space-filling curves in their relation to chromosome conformation in eukaryotes,*” *Physica A: Statistical Mechanics and its Applications*, v. **392**, n. 24, pp. 6375 - 6388, 2013.
235. Kun-Ta Wu, Lang Feng, Ruojie Sha, Rémi Dreyfus, Alexander Y. Grosberg, Nadrian C. Seeman, and Paul M. Chaikin “*Kinetics of DNA-Coated Sticky Particles,*” *Phys. Rev. E* v. **88**, 022304, 8 pages, 2013.
234. Alexander Y.Grosberg “*Fractal Plasma*”, BIOMAT 2011, International symposium on Mathematical and Computational Biology, Santiago de Chile, Chile, 5-10 November 2011, edited by Rubem P.Mondaini, pages 331-344, 2011.
233. Payam Rowghanian and Alexander Y. Grosberg “*Two Cases of Reciprocal Relations for Electric and Hydrodynamic Currents: a Rigid Polymer in a Nano-Channel and a Polyelectrolyte Gel,*” *Journal of Chemical Physics*, v. **139**, 024902, 6 pages, 2013.
232. Payam Rowghanian and Alexander Y. Grosberg “*Electrophoretic capture of a DNA chain into a nanopore,*” *Physical Review E*, v. **87**, n. 4, 042722, 2013.
231. Payam Rowghanian and Alexander Y. Grosberg “*Electrophoresis of a DNA coil near a nanopore,*” *Physical Review E*, v. **87**, n. 4, 042723, 2013.
230. Calin Plesa, Stefan Kowalczyk, Ruben Zinsmeester, Alexander Y.Grosberg, Yitzhak Rabin, Cees Dekker “*Fast Translocation of Proteins through Solid State Nanopores,*” *Nano Letters*, v. **13**, no. 2, pp. 658663, 2013.
229. Jonathan D. Halverson, Kurt Kremer, and Alexander Y. Grosberg “*Comparing the results of lattice and off-lattice simulations for the melt of nonconcatenated rings,*” *Journal of Physics A: Mathematical & Theoretical*, v. **46**, 065002, 2013.
228. Kun-Ta Wu, Lang Feng, Ruojie Sha, Rémi Dreyfus, Alexander Y. Grosberg, Nadrian C. Seeman, and Paul M. Chaikin “*Polygamous particles,*” *PNAS*, v. **109**, no. 46, pp. 18731-18736, 2012.
227. Alexander Y. Grosberg “*How two meters of DNA fit into a cell nucleus: polymer models with topological constraints and experimental data,*” *Vysokomolekulyarnye Soedineniya, Ser. C*, v. **54**, n. 7, pp. 963-974, 2012; **English translation:** *Polymer Science Ser. C (Moscow)*, v. **54**, n. 1, pp. 1-10, 2012.
226. Payam Rowghanian, and Alexander Y. Grosberg “*Propagation of tension along a polymer chain,*” *Physical Review E*, v. **86**, 011803, 8 pages, 2012.

225. Alexander Y.Grosberg, and Yitzhak Rabin “*What about a theory? Comment on “Nanopores: A journey towards DNA sequencing” by Meni Wanunu,*” *Physics of Life Reviews*, v. **9**, n. 3, pages 172-173, 2012.
224. Jonathan Halverson, Gary S.Grest, Alexander Y.Grosberg and Kurt Kremer “*Rheology of ring polymer melts: From linear contaminants to ring/linear blends,*” *Physical Review Letters*, v. **108**, 038301, 2012.
223. Yuichi Wakamoto, Alexander Y.Grosberg, Edo Kussell “*Optimal Lineage Principle for Age-Structured Populations,*” *Evolution*, v. **66**, n. 1, pp. 115134, 2012.
222. Payam Rowghanian, Alexander Y. Grosberg “*Force driven polymer translocation through a nanopore: an old problem revisited,*” *Journal of Physical Chemistry B*, v. **115**, n. 48, p. 14127-14135, 2011.
221. Alexander Y.Grosberg “*Crumpled Globule Model of DNA Packing in Chromosomes: from Predictions to Open Questions,*” BIOMAT 2010, International symposium on Mathematical and Computational Biology, Rio de Janeiro, Brazil, 24-29 July 2010, edited by Rubem P.Mondaini, pages 17-28, 2011.
220. Alexander Y.Grosberg “*Energy conservation versus conservation of energy: Comment on “The theory of bio-energy transport in the protein molecules and its properties” by Xiao-Feng Pang,*” *Physics of Life Reviews*, v. **8**, n. 3, pages 293-295, 2011.
219. Stefan W.Kowalczyk, Alexander Y.Grosberg, Yitzhak Rabin, and Cees Dekker “*Modeling the conductance and DNA blockade of solid-state nanopores,*” *Nanotechnology*, v. **22**, n. 31, 315101, 2011.
218. Jonathan D.Halverson, Won Bo Lee, Gary S.Grest, Alexander Y.Grosberg, Kurt Kremer “*Molecular dynamics simulation study of nonconcatenated rings in a melt. I. Statics,*” *Journal of Chemical Physics*, v. **134**, 204904, 2011 [13 pages].
217. Jonathan D.Halverson, Won Bo Lee, Gary S.Grest, Alexander Y.Grosberg, Kurt Kremer “*Molecular dynamics simulation study of nonconcatenated rings in a melt. II. Dynamics,*” *Journal of Chemical Physics*, v. **134**, 204905, 2011 [10 pages].
216. Alexander Y.Grosberg, Yitzhak Rabin “*DNA capture into a nanopore: interplay of diffusion and electrohydrodynamics,*” *Journal of Chemical Physics*, v. **133**, 165102, 2010 [15 pages].
215. Bo Sun, David G. Grier, and Alexander Y. Grosberg “*Minimal Model for Brownian Vortexes,*” *Phys. Rev. E*, v. **82**, 021123 (2010) [6 pages].
214. Meni Wanunu, Will Morrison, Yitzhak Rabin, Alexander Y. Grosberg, Amit Meller “*Electrostatic focusing of unlabeled DNA into nanoscale pores using a salt gradient,*” *Nature Nanotechnology*, v. **5**, p. 160-165, 2010; Published online: 20 December 2009, doi:10.1038/nnano.2009.379.
213. Longhua Hu, Alexander Y. Grosberg, and Robijn Bruinsma “*First passage time distribution for the 1D diffusion of particles with internal degrees of freedom,*” *Journal of Physics A: Math. Theor.* v. **42**, 434011, 2009 [26 pages].
212. Bo Sun, Jiayi Lin, Ellis Darby, Alexander Y.Grosberg, David G. Grier “*Brownian vortexes,*” *Phys. Rev. E*, v. **80**, 010401, 2009 [4 pages].
211. Quan Wen, Armen Stepanyants, Guy N. Elston, Alexander Y. Grosberg, and Dmitri B. Chklovskii “*Maximization of the connectivity repertoire as a statistical principle governing the shapes of dendritic arbors,*” *PNAS*, v. **106**, July 28, p. 12536-12541, 2009.

210. Thomas Vettorel, Alexander Y.Grosberg, and Kurt Kremer “*Territorial Polymers*,” *Physics Today*, v. **62**, n. 8, p. 72, 2009.
209. Thomas Vettorel, Alexander Y.Grosberg, and Kurt Kremer “*Statistics of polymer rings in the melt: A numerical simulation study*,” *Physical Biology*, v. **6**, n. 2, 025013, 2009.
208. A.Y. Grosberg “*A few notes about polymer knots*,” *Vysokomolekulyarnye Soedineniya, Ser. A*, v. **51**, n. 1, pp. 70-79, 2009; **English translation:** *Polymer Science Ser. A (Moscow)*, v. **51**, n. 1, pp. 94-105, 2009.
207. Longhua Hu, Alexander Y. Grosberg, and Robijn Bruinsma “*Are DNA Transcription Factor Proteins Maxwellian Demons?*,” *Biophysical Journal*, **95**, n. 3, p. 1151-1156, 2008 (ArXiv:0709.1495).
206. Alexander Y. Grosberg “*Total curvature and total torsion of a freely jointed circular polymer with $n \gg 1$ segments*,” *Macromolecules*, v. **41**, n. 12, p. 4524-4527, 2008.
205. S. Bhattacharya, A. Milchev, V.G. Rostiashvili, A.Y. Grosberg, T.A. Vilgis “*Adsorption Kinetics of a Single Polymer on a Solid Plane*,” *Physical Review E*, v. **77**, 061603, 12 pages, 2008.
204. Alexander Y. Grosberg and Yitzhak Rabin “*Metastable tight knots in a worm-like polymer*,” *Physical Review Letters*, v. **99**, 217801, 2007. (cond-mat/0702160)
203. Carmen Alvarez-Lorenzo, Jeffrey Chuang, Angel Concheiro, Alexander Y. Grosberg “*Imprinting Using Smart Polymers*,” Chapter 7 in: “*Smart Polymers, Applications in Biotechnology and Biomedicine*,” edited by Igor Galaev and Bo Mattiasson, CRC Press, Boca Raton-London-New York, 2007, p. 211-246.
202. Longhua Hu, Alexander Y. Grosberg “*Heteropolymer Sequence Design and Preferential Solvation of Hydrophilic Monomers: One More Application of Random Energy Model*,” *Physical Review E*, v. **75**, n. 4, 041921 (14 pages), 2007.
201. Edo Kussell, Stanislas Leibler, and Alexander Grosberg “*Polymer-population mapping and localization in the space of phenotypes*,” *Phys. Rev. Lett.* v. **97**, 068101, 2006.
200. S.Rapaport, Y.Rabin, A.Y.Grosberg “*Worm-Like Polymer Loops and Fourier Knots*,” *J. Phys. A: Math. & Gen.* v. **39**, p. L507-L513, 2006. (cond-mat/0510805)
199. N.T.Moore, A.Y.Grosberg “*Abundance of trivial knots in various polymer chain models*,” *J. Phys. A: Math. & Gen.* v. **39**, p. 9081-9092, 2006. (cond-mat/0604225)
198. A.Y.Grosberg, S.Nechaev, M.Tamm, O. Vasilyev “*How long does it take to pull an ideal polymer into a small hole?*,” *Physical Review Letters*, v. **96**, 228105, 2006. (cond-mat/0510418).
197. Rhonald C. Lua, Alexander Y. Grosberg “*Statistics of Knots, Geometry of Conformations, and Evolution of Proteins*,” *PLoS Computational Biology*, v. **2**, n. 5, e45 (8 pages), 2006.
196. Tao Hu, A.Y.Grosberg, B.I.Shklovskii “*The suspension of nanowires in a weakly conducting medium*,” *Physical Review B*, v. **73**, n. 5, 155434, 2006 (cond-mat/0602154).
195. Tao Hu, A.Y.Grosberg, B.I.Shklovskii “*How proteins search for their specific sites on DNA: the role of DNA conformation*,” *Biophysical Journal*, v. **90**, n. 4, p. 2731-2744, 2006. (q-bio.BM/0510043).
194. Alexander Y.Grosberg, Alexei R.Khokhlov “*After-action of the ideas of I.M.Lifshitz in polymer and biopolymer physics*,” *Advances in Polymer Science*, v. **196**, p. 189-210, 2006.

193. Rhonald C. Lua, Alexander Y. Grosberg “*First passage times and asymmetry of DNA translocation,*” Physical Review E, v. **72**, n. 6, 061918 (8 pages), 2005. (q-bio.BM/0508010).
192. N.T. Moore, A.Y. Grosberg “*Limits of Analogy Between Self-Avoidance and Topology-Driven Swelling of Polymer Loops,*” Physical Review E v. **72**, n. 6, 061803 (10 pages), 2005. cond-mat/0506786
191. Rhonald C. Lua, Nathan T. Moore, Alexander Y. Grosberg “*Under-Knotted and Over-Knotted Polymers: 2. Compact self-avoiding loops,*” In: Physical and Numerical Models in Knot Theory, Including Applications to the Life Sciences, Series on Knots and Everything, vol. 36, J.A.Calvo, K.C.Millet, E.J.Rawdon, A.Stasiak (Editors), World Scientific, 2005, p. 385-398.
190. Nathan T. Moore, Rhonald C. Lua, Alexander Y. Grosberg “*Under-knotted and over-knotted polymers: 1. Unrestricted loops,*” In: Physical and Numerical Models in Knot Theory, Including Applications to the Life Sciences, Series on Knots and Everything, vol. 36, J.A.Calvo, K.C.Millet, E.J.Rawdon, A.Stasiak (Editors), World Scientific, 2005, p. 363-384.
189. Rhonald C. Lua, Alexander Y. Grosberg “*On practical applicability of the Jarzynski relation in statistical mechanics: a pedagogical example,*” Journal of Physical Chemistry B, v. **109**, n. 14, p. 6805-6811, 2005.
188. Phillip L. Geissler, Eugene I. Shakhnovich, Alexander Y. Grosberg “*Solvation vs. freezing in a heteropolymer globule,*” Physical Review E, v. **70**, 021802, 2004.
187. K. Ito, J. Chuang, C. Alvarez-Lorenzo, T. Watanabe, N. Ando, A.Y. Grosberg “*Multiple point adsorption of target molecules by heteropolymer gels,*” Macromolecular Symposia, v. **207**, p. 1-16, 2004.
186. N.T. Moore, R. Lua, A.Y. Grosberg “*Topologically Driven Swelling of a Polymer Loop,*” PNAS, v. **101**, n. 37, p. 13431-13435, 2004.
185. A.Grosberg “*Statistical Mechanics of Protein Folding: Some Outstanding Problems,*” ”Computational Soft Matter: From Synthetic Polymers to Proteins,” edited by N.Attig, K.Binder, H.Grubmuller, K.Kremer, John von Neuman Institute for Computing, 2004, p. 375-399.
184. Rhonald Lua, Alexander L. Borovinskiy, Alexander Y. Grosberg “*Fractal and statistical properties of large compact polymers: a computational study,*” Polymer, v. **45**, n. 2, p. 717-731, 2004.
183. Alexander Y. Grosberg “*Simple model of a molecular construction ,*” Biophysics (Moscow) v. **48**, n. 6, p. , 2003.
English translation: v. **48**, n.6, p. 959-962, 2003.
182. Tatiana Burova, Natalia Grinberg, Alexander Dubovik, Kazunori Tanaka, Valerii Grinberg, Alexander Grosberg “*Effects of ligand binding on relative stability of subchain conformations of weakly charged N-isopropilacrylamide gels in swollen and shrunken states,*” Macromolecules, v. **36**, p.9115-9121, 2003.
181. K. Ito, J. Chuang, C. Alvarez-Lorenzo, T. Watanabe, N. Ando, A.Y. Grosberg “*Multiple point adsorption in a heteropolymer gel and the Tanaka approach to imprinting: Experiment and Theory,*” Progress in Polymer Science, v. **28**, n. 10, p. 1489-1515, 2003.
180. A.Grosberg and H.Frisch “*Winding angle distribution for planar random walk, polymer ring entangled with an obstacle, and all that: Spitzer-Edwards-Prager-Frisch model revisited,*” J. Phys. A: Math. & Gen., v. **36**, n. 34, p. 8955-8981, 2003. Corrigendum: J. Phys. A: Math. & Gen., v. **37**, n. 8, p. 3071, 2004.

179. A.Y.Grosberg “*Bridging the Time Scale Gap: How Does Foldable Polymer Navigate its Conformation Space?*,” “*Bridging Time Scales: Molecular Simulations for the Next Decade*,” edited by P.Nielaba, M.Mareschal, and G. Ciccotti, Springer, 2003, p. 129-142.
178. Alexander L. Borovinskiy, Alexander Y. Grosberg “*Design of Toy Proteins Capable to Rearrange Conformations in a Mechanical Fashion*,” *Journal of Chemical Physics*, v. **118**, n. 11, p. 5201-5212, 2003.
177. M.R.Stukan, V.A.Ivanov, A.Y.Grosberg, W.Paul, K.Binder “*Chain Length Dependence of the State Diagram of a Single Stiff-Chain Macromolecule: Theory and Monte Carlo Simulation*,” *Journal of Chemical Physics*, v. **118**, n. 7, p. 3392-3400, 2003.
176. A.Y.Grosberg “*A few disconnected notes related to Levinthal paradox*,” *Journal of Biomolecular Structure & Dynamics*, v. **20**, n. 3, p. 317-321, 2002.
175. M. Tanaka, A. Grosberg “*Electrophoresis of Charge Inverted Macroion Complex: Molecular Dynamics Study*,” *European Physics Journal E*, v. **7**, n. 4, p. 371-379, 2002. cond-mat/0106561
174. A.Y.Grosberg, T.T.Nguen, and B. Shklovskii “*Colloquium: The Physics of Charge Inversion in Chemical and Biological Systems*,” *Reviews of Modern Physics*, v. **74**, n. 2, p. 329-345, 2002.
173. T. T. Nguyen, A.Y. Grosberg, B. I. Shklovskii “*Lateral correlation of multivalent counterions is the universal mechanism of charge inversion*,” In “*Electrostatic Effects in Soft Matter and Biophysics*” Proceedings of the NATO Advanced Study Institute, Les Houches, France, 1-13 October 2000, edited by Christian Holm, Patrick Kkicheff, and Rudolf Podgornik, NATO SCIENCE SERIES: II: Mathematics, Physics and Chemistry, Volume 46, Kluwer Academic Publishers, Dordrecht ; cond-mat/0101103
172. A.Grosberg “*Protein Folding in Polymer Physics Context*,” Proceedings of the International School of Physics “*Enrico Fermi*,” Course CXLV, R.A.Brogliola, E.I.Shakhnovich, G.Tiana (Eds.), IOS Press, Amsterdam, 2001, p. 299-311.
171. E.N. Govorun, V.A. Ivanov, A.R. Khokhlov, P.G. Khalatur, A.L. Borovinsky, A.Y. Grosberg “*Primary Sequences of Protein-Like Copolymers: Levy Flight Type Long Range Correlations*,” *Physical Review E*, v. **64**, n. 10, 040903, 2001.
170. J. Chuang, A. Grosberg, M. Kardar “*Free Energy Self-Averaging in Protein-Sized Random Heteropolymers*,” *Physical Review Letters*, v. **87**, n. 7, 078104, 2001.
169. T. Watanabe, K. Ito, C. Alvarez-Lorenzo, A.Y. Grosberg, and T. Tanaka “*Salt effects on multiple-point adsorption of target molecules by heteropolymer gel*,” *Journal of Chemical Physics*, v. **115**, n. 3, pp. 1596-1600, 2001.
168. H. Hiratani, C. Alvarez-Lorenzo, J. Chuang, O. Guney, A.Y. Grosberg, and T. Tanaka “*Effect of Reversible Cross-linker, N, N'-Bis(acryloyl)cystamine, on Calcium Ion Adsorption by Imprinted Gels*,” *Langmuir*, v. **17**, n. 14, p. 4431-4436, 2001.
167. C. Alvarez-Lorenzo, H. Hiratani, K. Tanaka, K. Stancil, A.Y. Grosberg, and T. Tanaka “*Simultaneous Multiple-Point Adsorption of Aluminum Ions and Charged Molecules by a Polyampholyte Thermosensitive Gel: Controlling Frustrations in a Heteropolymer Gel*,” *Langmuir*, v. **17**, n. 12, p. 3616-3622, 2001.
166. M. Tanaka, A. Grosberg “*Giant Charge Inversion of a Macroion Due to Multivalent Counterions and Monovalent Coions: Molecular Dynamics Study*,” *Journal of Chemical Physics*, v. **115**, n. 1, pp. 567-574, 2001. cond-mat/0102209

165. A.B. Greytak, A.Y. Grosberg, and T. Tanaka “*Shape imprinting due to variable disulfide bonds in polyacrylamide gels,*” *Journal of Chemical Physics*, v. **114**, n. 23, p. 10551-10556, 2001.
164. C. Alvarez-Lorenzo, O. Guney, T. Oya, Y. Sakai, M. Kobayashi, T. Enoki, Y. Takeoka, T. Ishibashi, K. Kuroda, K. Tanaka, G. Wang, A.Y. Grosberg, S. Masamune, T. Tanaka “*Reversible Adsorption of Calcium Ions by Imprinted Temperature Sensitive Gels,*” *Journal of Chemical Physics*, v. **114**, n. 6, p. 2812-2816, 2001.
163. V.Ya. Grinberg, A. S. Dubovik, D.V. Kuznetsov, N.V. Grinberg, A.Y. Grosberg, and T. Tanaka “*Studies of the Thermal Volume Transition of Poly(N-isopropylacrylamide) Hydrogels by High-Sensitivity Differential Scanning Microcalorimetry. 2. Thermodynamic Functions,*” *Macromolecules*, v. **33**, n. 23, p. 8685-8692, 2000.
162. T. Enoki, T. Oya, K. Tanaka, T. Watanabe, T. Sakiyama, K. Ito, Y. Takeoka, G. Wang, M. Annaka, K. Hara, R. Du, J. Chuang, K. Wasserman, A.Y. Grosberg, S. Masamune, and T. Tanaka “*Frustrations in Polymer Conformation in Gels and Their Minimization through Molecular Imprinting,*” *Physical Review Letters*, v. **85**, n. 23, p. 5000-5003, 2000.
161. C. Alvarez-Lorenzo, O. Guney, T. Oya, Y. Sakai, Masatoshi Kobayashi, T. Enoki, Y. Takeoka, T. Ishibashi, K. Kuroda, K. Tanaka, G. Wang, A.Y. Grosberg, S. Masamune, and T. Tanaka “*Polymer Gels That Memorize Elements of Molecular Conformation,*” *Macromolecules*, v. **33**, n. 23, p. 8693-8697, 2000.
160. A.Y. Grosberg “*Critical Exponents for Random Knots,*” *Physical Review Letters*, v. **85**, n. 18, p. 3858-3861, 2000.
159. G. Wang, K. Kuroda, T. Enoki, A. Grosberg, S. Masamune, T. Oya, Y. Takeoka, and T. Tanaka “*Gel Catalysts That Switch On and Off,*” *Proc. Natl. Acad. Sci. USA*, v. **97**, n. 18, p. 9861-9864, August 29, 2000.
158. T.T. Nguen, A.Y.Grosberg, and B. Shklovskii “*Macroions in salty water with multivalent ions: Giant inversion of charge,*” *Physical Review Letters*, v. **85**, n. 7, p. 1568-1571, 2000.
157. T. T.Nguen, A.Y.Grosberg, and B. Shklovskii “*Screening of a charged particle by multivalent counterions in salty water: Strong charge inversion,*” *Journal of Chemical Physics*, v. **113**, n. 3, p. 1110-1125, 2000.
156. J. Chuang, A.Y. Grosberg, T. Tanaka “*Topological Repulsion Between Polymer Globules,*” *Journal of Chemical Physics*, v. **112**, n. 14, p. 6434-6442, 2000.
155. R. Du, A.Y. Grosberg, T. Tanaka, and Michaelle Rubinstein “*Unexpected Scenario of Glass Transition in Polymer Globules: an Exactly Enumerable Model,*” *Physical Review Letters*, v. **84**, n. 11, p. 2417-2420, 2000.
154. I.N.Berezovskii, A.Y.Grosberg, and E.N.Trifonov “*Closed loops of nearly standard size - common basic element of protein structure,*” *FEBS Lettres*, v. **466**, n. 2-3, p. 283-286, 2000.
153. R. Du, A.Y. Grosberg, T. Tanaka “*Random Walks in the Space of Conformations of Toy Proteins,*” *Physical Review Letters*, v. **84**, n. 8, p. 1828-1831, 2000.
152. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Heteropolymer Freezing and Design: Towards Physical Models of Protein Folding,*” *Reviews of Modern Physics*, v. **72**, n. 1, p. 259-314, 2000.
151. R. Du, V.S. Pande, A.Y. Grosberg, T. Tanaka, E.I. Shakhnovich “*On the Role of Conformational Geometry in Protein Folding,*” *Journal of Chemical Physics*, v. **111**, n. 22, p. 10375-10380, 1999.

150. R. Du, A.Y. Grosberg, T. Tanaka “*Coexistence of Native and Denatured Phases in a Single Protein-like Molecule,*” Physical Review Letters, v. **83**, n. 22, p. 4670-4673, 1999.
149. T. Oya, T. Enoki, A.Y. Grosberg, S. Masamune, T. Sakiyama, Y. Takeoka, K. Tanaka, G. Wang, Y. Yilmaz, M.S. Feld, Ramachandra Dasari, and T. Tanaka “*Reversible Molecular Adsorption Based on Multiple-Point Interaction by Shrinkable Gels,*” Science, v. **286**, n. 5444, Nov 19, p. 1543-1545, 1999.
148. V.Y.Grinberg, N.V.Grinberg, L.M.Mikheeva, A.T.Dembo, E.E.Makhaeva, A.R.Khokhlov, A.Y.Grosberg, T.Tanaka “*A new hydrogel system undergoing a volume phase transition upon heating,*” Macromolecular Chemistry and Physics, v. **200**, n. 7, p. 1603-1607, 1999.
147. M. Tanaka, A.Y. Grosberg, and T. Tanaka “*Molecular Dynamics Simulations of Polyampholytes,*” Langmuir, v. **15**, n. 12, p. 4052-4055, 1999.
146. Y. Takeoka, A.N. Berker, R. Du, T. Enoki, A. Grosberg, M. Kardar, T. Oya, K. Tanaka, G. Wang, X. Yu, and T. Tanaka “*First Order Phase Transition and Evidence for Frustrations in Polyampholytic Gels,*” Physical Review Letters, v. **82**, n. 24, p. 4863-4865, 1999.
145. M. Tanaka, A.Y. Grosberg, and T. Tanaka “*Molecular Dynamics of Strongly-Coupled Multichain Coulomb Polymers in Pure and Salt-Added Langevin Fluids,*” Journal of Chemical Physics, v. **110**, n. 16, p. 8176-8188, 1999.
144. N.V. Grinberg, A. S. Dubovik, V.Ya. Grinberg, D. V.Kuznetsov, E.E. Makhaeva, A.Y. Grosberg, and T. Tanaka “*Studies of the thermal volume transition of poly(N-isopropylacrylamide) hydrogels by high-sensitivity differential scanning microcalorimetry. 1. Dynamic effects,*” Macromolecules, v. **32**, n. 5, p. 1471-1475, 1999.
143. A.Y.Grosberg “*Entropy of a Knot: Simple Arguments About Difficult Problem,*” In: Ideal Knots, Edited by A.Stasiak, V.Katrich, L.H.Kauffman, World Scientific, 1998, p. 129-142.
142. T. Tanaka, T. Enoki, A.Y. Grosberg, S. Masamune, T. Oya, Y. Takaoka, K. Tanaka, C. Wang, G. Wang “*Reversible Molecular Adsorption as a Tool to Observe Freezing and to Perform Design of Heteropolymer Gels,*” Berichte der Bunsen-Gesellschaft Phys. Chem., v. **102**, n. 11, p. 1529-1533, 1998.
141. R.Du, A.Y.Grosberg, T.Tanaka “*Models of Protein Interactions: How to Choose One,*” Folding & Design, v. **3**, n. 3, p. 203-207, 1998.
140. T.P. Witelski, A.Y. Grosberg, T. Tanaka “*On the Properties of Polymer Globules in the High Density Limit,*” Journal of Chemical Physics, v. **108**, n. 21, p. 9144-9149, 1998.
139. V.S.Pande, A.Y.Grosberg, T.Tanaka, D.S.Rokhsar “*Pathways for Protein Folding: is a New View Needed?,*” Current Opinion in Structural Biology, v. **8**, p. 68-79, 1998.
138. R. Du, V.S. Pande, A.Y. Grosberg, T. Tanaka, E.I. Shakhnovich “*On the Transition Coordinate for Protein Folding,*” Journal of Chemical Physics, v. **108**, n. 1, p. 334-350, 1998.
137. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Statistical Mechanics of Simple Models of Protein Folding and Design,*” Biophysical Journal, v. **73**, n. 12, p. 3192-3210, 1997.
136. M. Tanaka, A.Y.Grosberg, V.S.Pande, T. Tanaka “*Molecular Dynamics Study of the Structure Organization in a Strongly Coupled Chain of Charged Particles,*” Physical Review E, v. **56**, n. 11, p. 5798-5808, 1997.

135. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Thermodynamics of the Coil to Frozen Globule Transition in Heteropolymers,*” Journal of Chemical Physics, v. **107**, n. 13, p. 5118-5124, 1997.
134. V.S.Pande, A.Y.Grosberg, T.Tanaka “*How to Create Polymers with Protein-like Capabilities: A Theoretical Suggestion,*” Physica D, v. **107**, p. 316-321, 1997.
133. A.Y.Grosberg, A.R.Khokhlov “*Giant Molecules: Here, There, and Everywhere...*,” Academic Press, 1997, 244p.
132. V.S.Pande, A.Y.Grosberg, T.Tanaka “*On the Theory of Folding Kinetics for Short Proteins,*” Folding & Design, v. **2**, p. 109-114, 1997.
131. L.Bromberg, A.Y.Grosberg, E.S.Matsuo, Y.Suzuki, T.Tanaka “*Dependency of Swelling on the Length of Subchain in Poly(N, N-dimethylacrylamide)-Based Gels,*” Journal of Chemical Physics, v. **106**, n. 7, p. 2906-2910, 1997.
130. A.Y.Grosberg “*Disordered Polymers,*” Uspekhi Fizicheskikh Nauk, v. **167**, n. 2, p. 129-166, 1997. English Translation: Physics - Uspekhi, v. **40**, n. 2, p. 125-158, 1997.
129. A.Y.Grosberg, A.Feigel, Y.Rabin “*Flory-Type Theory of a Knotted Ring Polymer*” Physical Review E, v. **54**, n. 6, p. 6618-6622, 1996.
128. A.Y.Grosberg “*Disordered Polymers: From Statistical Physics to Biology,*” Troisieme Cycle de la Physique en Suisse Romande, Semestre D’Hiver 1995-1996, 106p.
127. V.S.Pande, A.Y.Grosberg, C.Joerg, M.Kardar, T.Tanaka “*Freezing Transition of Compact Polyampholytes,*” Physical Review Letters, v. **77**, n. 17, p. 3565-3568, 1996.
126. S.K.Nechaev, A.Y.Grosberg, A.M.Vershik “*Random Walks on Braid Groups: Brownian Bridges, Complexity and Statistics,*” Journal of Physics A: Math. & General, v. **29**, n. 10, p. 2411-2433, 1996.
125. A.E.English, S.Mafe, J.A.Manzanares, X.Yu, A.Y.Grosberg, T.Tanaka “*Equilibrium Swelling Properties of Polyampholytic Hydrogels ,*” Journal of Chemical Physics, v. **104**, n. 21, p. 8713-8720, 1996.
124. V.S.Pande, A.Y. Grosberg, C.Joerg, T.Tanaka “*Is Heteropolymer Freezing Well Described by the Random Energy Model? ,*” Physical Review Letters, v. **76**, n. 21, p. 3987-3990, 1996.
123. T.Tanaka, C.N.Wang, V.S.Pande, A.Y.Grosberg, A.English, S.Masamune, H.Gold, R.Levy, K.King “*Polymer Gels That Can Recognize and Recover Molecules*” Faraday Discussions, Issue 101, p. 201-206, 1995.
122. V.S.Pande, A.Y.Grosberg, T.Tanaka “*How Accurate Must Potentials Be for Successful Modeling of Protein Folding?,*” Journal of Chemical Physics, v. **103**, n. 21, p. 9482-9491, 1995.
121. Y.Rabin, A.Y.Grosberg, T.Tanaka “*Metastable Globules in Good Solvents: Topologically Stabilized State of Polymers,*” Europhysics Letters, v. **32**, n. 6, p. 505 - 510, 1995.
120. L.A.Blumenfeld, A.Y.Grosberg “*Gibbs Paradox and the Notion of Construction in Thermodynamics and Statistical Physics,*” Biofizika, v. **40**, n. 3, p. 660 - 667, 1995. English Translation: Biophysics, v. **40**, n. 3, p. 653-660, 1995.
119. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Phase Diagram of an Imprinted Copolymer in a Random External Field,*” Journal of Physics A: Math. & General, v. **28**, n. 7, p. 3657 - 3666, 1995.

118. A.Y.Grosberg, A.M.Gutin, E.I.Shakhnovich “*Conformational Entropy of a Branched Polymer,*” *Macromolecules*, v. **28**, n. 10, p. 3718 - 3727, 1995.
117. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Phase Diagram of Heteropolymers with an Imprinted Conformation,*” *Macromolecules*, v. **28**, n. 7, p. 2218 - 2227, 1995.
116. B.Chu, Q.Ying, A.Y.Grosberg “*Two-Stage Kinetics of Single Chain Collapse. Polystyrene in Cyclohexane,*” *Macromolecules*, v. **28**, n. 1, p. 180 - 189, 1995.
115. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Freezing Transition of Random Heteropolymers Consisting of an Arbitrary Set of Monomers,*” *Physical Review E*, v. **51**, n. 4, p. 3381 - 3392, 1995.
114. N.V.Khroustova, K.Daoulas, A.Y.Grosberg “*Topological Properties of the Sequence Space and their Role in Macromolecular Evolution,*” *Biofizika*, v. **40**, n. 1, p. 5 - 18, 1995.
113. A.S.Borovik, A.Y.Grosberg, M.D.Frank-Kamenetskii “*Fractality of DNA Texts,*” *Journal of Biomolecular Structure and Dynamics*, v. **12**, n. 3, p. 655 - 669, 1994.
112. A.Y.Grosberg “*Polymers,*” *Encyclopedia of Physics*, v. **4**, p. 17 - 20, “*Bolshaya Rossiiskaya Enciklopediya,*” Moscow, 1994.
111. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Thermodynamic Procedure to Synthesize Heteropolymers That Can Renature to Recognize a Given Target Molecule,*” *Proceedings of the National Academy of Sciences USA*, v. **91**, p. 12976 - 12979, 1994.
110. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Nonrandomness in Protein Sequences: Evidence for a Physically Driven Stage of Evolution?,*” *Proceedings of the National Academy of Sciences USA*, v. **91**, p. 12972 - 12975, 1994.
109. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Folding Thermodynamics and Kinetics of Imprinted Renaturable Heteropolymers,*” *Journal of Chemical Physics*, v. **101**, n. 9, p. 8246 - 8257, 1994.
108. V.S.Pande, A.Y.Grosberg, T.Tanaka “*Phase Diagram of Imprinted Copolymers,*” *Le Journal de Physique II France*, v. **4**, n. 10, p. 1771 - 1784, 1994.
107. V.S.Pande, C.Joerg, A.Y.Grosberg, T.Tanaka “*Enumeration of the Hamiltonian Walks on a Cubic Sublattice,*” *Journal of Physics A: Math & General*, v. **27**, n. 18, p. 6231 - 6236, 1994.
Correction: *Journal of Physics A: Math & General*, v. **29**, n. 15, p. 4753, 1996.
106. A.Y.Grosberg, S.F.Izrailev, S.K.Nechaev “*Phase Transition in a Heteropolymer Chain at a Selective Interface,*” *Physical Review E*, v. **50**, n. 3, p. 1912-1921, 1994.
105. A.Y.Grosberg, A.R.Khokhlov “*Statistical Physics of Macromolecules,*” AIP Press, New York, 1994, 350 p.
104. A.Y.Grosberg, D.V.Kuznetsov “*Single Chain Collapse or Precipitation? Kinetic Diagram of States of Polymer Solution,*” *Macromolecules*, v. **26**, n. 16, p. 4249-4251, 1993.
103. A.Y.Grosberg, N.V.Khroustova “*Collective Properties of Mutual-Learned Neural Networks System in an Information Field,*” *Biofizika*, v. **38**, n. 4, p. 726-735, 1993.
102. H.L.Frisch, A.Y.Grosberg “*On Microphase Segregation of Interpenetrating Polymer Networks,*” *Die Makromolekulare Chemie, Theory and Simulations*, v. **2**, n. 4, p. 517-522, 1993.
101. A.Y.Grosberg, Y.Rabin, S.Havlin, A.Neer “*Self-Similarity In DNA Structure: What Are Introns?,*” *Biofizika*, v. **38**, n. 1, p. 75-83, 1993.

100. A.Y.Grosberg, Y.Rabin, S.Havlin, A.Neer “*Crumpled Globule Model of Three Dimensional Structure of DNA*,” Europhysics Letters, v. **23**, n. 5, p. 373-378, 1993.
99. A.M.Gutin, A.Y.Grosberg, E.I.Shakhnovich “*Microphase Separation in Randomly Branched Polymers*,” Macromolecules, v. **26**, n. 14, p. 3598-3600, 1993.
98. A.M.Gutin, A.Y.Grosberg, E.I.Shakhnovich “*Globular State of Branched Random Heteropolymers*,” Journal of Physics A: Mathematical and General, v. **26**, n. 5, p. 1037-1049, 1993.
97. A.M.Gutin, A.Y.Grosberg, E.I.Shakhnovich “*Polymers with Annealed and Quenched Branches Belong to Different Universality Classes*,” Macromolecules, v. **26**, n. 6, p. 1293-1295, 1993.
96. A.Y.Grosberg “*Two Types of Topological Constraints in Polymer Networks*,” Macromolecules, v. **26**, n. 12, p. 3200-3204, 1993.
95. A.Y.Grosberg, S.K.Nechaev “*Polymer Topology*,” Advances in Polymer Science v. **106**, p. 1-30, 1993.
94. A.Y.Grosberg, E.E.Dormidontova, A.R.Khokhlov “*Intramolecular Phase Separation in Heteropolymer Chain with Annealed Primary Structure*,” Vysokomolekulyarniye Soedyneniya, v. **34A**, n. 10, p. 126-134, 1992.
93. A.Y.Grosberg “*Processes in Organized Systems: an Overview*,” Vysokomolekulyarniye Soedyneniya, v. **34A**, n. 10, p. 174-181, 1992.
92. E.E.Dormidontova, A.Y.Grosberg, A.R.Khokhlov “*Intramolecular Phase Separation in Heteropolymer Chain with Annealed Primary Structure*,” Die Makromolekulare Chemie, Theory and Simulations v. **1**, n. 1, p. 375-385, 1992.
91. A.Y.Grosberg, S.K.Nechaev “*Averaged Kauffman Invariant and Quasi-Knot Concept for Linear Polymers*,” Europhysics Letters v. **20**, n. 7, p. 613-619, 1992.
90. A.Y.Grosberg, S.K.Nechaev “*Algebraic Invariants of Knots and Disordered Potts Model*,” Journal of Physics A: Math. and Gen., v. **25**, p.4659-4672, 1992.
89. A.Y.Grosberg, D.V.Kuznetsov “*Phase Separation of Polymer Solutions and Interactions of Globules*,” Le Journal de Physique II France, v. **2**, n. 6, p. 1327-1339, 1992.
88. I.S.Gabashvili, A.Y.Grosberg “*Dynamics of Double Stranded DNA Reptation from Bacteriophage*,” Journal of Biomolecular Structure and Dynamics, v. **9**, n. 5, p. 911-920, 1992.
87. A.Y.Grosberg, D.V.Kuznetsov “*Quantitative Theory of the Globule-to-Coil Transition. 4. Comparison of Theoretical Results with Experimental Data*,” Macromolecules, v. **25**, n. 7, p. 1996-2003, 1992.
86. A.Y.Grosberg, D.V.Kuznetsov “*Quantitative Theory of the Globule-to-Coil Transition. 3. Globule-Globule Interaction and Polymer Solution Binodal and Spinodal Curves in the Globular Range*,” Macromolecules, v. **25**, n. 7, p. 1991-1995, 1992.
85. A.Y.Grosberg, D.V.Kuznetsov “*Quantitative Theory of the Globule-to-Coil Transition. 2. Density-Density Correlation in a Globule and the Hydrodynamic Radius of a Macromolecule*,” Macromolecules, v. **25**, n. 7, p. 1980-1990, 1992.
84. A.Y.Grosberg, D.V.Kuznetsov “*Quantitative Theory of the Globule-to-Coil Transition. 1. Link Density Distribution in a Globule and its Radius of Gyration*,” Macromolecules, v. **25**, n. 7, p. 1970-1979, 1992.

83. L.A.Blumenfeld, A.Y.Grosberg, A.N.Tikhonov “*Fluctuations and Mass Action Law Breakdown in Statistical Thermodynamics of Small Systems,*” Journal of Chemical Physics, v. **95**, n. 10, p. 7541-7547, 1991.
82. I.S.Gabashvili, A.Y.Grosberg “*DNA Reptation from Bacteriophage,*” Biofizika, v. **36**, n. 5, p. 788-793, 1991.
81. I.S.Gabashvili, A.Y.Grosberg, D.V.Kuznetsov, G.M.Mrevlishvili “*Theoretical Model of DNA Packaging in the Phage Head,*” Biofizika, v. **36**, n. 5, p. 780-787, 1991.
80. A.Y.Grosberg, S.K.Nechaev “*Topological Constraints in Polymer Network Strong Collapse,*” Macromolecules, v. **24**, n. 10, p. 2789-2793, 1991.
79. A.Y.Grosberg, D.V.Pachomov “*The Structure of the Nematic-Isotropic Interface in Polymer Systems,*” Liquid Crystals, v. **10**, n. 4, p. 539-553, 1991.
78. A.Y.Grosberg “*Ideas of Polymer Physics in the Modern Development of the Theory of Evolution,*” in: “Fundamental Problems of Modern Polymer Science,” A.M.Elyashevich, Ed., Leningrad, 1990, part 2, p. 57-59.
77. A.Y.Grosberg “*Model of Community of Neural Networks Mutually Learning from Each Other,*” Biofizika, 1990, v. **35**, n. 6, p. 981-984, 1990.
English Translation: Biofizika (Moscow), v. **35**, n. 6, p. 1021-1025, 1990.
76. A.Y.Grosberg “*On the Statistical Physics of Disordered Heteropolymers and its Biological Applications,*” Journal of Nonlinear Biology, v. **1**, n. 1, p. 37-50, 1990.
75. A.Y.Grosberg, D.V.Pakhomov “*On the Structure of Intermediate Slit Between Nematic and Isotropic Phases in the System of Macromolecules,*” Crystallography, v. **34**, n. 16, p. 1534-1540, 1989.
74. A.Y.Grosberg, D.V.Pakhomov “*The Structure of the Nematic-Isotropic Interface in Solution of Persistent Macromolecules,*” Proceedings of the Academy of Sciences of the USSR, v. **308**, n. 1, p. 92-95, 1989;
English Translation: Soviet Physics Doklady, v. **34**, n. 9, p. 811-813, 1989.
73. A.Y.Grosberg, A.R.Khokhlov “*Physics in the World of Polymers,*” Moscow, Nauka, 1989, 208 p.
72. A.Y.Grosberg, A.R.Khokhlov “*Statistical Physics of Macromolecules,*” Moscow, Nauka, 1989, 370 p.
71. A.Y.Grosberg, D.V.Kuznetsov, S.K.Nechaev “*Static and Dynamic Structures of Polymers and their Possible Applications in Biocybernetics,*” Studia Biophysica, v. **132**, n. 1-2, p. 25-34, 1989.
70. A.Y.Grosberg, S.K.Nechaev, E.I.Shakhnovich “*The Role of Topological Constrains in the Kinetics of Collapse of Macromolecule,*” Le Journal de Physique (France), v. **49**, n. 11, p. 2095-2100, 1988.
69. A.Y.Grosberg, S.K.Nechaev, E.I.Shakhnovich “*Role of Topological Restrictions in the Kinetics of Homopolymer Collapse and Self-Organization of Biopolymers,*” Biofizika, v. **33**, n. 2, p. 247-253, 1988.
English Translation: Biofizika (Moscow), v. **23**, n. 2, p. 265-272, 1988.
68. A.Y.Grosberg, E.I.Shakhnovich “*Dynamical RG-Method in the Theory of Biopolymers*” in: “RG-86,” D.V.Shirkov, Ed., Interscience, 1988, 11 p.

67. D.V.Kuznetsov, T.M.Birshtein, A.Y.Grosberg “*Quantitative Estimation of Fluctuation of Gyration Radius of Macromolecule in the Coil-Globule Transition Region,*” *Vysokomoleculyarniye Soedyneniya*, v. **29B**, n. 12, p. 951-956, 1987.
66. A.Y.Grosberg, E.I.Shakhnovich “*Volume Interactions in Statistical Physics of Biopolymers,*” *Biofizika*, v. **32**, n. 6, p. 838-841, 1987.
65. A.Y.Grosberg, E.M.Kaganova “*Model for the Globule-Coil Transition in a Heteropolymer with Random Primary Structure,*” *Proceedings of the Academy of Sciences of the USSR*, v. **294**, n. 4, p. 838-841, 1987;
English Translation: *Soviet Physics Doklady*, v. **36**, n. 6, p. 474-476, 1987.
64. A.Y.Grosberg, A.R.Khokhlov “*Physics of Phase Transitions in Solutions of Macromolecules,*” *Soviet Scientific Reviews, Physics Reviews, Harvard Academic Publishers*, v. **8**, p. 5-156, 1987.
63. A.Y.Grosberg, A.N.Panchenko “*On the Possibility of Existence of Large Polymer Globule with Small Nucleus,*” *Vysokomoleculyarniye Soedyneniya*, v. **29B**, n. 5, p. 327-330, 1987.
62. A.Y.Grosberg, S.K.Nechaev, E.I.Shakhnovich “*On the Role of Topological Constrains in Kinetics of Collapse of Linear Polymer Chain,*” *Biofizika*, v. **32**, n. 1, p. 172, 1987.
English Translation: *Biofizika (Moscow)*, v. **32**, n. 1, p. 186-187, 1987.
61. A.Y.Grosberg, E.I.Shakhnovich “*Dynamical Renormalization Group Method in the Statistical Theory of Biopolymers,*” in: “*Renormalization Group - 86,*” D.V.Shirkov, Ed., Dubna, 1986, 12 p.
60. A.Y.Grosberg, E.I.Shakhnovich “*Theory of Heteropolymers with Frozen Disordered Primary Structure: Properties of the Globular State, Transitions of the Coil-Globule Type, Possible Biophysical Applications,*” *Biofizika*, v. **31**, n. 6, p. 1045-1057, 1986.
English Translation: *Biofizika (Moscow)*, v. **31**, n. 6, p. 1139-1154, 1986.
59. A.Y.Grosberg, E.I.Shakhnovich “*Theory of Phase Transitions of the Coil-Globule Type in a Heteropolymer Chain with Disordered Sequence of Links,*” *Journal of Experimental and Theoretical Physics (JETP)*, v. **91**, n. 6(12), p. 2159-2170, 1986;
English Translation: *Sov. Phys.-JETP*, v. **64**, n. 6, p. 1284-1290, 1986.
58. A.Y.Grosberg, E.I.Shakhnovich “*An Investigation of the Configurational Statistics of a Polymer Chain in an External Field by the Dynamical Renormalization Group Method,*” *Journal of Experimental and Theoretical Physics (JETP)*, v. **91**, n. 3(9), p. 837-850, 1986;
English Translation: *Sov. Phys.-JETP*, v. **64**, n. 3, p. 493-501, 1986.
57. A.Y.Grosberg, A.V.Zhestkov, D.V.Kuznetsov “*Quantitative Theory and Interpretation of Experimental Data on the Coil-Globule Transition in Persistent Macromolecule,*” *Vysokomoleculyarniye Soedyneniya*, v. **28A**, n. 7, p. 1397-1403, 1986.
56. A.Y.Grosberg, A.R.Khokhlov “*Phase Transitions in Polymer and Biopolymer Systems,*” *Uspekhi Physicheskikh Nauk*, v. **149**, n. 4, p. 723-726, 1986.
55. A.Y.Grosberg, A.V.Zhestkov “*On the Compact Form of Linear Duplex DNA: Globular States of the Uniform Elastic (Persistent) Macromolecule,*” *Journal of Biomolecular Structure and Dynamics*, v. **3**, n. 3, p. 859-872, 1986.

54. A.Y.Grosberg, A.V.Zhestkov "Dependence of Elastic Coefficients of Nematic Polymer Liquid Crystal on Rigidity of Macromolecule," *Vysokomolekulyarniye Soedyneniya*, v. **28A**, n. 1, p. 86-91, 1986.
53. A.Y.Grosberg, A.V.Zhestkov "On the Toroidal Condensed State of Closed Circular DNA," *Journal of Biomolecular Structure and Dynamics*, v. **3**, n. 2, p. 515-520, 1985.
52. A.Y.Grosberg, A.V.Zhestkov "Toroidal Globular State of DNA: Persistent Macromolecule in a Low-Molecular Solvent," *Biofizika*, v. **30**, n. 4, p. 698-699, 1985.
51. A.Y.Grosberg, A.V.Zhestkov "On the Theory of Toroidal Compact Form of DNA in a Polymer Solution," *Biofizika*, v. **30**, n. 2, p. 233-238, 1985.
50. A.Y.Grosberg, A.R.Khokhlov "On the Unsolved Problems in Statistical Physics of Macromolecules," NCBI, Pouschino, 1985, 50 p.
49. A.Y.Grosberg, A.V.Zhestkov "Torus-Like Globular State of Circular DNA," *Molekulyarnaya Biologiya*, v. **19**, n. 4, p. 1153-1156, 1985.
48. A.Y.Grosberg "On the Theory of Condensed States of Heteropolymers", *Journal of Statistical Physics*, v. **38**, n. 1/2, p. 149-160, 1985.
47. A.Y.Grosberg, D.V.Kuznetsov "Comparison of Theory of Coil-Globule Transition with Experiment," *Vysokomolekulyarniye Soedyneniya*, v. **26B**, n. 9, p. 706-711, 1984.
46. A.Y.Grosberg, D.V.Kuznetsov "Numerical Solution of Equations of Theory of Polymer Globules," *Vysokomolekulyarniye Soedyneniya*, v. **26B**, n. 9, p. 701-706, 1984.
45. A.Y.Grosberg, A.R.Khokhlov "Coil-Globule Transitions in Polymer Systems," in: "Problems in Solid-State Physics," A.M.Prokhorov, Ed., Moscow, Mir, 1984, p. 330-353.
44. A.Y.Grosberg "Collapse and Intramolecular Phase Separation in the Polymer in which Each Link May Be in Two States," *Biofizika*, v. **29**, n. 4, p. 569-573, 1984.
English Translation: *Biofizika* (Moscow), v. **29**, n. 4, p. 621-626, 1984.
43. A.Y.Grosberg, A.R.Khokhlov "Physics of Chain Molecules," Moscow, Znaniye, 1984, 64 p.
42. A.Y.Grosberg, A.V.Zhestkov "On the Theory of Packing of Double-Helix DNA: Globular State of Uniform Elastic Macromolecule in the Small Volume Cavity," *Biofizika*, v. **29**, n. 2, p. 202-206, 1984.
English Translation: *Biofizika* (Moscow), v. **29**, n. 2, p. 221-225, 1984.
41. A.Y.Grosberg, E.M.Kaganova, S.A.Molchanov "Simple Solvable Model of Heteropolymer Globule," *Biofizika*, v. **29**, n. 1, p. 30-34, 1984.
English Translation: *Biofizika* (Moscow), v. **29**, n. 1, p. 27-32, 1984.
40. A.Y.Grosberg, E.M.Kaganova "To the Theory of Coil-Globule Transition in Comb-Like Macromolecules," *Vysokomolekulyarniye Soedyneniya*, v. **25A**, n. 6, p. 1185-1190, 1983.
39. A.Y.Grosberg "Some Problems of the Theory of Heteropolymers," Pouschino, NCBI, 1983, 32 p.
38. A.Y.Grosberg "Structure and Phase Transitions in Condensed Polymers and Biopolymers," Thesis, Moscow State University, 1982.

37. A.Y.Grosberg, I.Ya.Erukhimovich, E.I.Shakhnovich "On the Theory of ψ -Condensation," Biopolymers, v. **21**, n. 12, p.2413-2432, 1982.
36. A.Y.Grosberg, P.G.Khalatur, A.R.Khokhlov "Polymeric Coils with Excluded Volume in Dilute Solution: the Invalidity of the Model of Impenetrable Spheres and the Influence of Excluded Volume on the Rates of Diffusion-Controlled Intermacromolecular Reactions," Die Makromolekulare Chemie, Rapid Communications, v. **3**, n. 10, p. 709-713, 1982.
35. A.Y.Grosberg "Notes on the Theory of Adsorption of a Single Macromolecule," Vysokomolekulyarniye Soedyneniya, v. **24A**, n. 6, p. 1194-1198, 1982.
34. A.Y.Grosberg "Theory of Adsorption of Simple Model of Comb-Like Macromolecule," Vysokomolekulyarniye Soedyneniya, v. **24B**, n. 2, p. 146-150, 1982.
33. A.Y.Grosberg, I.Ya.Erukhimovich, E.I.Shakhnovich "On the Theory of DNA Contraction in Polymer Solution," Biofizika, v. **26**, n. 3, p. 415-420, 1981.
32. A.Y.Grosberg, I.Ya.Erukhimovich, E.I.Shakhnovich "On DNA Contraction in Dilute Polymer Solution," Biofizika, v. **26**, n. 3, p. 415-420, 1981.
31. I.M.Lifshitz, A.Y.Grosberg, A.R.Khokhlov "Coil-Globule Type Phase Transitions in Polymer Systems," Pouschino, NCBI, 1981; reprinted in: I.M.Lifshitz "Selected Scientific Papers: Electron Theory of Metals. Polymers and Biopolymers.," Moscow, Nauka Publishers, 1994.
30. A.Y.Grosberg, A.R.Khokhlov "Statistical Theory of Polymeric Lyotropic Liquid Crystals," Advances in Polymer Science, v. **41**, p. 53-97, 1981.
29. A.Y.Grosberg "Theory of the Cholesteric Mesophase in a solution of Chiral Macromolecules", Proceedings of the Academy of Sciences of the USSR, v. **253**, n. 6, p. 1370-1372, 1980; English translation: Sov. Phys. Doklady, v. **25**, n. 8, p. 638-639, 1980.
28. A.Y.Grosberg, I.Ya.Erukhimovich, A.R.Khokhlov "On the Direct Renormalization Group Procedure for the Polymer Chain," Physics Letters, v. **78A**, n. 2, p., 1980.
27. A.Y.Grosberg, I.Ya.Erukhimovich, E.I.Shakhnovich "On the Theory of Compact Form of DNA in PEO Solution," in: "Conformational Transformations of Biopolymers in Solutions," E.L.Andronikashvili, Ed., Tbilissi, Metsniereba, 1975, p. 21-25.
26. A.Y.Grosberg "Phase Diagram of Polymeric Macromolecule Containing Mesogenic Groups," Vysokomolekulyarniye Soedyneniya, v. **22A**, n. 1, p. 100-104, 1980.
25. A.Y.Grosberg "Intramolecular Phase Transitions in Polymeric Chain with Rigid-Rod Side Branches," Vysokomolekulyarniye Soedyneniya, v. **22A**, n. 1, p. 96-99, 1980.
24. A.Y.Grosberg "On Orientationally Ordered Liquid Crystalline State of Polymeric Globule," Vysokomolekulyarniye Soedyneniya, v. **22A**, n. 1, p. 90-95, 1980.
23. A.Y.Grosberg "Macroscopic Phases of Persistent Polymer," in: "Kinetics of Physico-Chemical Processes," V.L.Talrose, Ed., Moscow, Nauka, 1980, p. 59-63.
22. A.Y.Grosberg "On Some Manifestations of Flicker-Noise in Biological Systems and its Possible Mathematical Interpretation," in: "Kinetics of Physico-Chemical Processes," V.L.Talrose, Ed., Moscow, Nauka, 1980, p. 53-58.

21. A.Y.Grosberg, I.Ya.Erukhimovich, A.R.Khokhlov "A Procedure for Direct Calculation of Critical Indices for a Polymer Chain," Proceedings of the Academy of Sciences of the USSR, v. **249**, n. 2, p. 346-348, 1979;
English Translation: v. **24**, n. 11, p.922-924, 1979.
20. I.M.Lifshitz, A.Y.Grosberg, A.R.Khokhlov "Volume Interactions in Statistical Physics of a Polymer Macromolecule," Uspekhi Fizicheskikh Nauk, v. **127**, n. 3, p. 353-389, 1979; reprinted in: I.M.Lifshitz "Selected Scientific Papers: Electron Theory of Metals. Polymers and Biopolymers.," Moscow, Nauka Publishers, 1994.
English Translation: Sov. Phys. Usp., v. **22**, n. 3, p. 123-142, 1979.
19. A.Y.Grosberg "On Some Possible Conformational States of Homogeneous Elastic Polymer Chain," Biofizika, v. **24**, n. 1, p. 32-37, 1979.
English Translation: Biofizika (Moscow), v. **24**, n. 1, p. 30-36, 1979.
18. A.Y.Grosberg "Simple Interpolation Formula for Energy of Van-der-Vaals Interaction Between Parallel Cylinders," Biofizika, v. **23**, n. 5, p. 913-914, 1978.
17. I.M.Lifshitz, A.Y.Grosberg, A.R.Khokhlov "Some Problems of the Statistical Physics of Polymer Chains with Volume Interactions," Reviews of Modern Physics, v. **50**, n. 3, p. 683-714, 1978; reprinted in: I.M.Lifshitz "Selected Scientific Papers: Electron Theory of Metals. Polymers and Biopolymers.," Moscow, Nauka Publishers, 1994.
16. A.Y.Grosberg "Theoretical Model of Liquid-Crystalline Organization of Polymeric Globule," in: "Physico-Chemical Processes in Condensed Phase," V.L.Talrose, Ed., Moscow, Nauka, 1977, p. 30-34.
15. A.Y.Grosberg "On the Liquid-Crystalline Organization of Globule for One Model of Polymeric Chain," in: "Conformational Transformations of Biopolymers in Solutions," E.L.Andronikashvilli, Ed., Tbilissi, Metsniereba, 1977, p. 40-42.
14. A.Y.Grosberg "On the Adsorption of a Homopolymer Chain on Homogeneous Surface," Biofizika, v. **22**, n. 3, p. 538-539, 1977.
13. I.M.Lifshitz, A.Y.Grosberg, A.R.Khokhlov "Structure of Polymeric Globule Formed by Saturating Bonds," Journal of Experimental and Theoretical Physics (JETP), v. **71**, n. 4(10), p. 1634-1643, 1976; reprinted in: I.M.Lifshitz "Selected Scientific Papers: Electron Theory of Metals. Polymers and Biopolymers.," Moscow, Nauka Publishers, 1994;
English Translation: Sov. Phys. JETP, v. **44**, n. 6, p. 855-860, 1976.
12. A.Y.Grosberg "Globule-Substrate Complex: Some Effects Resulting from the Polymeric Nature of the Globule," Biofizika, v. **21**, n. 5, p. 820-824, 1976.
11. I.M.Lifshitz, A.Y.Grosberg, A.R.Khokhlov "Polymer Chain with Excluded Volume in an External Field," Biofizika, v. **21**, n. 5, p. 780-787, 1976.
10. A.Y.Grosberg, B.D.Liberol "About the Nature of Elasticity of a Polymer Globule," Biofizika, v. **21**, n. 4, p. 610-614, 1976.
9. A.Y.Grosberg "Theoretical Model of the Adsorption of Homopolymer Chain on the Homogeneous Surface," Biofizika, v. **21**, n. 4, p. 603-609, 1976.

8. A.Y.Grosberg “*Some Problems of the Statistical Physics of Polymer Globules*,” Ph.D. Thesis, P.L.Kapitsa Institute for Physical Problems USSR Academy of Sciences, Moscow, 1975.
7. A.Y.Grosberg “*Phase Rule for Condensed Heteropolymer System*,” in: “Conformational Transformations of Biopolymers in Solutions,” E.L.Andronikashvili, Ed., Tbilissi, Metsniereba, 1975, p. 121-125.
6. A.Y.Grosberg “*On the Possible Types of Phase Diagrams for Polymer Chain with Hydrophobic Monomers*,” in: “Conformational Transformations of Biopolymers in Solutions,” E.L.Andronikashvili, Ed., Tbilissi, Metsniereba, 1975, p. 96-99.
5. M.I.Tribelskii, A.Y.Grosberg “*Laser Heating of a Transparent Medium Containing Random Absorbing Inhomogeneities*,” Journal of Experimental and Theoretical Physics (JETP), v. **68**, n. 3, p. 1060-1065, 1975;
English Translation: Sov. Phys.-JETP, v. **41**, n. 3, p. 524-526, 1976.
4. I.M.Lifshitz, A.Y.Grosberg “*On the Solvent Influence on Macroscopic State of Polymeric Globule*,” Proceedings of the Academy of Sciences of the USSR, v. **220**, n. 2, p. 468-471, 1975; reprinted in: I.M.Lifshitz “*Selected Scientific Papers: Electron Theory of Metals. Polymers and Biopolymers.*,” Moscow, Nauka Publishers, 1994.
3. I.M.Lifshitz, A.Y.Grosberg “*Phase Diagram of a Polymer Globule and the Problem of Self-Organization of its Spatial Structure*,” Uspekhi Fizicheskikh Nauk, v. **113**, n. 2, p., 1974.
2. I.M.Lifshitz, A.Y.Grosberg “*Phase Diagram of a Polymer Globule and the Problem of Self-Organization of its Spatial Structure*,” Journal of Experimental and Theoretical Physics (JETP), v. **65**, n.6(12), p. 2399-2420, 1973; reprinted in: I.M.Lifshitz “*Selected Scientific Papers: Electron Theory of Metals. Polymers and Biopolymers.*,” Moscow, Nauka Publishers, 1994;
English Translation: Sov. Phys.-JETP, v. **38**, n. 6, p. 1198-1208, 1974.
1. A.Y.Grosberg “*On the Pressure Distribution over the Surface of Non-Spherical Globule*,” Proceedings of Moscow State University, Physics Series, n. 1, p. 14-18, 1972.