Списък на цитиранията за участие в конкурса

описание на цитиранията	брой точки
J. Genova, V. Vitkova, L. Aladgem, P. Méléard, M. D. Mitov, Using Stroboscopic Illumination to Improve the Precision of the Bending Modulus Measured by the Analysis of Thermally Induced Shape Fluctuations of Giant Vesicles, Bulg. J. Phys. 31(1-2) (2004) 68–75.	
H. Bouvrais, Bending Rigidities of Lipid Bilayers. Their Determination and Main Inputs in Biophysical Studies., Advances in Planar Lipid Bilayers and Liposomes 15, Academic Press, London (2012) 1–75.	2
D. Drabik, M. Przybyło, G. Chodaczek, A. Iglič, M. Langner, The modified fluorescence based vesicle fluctuation spectroscopy technique for determination of lipid bilayer bending properties, Biochimica et Biophysica Acta 1858 (2016) 244–252.	2
V. Vitkova, J. Genova, and I. Bivas, Permeability and hidden area of lipid bilayers, Eur. Biophys. J. 33(8) (2004) 706–714.	
M. Karimi, J. Steinkühler, D. Roy, R. Dasgupta, R. Lipowsky, R. Dimova, Asymmetric ionic conditions generate large membrane curvatures, Nano Letters 18(12) (2018) DOI:10.1021/acs.nanolett.8b03584.	2
The Giant Vesicle Book, Edited By Rumiana Dimova, Carlos M. Marques, 1st Edition, First Published 2019, Book Published 12 July 2019, Pub. Location Boca Raton, Imprint CRC Press (2019) Pages 676, eBook ISBN 9781315152516 DOI:10.1201/9781315152516.	2
S. K. Saha, S. U. Alam Shibly, M. Yamazaki, Membrane Tension in Negatively Charged Lipid Bilayers in a Buffer under Osmotic Pressure, Journal of Physical Chemistry B124(27) (2020) 5588–5599. DOI: 10.1021/acs.jpcb.0c03681.	2
T. Bhatia, T. Robinson, R. Dimova, Membrane permeability to water measured by microfluidic trapping of giant vesicles, Soft Matter 16(31) (2020) 7359–7369. DOI: 10.1039/D0SM00155D.	2
C. Has, Recent advancements to measure membrane mechanical and transport properties, Journal of Liposome Research, (2020) DOI: 10.1080/08982104.2020.1850776.	2
V. Vitkova, J. Genova, O. Finogenova, M.D. Mitov, Y. Ermakov and I. Bivas, Surface Charge Effect on the Bending Elasticity of Lipid Bilayers, C. R. Acad. Bulg. Sci. 57(11) (2004) 25–30.	
C. I. Cámara, Fl. Lurgo, M. L. Fanani, N. Wilke, Mechanical Stability of Lipid Membranes Decorated with Dextran Sulfate, ACS Omega 3(9) (2018) 11673–11683. DOI: 10.1021/acsomega.8b01537	2
H. A. Faizi, J. Steinkühler, S. L. Frey, R. Dimova, P. M. Vlahovska, Lipid Charge Increases the Bending Rigidity of Bilayer Membranes, Biophysical Journal 116(3) (2019) 507a. DOI: 10.1016/j.bpj.2018.11.2737.	2
M. A. Crosio, M. A. Via, C. I. Cámara, A. Mangiarotti, M. G. Del Pópolo, N. Wilke, Interaction of a polyarginine peptide with membranes of different mechanical properties, Biomolecules 9(10) (2020) 625 DOI: 10.3390/biom9100625.	2
H. A. Faizi, S. L. Frey, J. Steinkühler, R. Dimova, P. M. Vlahovska, Bending rigidity of charged lipidbilayer membranes, Soft Matter 15 (2019) 6006–6013 DOI: 10.1039/c9sm00772e.	2
M. A. S. Karal, M. Ahmed, V. Levadny, M. Belaya, Md. Kabir Ahamed, M. Rahman, and Md. M. Shakil, Electrostatic interaction effects on the size distribution of self-assembled giant unilamellar vesicles, Phys. Rev. E 101 (2020) 012404 DOI: 10.1103/PhysRevE.101.012404.	2
V. Galassi, N. Wilke, On the Coupling between Mechanical Properties and Electrostatics in Biological Membranes, Membranes 11(7) (2021) 478 DOI: 10.3390/membranes1107047	2

J. Doskocz, P. Dałek, M. Przybyło, B. Trzebicka, A. Foryś, A. Kobyliukh, A. Iglič, M, Langner, The Elucidation of the Molecular Mechanism of the Extrusion Process, Materials 14(15) (2021) 4278 DOI: 10.3390/ma14154278.	2
J. Genova, V. Vitkova, L. Aladjem, P. Méléard, and M.D. Mitov, Stroboscopic Illumination Gives New Opportunities and Improves the Precision of Bending Elastic Modulus Measurements, J. Optoelectron. Adv. Mater. 7(1) (2005) 257–260.	
H. Bouvrais, Bending Rigidities of Lipid Bilayers. Their Determination and Main Inputs in Biophysical Studies., Advances in Planar Lipid Bilayers and Liposomes 15, Academic Press, London (2012) 1–75.	2
J. W. Kuhlmann, I. P. Mey, C. Steinem, Modulating the lateral tension of solvent-free porespanning membranes., Langmuir 30 (2014) 8186–8192.	2
D. Drabik, M. Przybyło, G. Chodaczek, A. Iglič, M. Langner, The modified fluorescence based vesicle fluctuation spectroscopy technique for determination of lipid bilayer bending properties., Biochimica et Biophysica Acta 1858 (2016) 244–2522.	2
V. Vitkova, J. Genova, M.D. Mitov and I. Bivas, Sugars in the aqueous phase change the mechanical properties of lipid mono- and bilayers, Mol. Cryst. Liq. Cryst. 449 (2006) 95–106.	
P. Shchelokovskyy, S. Tristram-Nagle, and R. Dimova, Effect of the HIV-1 fusion peptide on the mechanical properties and leaflet coupling of lipid bilayers, New J. Phys. 13 (2011) 25004.	2
O. Mertins and R. Dimova, Binding of Chitosan to Phospholipid Vesicles Studied with Isothermal Titration Calorimetry, Langmuir 27(9) (2011) 5506–5515.	2
P. Peterlin, V. Arrigler, E. Haleva, and H. Diamant, Law of corresponding states for osmotic swelling of vesicles , Soft Matter 8 (2012) 2185–2193.	2
J. F. Nagle, Introductory lecture: Basic quantities in model biomembranes, Faraday Discussions, 161 (2013) 11–29.	2
P. Méléard and T. Pott, Overview of a quest for bending elasticity measurement, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London, (2013) 55–76.	2
M. E. Solmaz, S. Sankhagowit, R. Biswas, C. A. Mejia, M. L. Povinelli, N. Malmstadt, Optical stretching as a tool to investigate the mechanical properties of lipid bilayers, RSC Advances 3 (2013) 16632–16638.	2
R. Dimova, Recent developments in the field of bending rigidity measurements on membranes, Advances in Colloid and Interface Science 208, Academic Press, London (2014) 225–234.	2
J. F. Nagle, M. S. Jablin, S. Tristram-Nagle, K. Akabori, What are the true values of the bending modulus of simple lipid bilayers?, Chemistry and Physics of Lipids 186 (2015) 3–10.	2
D. Bochicchio and L. Monticelli, The membrane bending modulus in experiments and simulations: a puzzling picture, Advances in Biomembranes and Lipid Self-Assembly 23, (2016) 117–143.	2
J. F. Nagle, M. S. Jablin, S. Tristram-Nagle, Sugar does not affect the bending and tilt moduli of simple lipid bilayers, Chemistry and Physics of Lipids 196 (2016) 76–80.	2
Y. Jang, W. -S. Jang, C. Gao, T. S. Shim, J. C. Crocker, D. A. Hammer, D. Lee,Tuning the Mechanical Properties of Recombinant Protein-Stabilized Gas Bubbles Using Triblock Copolymers, ACS Macro Letters 5(3) (2016) 371–376.	2
J. B. Dahl, V. Narsimhan, B. Gouveia, S. Kumar, E. S. G. Shaqfeh, S. J. Muller, Experimental observation of the asymmetric instability of intermediate-reduced-volume vesicles in extensional flow, Soft Matter 12(16) (2016) 3787–3796.	2
J. F. Nagle, Experimentally Determined Tilt and Bending Moduli of Single-Component Lipid Bilayers, Chem. Phys. Lipids 205 (2017) 18–24.	2
S. Akimov, P. Volynsky, T. Galimzyanov, P. Kuzmin, K. Pavlov, O. Batischev, Pore formationin lipid membrane I: Continuous reversible trajectory from intact bilayer through hydrophobic defect to transversal pore, Scientific Report 7 (2017) 12152.	2

M. Doktorova, D. Harries, G. Khelashvili, Determination of bending rigidity and tilt modulus of lipid membranes from real-space fluctuation analysis of molecular dynamics simulations, Phys. Chem. Chem. Phys. 19 (2017) 16806–16818.	2
C. Prévost, F.-C. Tsai, P. Bassereau, M. Simunovic, Pulling Membrane Nanotubes from Giant Unilamellar Vesicles, Journal of Visualized Experiments 130 (2017) e56086, doi:10.3791/56086.	2
M. I. Morandi, M. Sommer, M. Kluzek, F. Thalmann, A. P. Schroder, C. M. Marques, DPPC Bilayers in Solutions of High Sucrose Content, Biophysical Journal 114 (2018) 2165–2173.	2
S. R. Al-Ayoubi, P. K. F. Schinkel, M. Berghaus, M. Herzoga, R. Winter, Combined effects of osmotic and hydrostatic pressure on multilamellar lipid membranes in the presence of PEG and trehalose , Soft Matter 14 (2018) 87925–8802.	2
Y. Liu, R. Lipowsky, R. Dimova, Giant Vesicles Encapsulating Aqueous Two-Phase Systems:From Phase Diagrams to Membrane Shape Transformations, Frontiers in Chemistry 7 (2019) 213. DOI: 10.3389/fchem.2019.00213	2
H. A. Faizi, J. Steinkühler, S. L. Frey, R. Dimova, P. M. Vlahovska, Lipid Charge Increases the Bending Rigidity of Bilayer Membranes, Biophysical Journal 116(3) (2019) 507a. DOI: 10.1016/j.bpj.2018.11.2737	2
A. Moga, N. Yandrapalli, R. Dimova, T. Robinson, Optimization of the Inverted Emulsion Method for High-Yield Production of Biomimetic Giant Unilamellar Vesicles, ChemBioChem20(20) (2019) 2674–2682. DOI: 10.1002/cbic.201900529.	2
H. A. Faizi, S. L. Frey, J. Steinkühler, R. Dimova, P. M. Vlahovska, Bending rigidity of charged lipidbilayer membranes, Soft Matter 15 (2019) 6006–6013 DOI: 10.1039/c9sm00772e.	2
C. Has, Recent advancements to measure membrane mechanical and transport properties, Journal of Liposome Research, (2020) DOI: 10.1080/08982104.2020.1850776.	2
J. Genova, A. Zheliaskova, and M.D. Mitov, The influence of sucrose on the elasticity of SOPC lipid membrane studied by the analysis of thermally induced shape fluctuations, Coll. Surf. A 282-283 **(2006) 420–422.**	
I. Sabotin, A. M. Lebar, D. Miklavčič, P. Kramar, Measurement Protocol for Planar Lipid Bilayer Viscoelastic Properties IEEE TRANSACTIONS ON DIELECTRICS AND ELECTRICAL INSULATION, 16(5) (2009) 1236–1242.	2
P. Kramar, D. Miklavčič, M. Kotulska, A.M. Lebar, Voltage- and Current-clamp methods for determination of planar lipid bilayer properties, Advances in Planar Lipid Bilayers and Liposomes 11C, Academic Press, London (2010) 29–69.	2
O. Mertins and R. Dimova, Binding of Chitosan to Phospholipid Vesicles Studied with Isothermal Titration Calorimetry, Langmuir 27(9) (2011) 5506–5515.	2
P. Shchelokovskyy, S. Tristram-Nagle, and R. Dimova, Effect of the HIV-1 fusion peptide on the mechanical properties and leaflet coupling of lipid bilayers, New J. Phys. 13 (2011) 25004.	2
J. Zupanc, D. Drobne, B. Drasler, J. Valant, A. Iglič, V. Kralj-Iglič, D. Makovec, M. Rappolt, B. Sartori, K. Kogej, Experimental evidence for the interaction of C-60 fullerene with lipid vesicle membranes, Carbon 50(3) (2012) 1170–1178.	2
P. Méléard and T. Pott, Overview of a quest for bending elasticity measurement, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London, (2013) 55–76.	2
M. E. Solmaz, S. Sankhagowit, R. Biswas, C.A. Mejia, M. L. Povinelli, N. Malmstadt, Optical stretching as a tool to investigate the mechanical properties of lipid bilayers, RSC Advances 3 (2013) 16632–16638.	2
R. Dimova, Recent developments in the field of bending rigidity measurements on membranes, Advances in Colloid and Interface Science 208, Academic Press, London (2014) 225–234.	2
S. Penic, L. Mesarec, M. Fosnaric, V. Kralj Iglic, S. Kralj, W. Gozdz and A. Iglic, Modeling of closed membrane shapes, Journal of Physics: Conference Series 558, (2014) 012010.	2

J. F. Nagle, M. S. Jablin, S. Tristram-Nagle, K. Akabori, What are the true values of the bending modulus of simple lipid bilayers?, Chemistry and Physics of Lipids 186 (2015) 3–10.	**2**
U. Delabre, K. Feld, E. Crespo, G. Whyte, C. Sykes, U. Seifert, J. Guck, Deformation of phospholipid vesicles in an optical stretcher, Soft Matter 11 (2015) 6075–6088.	**2**
D. Drabik, M. Przybyło, G. Chodaczek, A. Iglič, M. Langner, The modified fluorescence based vesicle fluctuation spectroscopy technique for determination of lipid bilayer bending properties, Biochimica et Biophysica Acta 1858 (2016) 244–252.	**2**
S. U. Alam Shibly, C. Ghatak, M. A. Sayem Karal, M. Moniruzzaman, M. Yamazaki, Experimental Estimation of Membrane Tension Induced by Osmotic Pressure, Biophysical Journal 111(10) (2016) 2190–2201.	**2**
M. I. Morandi, M. Sommer, M. Kluzek, F. Thalmann, A. P. Schroder, C. M. Marques, DPPC Bilayers in Solutions of High Sucrose Content, Biophysical Journal 114 (2018) 2165–2173.	**2**
S. L. Gawali, M. Zhang, S. Kumar, D. Ray, M. Basu, V. K. Aswal, D. Danino, P. A. Hassan, Discerning the Structure Factor of Charged Micelles in Water and Supercooled Solvent by Contrast Variation X-ray Scattering, Langmuir 35(30) (2019) 9867–9877. DOI:10.1021/acs.langmuir.9b00912	**2**
C. Dargel, Y. Hannappel, Th. Hellweg, Heating-Induced DMPC/Glycyrrhizin Bicelle-to-Vesicle Transition: A X-Ray Contrast Variation Study, Biophys. J. 118(10) (2020) 2411–2425. DOI: 10.1016/j.bpj.2020.03.022.	**2**
J. Genova, A. Zheliaskova, and M. D. Mitov, Monosaccharides (fructose, glucose) and disaccharides (sucrose, trehalose) influence the elasticity of SOPC membranes, J. Optoelecton. Adv. Mater. 9 (2007) 427–430.	
H. D. Andersen, C. Wang, L. Arleth, G. H. Peters, and P. Westh, Reconciliation of opposing views on membrane–sugar interactions, Proc. Nat. Acad. Sci. USA 108(5) (2011) 1874–1878.	**2**
H. Bouvrais, Bending Rigidities of Lipid Bilayers. Their Determination and Main Inputs in Biophysical Studies., Advances in Planar Lipid Bilayers and Liposomes 15, Academic Press, London (2012) 1–75.	**2**
V. Vitkova, D. Mitkova, A. Stoyanova-Ivanova, N. Kozarev, I. Bivas, Bending rigidity of lipid membranes and the pH of aqueous surroundings, Comptes Rendus de L'Academie Bulgare des Sciences 65(3), (2012) 329–334.	**2**
R. Dimova, Recent developments in the field of bending rigidity measurements on membranes, Advances in Colloid and Interface Science 208, Academic Press, London (2014) 225–234.	**2**
B.-A. Brüning, S. Prévost, R. Stehle, R. Steitz, P. Falus, B. Farago, T. Hellweg, Bilayer undulation dynamics in unilamellar phospholipid vesicles: Effect of temperature, cholesterol and trehalose, Biochimica et Biophysica Acta - Biomembranes 1838 (2014) 2412–2419.	**2**
J. F. Nagle, M. S. Jablin, S. Tristram-Nagle, K. Akabori, What are the true values of the bending modulus of simple lipid bilayers?, Chemistry and Physics of Lipids 186 (2015) 3–10.	**2**
D. Drabik, M. Przybyło, G. Chodaczek, A. Iglič, M. Langner, The modified fluorescence based vesicle fluctuation spectroscopy technique for determination of lipid bilayer bending properties, Biochimica et Biophysica Acta 1858 (2016) 244–252.	**2**
S. R. Al-Ayoubi, P. K. F. Schinkel, M. Berghaus, M. Herzog, R. Winter, Combined effects of osmotic and hydrostatic pressure on multilamellar lipid membranes in the presence of PEG and trehalose, Soft Matter 14(43) (2018) 8792–8802.	**2**
S. Jeong, J. M. Cho, Y. Kwon, S. Kim, D. Y. Shin, J. HoLe, Chitosan oligosaccharide (GO2KA1) improves postprandial glycemic response in subjects with impaired glucose tolerance and impaired fasting glucose and in healthy subjects: a crossover, randomized controlled trial, Nutrition and Diabetes 9:1(31) (2019) DOI: 10.1038/s41387-019-0099-4.	**2**

M. J. Ahmed, B. H. Hameed, Hydrogenation of glucose and fructose into hexitols over heterogeneous catalysts: A review, Journal of the Chinese Institute of Chemical Engineers 96 (2019) 341–352 DOI: 10.1016/j.jtice.2018.11.028.	2
H. T. Van, T. N. Ha Bui, Y. H. Mai, M. N.t H. Nguyen, T. V. Pham, V. S. Le, V. D. Doan, L. P. T. Quoc Chemical Composition and Antibacterial Activities of Ethanol Extract of Geodorum attenuatum Griff. (Orchidaceae), Gazi University Journal of Science 1(1) (2020) DOI:10.35378/gujs.669681.	2
H. T. Van, A. N. Nguyen, T. T. N.Ho, M. Y. O. Huynh, T. Q. H. Nguyen, T. L. H. Nguyen, V.S. Le, Evaluation of DNA barcode sequence, chemical composition and antibacterial activities in Geodorum terrestre (L.) Garay newly found in Southern Vietnam, Research Journal of Biotechnology 15(11) (2020) 76–84.	2
L. Slobodianiuk, L. Budniak, S. Marchyshyn, L. Kostyshyn, O. Zakharchuk, Analysis of carbohydrates in Saponaria officinalis L. using GC/MS method, Pharmacia 68(2) (2021) 339–345.	2
J. Genova, A. Zheliaskova, and M.D. Mitov, Influence of Hydrocarbon Inclusions on the Elasticity of SOPC Membrane, C. R. Acad. Bulg. Sci. 61(7) (2008) 879–884.	
B. Demé, T. Zemb, Hydration forces between bilayers in the presence of dissolved or surfacelinked sugars, Curr. Opin. Colloid In. Science 16(6) (2011) 585–591.	2
V. Vitkova, A. G. Petrov, Lipid Bilayers and Membranes. Material Properties.,Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 89–138.	2
C. Has, Recent advancements to measure membrane mechanical and transport properties,Journal of Liposome Research (2020) DOI: 10.1080/08982104.2020.1850776.	2
J. Genova, A. Zheliaskova, V. Vitkova and M. D. Mitov, Stroboscopic Illumination Study of the Dynamics of Fluctuating Vesicle, J. Optoelectron. Adv. Mater. 11(9) (2009) 1222–1225.	
V. Šuštar, J. Zelko, P. Lopalco, S. Lobasso, A. Ota, N. Poklar Ulrih, A. Corcelli, V. Kralj-Iglič, Morphology, Biophysical Properties and Protein-Mediated Fusion of Archaeosomes, PLoS ONE 7(7) (2012): e39401. doi:10.1371/journal.pone.0039401**.**	2
J. Zupanc, D. Drobne, B. Drasler, J. Valant, A. Iglič, V. Kralj-Iglič, D. Makovec, M. Rappolt, B. Sartori, K. Kogej, Experimental evidence for the interaction of C-60 fullerene with lipid vesicle membranes, Carbon 50(3) (2012) 1170–1178.	2
M. Przybyło, J. Procek, M. Kaczyński, T. Borowik, M. Hof, M. Langner, A Multi Time-Scale Approach of the Lipid Bilayer Dynamics, Advances in Planar Lipid Bilayers and Liposomes 15 (2012) 105–137.	2
P. C. Montgomery, D. Montaner, F. Anstotz, B. Serio, Wide field nanometric materials analysis by diffraction limited far field optical nanoscopy, Journal of Physics: Conference Series 398 (1) (2012) art. no. 012001.	2
R. Štukelj, V. Šuštar, A. Mrvar-Brečko, P. Veranič, H. Hägerstrand, V. Kralj-Iglič, Suppression of membrane vesiculation as anticoagulant and anti-metastatic mechanism. Role of stability of narrow necks, Gen. Physiol. Biophys. 32 (2013), 33–45.	2
P. C. Montgomery, Bruno Serio, Freddy Anstotz, Denis Montaner, Far field optical nanoscopy: How far can you go in nanometric characterization without resolving all the details?, Applied Surface Science 281 (2013) 89–95.	2
P. C. Montgomery and A. Leong-Hoi, Emerging optical nanoscopy techniques, Nanotechnol. Sci. Appl. 8 (2015) 31–44.	2
P. C. Montgomery and A. Leong-Hoi, F. Anstotz, D. Mitev, L. Pramatarova, O. Haeberlé, From superresolution to nanodetection: Overview of far field optical nanoscopy techniques for nanostructures, Journal of Physics: Conference Series 682 (2016) 012010.	2
J. Pavlič, J. Genova, A. Zheliaskova, M.D.Mitov, Electroformation of neutral and negatively charged phospholipids vesicles under physiological conditions, C. R. Acad. Bulg. Sci. 63(4) (2010) 479–502.	

V. Šuštar, J. Zelko, P. Lopalco, S. Lobasso, A. Ota, N. Poklar Ulrih, A. Corcelli, V. Kralj-Iglič, Morphology, Biophysical Properties and Protein-Mediated Fusion of Archaeosomes, PLoS ONE 7(7) (2012): e39401. doi:10.1371/journal.pone.0039401.	**2**
R. Štukelj, V. Šuštar, A. Mrvar-Brečko, P. Veranič, H. Hägerstrand, V. Kralj-Iglič, Suppression of membrane vesiculation as anticoagulant and anti-metastatic mechanism. Role of stability of narrow necks, Gen. Physiol. Biophys. 32 (2013) 33–45.	**2**
M. Šimundić, B. Drašler, V. Šuštar, J. Zupanc, R. Štukelj, D. Makovec, D. Erdogmus, V. Kralj-Iglič, Effect of engineered TiO2 and ZnO nanoparticles on erythrocytes, platelet-rich plasma and giant unilamelar phospholipid vesicles, BMC Veterinary Research 9 (2013) art. no. 7.	**2**
P. Lefrancois, B. Goudeau, S. Arbault,Electroformation of phospholipid giant unilamellar vesicles in physiological phosphate buffer, INTEGRATIVE BIOLOGY 10(7) (2018) 429–434. DOI: 10.1039/c8ib00074c.	**2**
J. Genova, A. Zheliaskova, and M. D. Mitov, Does maltose influence on the elasticity of SOPC membrane?, Journal of Physics: Conference Series 253(1) (2010) art. no. 012063.	
H. Bouvrais, Bending Rigidities of Lipid Bilayers. Their Determination and Main Inputs in Biophysical Studies, Advances in Planar Lipid Bilayers and Liposomes 15, Academic Press, London (2012) 1–75.	**2**
P. Méléard and T. Pott, Overview of a quest for bending elasticity measurement, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 55–76.	**2**
R. Dimova, Recent developments in the field of bending rigidity measurements on membranes, Advances in Colloid and Interface Science 208, Academic Press, London (2014) 225–234.	**2**
J. F. Nagle, M. S. Jablin, S. Tristram-Nagle, K. Akabori, What are the true values of the bending modulus of simple lipid bilayers?, CHEMISTRY AND PHYSICS OF LIPIDS 185, (2015) 3–10.	**2**
J. I. Pavlič, J. Genova, A. Zheliaskova, A. Iglič, M. D. Mitov, Bending elasticity of lipid membranes in presence of beta 2 glycoprotein I in the surrounding solution, Journal of Physics: Conference Series 253(1) (2010) art. no. 012064.	
V. Šuštar, A. Bedina-Zavec, R. Štukelj, M. Frank, G. Bobojević, R. Janša, E. Ogorevc, P. Kruljc, K.Mam, B. Šimunič , M. Manček-Keber, R. Jerala, B. Rozman, P. Veranič, H. Hägerstrand, V. Kralj-Iglič, Nanoparticles isolated from blood: a reflection of vesiculability of blood cells during the isolation process, INTERNATIONAL JOURNAL OF NANOMEDICINE 6 (2011) 2737–2748.	**2**
H. Bouvrais, Bending Rigidities of Lipid Bilayers. Their Determination and Main Inputs in Biophysical Studies, Advances in Planar Lipid Bilayers and Liposomes 15, Academic Press, London (2012) 1–75.	**2**
N. Kruszewska, Kr. Domino, R. Drelich, W. Urbaniak, A. D Petelska, Interactions between Beta-2-Glycoprotein-1 and Phospholipid Bilayer - A Molecular Dynamic Study, Membranes 10(12) (2020) 396. DOI: 10.3390/membranes10120396	**2**
J. I. Pavlič, J. Genova, G. Popkirov, A. Iglič, V. Kralj-Iglič, M. D. Mitov, Mechanoformation of neutral giant phospholipid vesicles in high ionic strength solution, Chem. Phys.Lipids 164(8) (2011) 727–731.	
P. Peterlin, V. Arrigler, H. Diamant, and E. Haleva, Permeability of Phospholipid Membrane for Small Polar Molecules Determined from Osmotic Swelling of Giant Phospholipid Vesicles, Advances in Planar Lipid Bilayers and Liposomes 16 Academic Press, London, (2012) 301–335.	**2**
B. G. Bag, R. Majumdar, S. K. Dinda, P. P. Dey, G. C. Maity, V. A. Mallia, R. G. Weiss, Selfassembly of ketals of arjunolic acid into vesicles and fibers yielding gel-like dispersions, Langmuir 29 (6) (2013) 1766–1778.	**2**
G. Staneva, A. Momchilova, K. Koumanov, M.I. Angelova, Developing Cell-Scale Biomimetic Systems. A Tool for Understanding Membrane Organization and Its Implication in Membrane-	**2**

Associated Pathological Processes, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 167–213.	
P. Méléard and T. Pott, Overview of a quest for bending elasticity measurement, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 55–76.	**2**
H. Chamati, Theory of phase transitions: From magnets to biomembranes, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 237–286.	**2**
D. L. Perrier, L. Rems, P. E. Boukany, Lipid vesicles in pulsed electric fields: Fundamental principles of the membrane response and its biomedical applications, Advances in Colloid and Interface Science 249, (2017) 248–271.	**2**
R. Dimova, Giant Vesicles and Their Use in Assays for Assessing Membrane Phase State, Curvature, Mechanics, and Electrical Properties, Annual Review of Biophysics 48, (2019) 293–119.	**2**
J. Genova, J. Pavlič, A. Zheliaskova, V. Kralj-Iglič, A. Iglič, and M. D. Mitov, Vesicles with Tubular Protrusions in Symmetrical and Non symmetrical conditions, Biotech. Biotech. Equip. 26(1) (2012) 205–208.	
H. Chamati, Theory of phase transitions: From magnets to biomembranes, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 237–286.	**2**
J. Genova and J. I. Pavlič, Realization of Marin Mitov idea for the stroboscopic illumination used in optical microscopy, Bulg. J. Phys. 39(1) (2012) 65–71.	
V. Vitkova, A. G. Petrov, Lipid Bilayers and Membranes. Material Properties., Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 89–138.	**2**
J. Genova, V. Kralj-Iglič, A. Iglič, R. Marinov, I. Bivas, Influence of Cholesterol on the Elastic Properties of Lipid Membranes, Journal of Physics: Conference Series 398 (2012) art. no. 012037.	
A. Yamada, N. Shimizu, T. Hikima, M. Takata, T. Kobayashi, H. Takahashi Effect of Cholesterol on the Interaction of Cytochrome P450 Substrate Drug Chlorzoxazone with the Phosphatidylcholine Bilayer, Biochemistry 55(28) (2016) 3888–3889.	**2**
K. Wojciechowski, M. Orczyk, M. Trapp, T. Gutberlet, Effect of triterpene and steroid saponins on lecithin bilayers, Coll. Surf. A: Physicochemical and Engineering Aspects 510 (2016) 150– 158.	**2**
H. Takahashi, T. Hoshino, A comparative study of the effects of 7β-hydroxycholesterol, 25-hydroxycholesterol, and cholesterol on the structural and thermal phase behavior of multilamellar dipalmitoylphosphatidylcholine bilayer vesicles, Chemistry and Physics of Lipids 227 (2020) 104872. DOI: 10.1016/j.chemphyslip.2020.104872.	**2**
P. B. Santhosh, S. Penič, J. Genova, A. Iglič, V. Kralj-Iglič and N. P. Ulrih, A study on the interaction of nanoparticles with lipid membranes and their iнfluence on membrane fluidity, Journal of Physics: Conference Series 398 (2012) art. no. 012034.	
H. Chamati, Theory of phase transitions: From magnets to biomembranes, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 237–286.	**2**
X. He, W. G. Aker, P. P. Fu, H.-M. Hwang, Toxicity of engineered metal oxide nanomaterials mediated by nano-bio-eco-interactions: A review and perspective, Environmental Science: Nano 2(6) (2015) 564–582.	**2**
S. L. Palencia, A. M. Buelvas, M. S. Palencia, Interaction mechanisms of inorganic nanoparticles and biomolecular systems of microorganisms, Current Chemical Biology 9(1) (2015) 10–22.	**2**
P. Hu, X. Zhang, C. Zhang, Z. Chen, Molecular interactions between gold nanoparticles and model cell membranes, Physical Chemistry Chemical Physics 17, (2015) 9873–9884.	**2**
R. Bhattacharya, C. Indukuri, N. Begam, O. H. Seeck, J. K. Basu, Plasmonic Lipid Bilayer Membranes for Enhanced Detection Sensitivity of Biolabeling Fluorophores, Advanced Functional Materials 25(46) (2015) 7233–7242.	**2**

W. Wohlleben, M. D. Driessen, S. Raesch, U. F. Schaefer,C. Schulze, B. V. Vacano, A. Vennemann, M. Wiemann, C. A. Ruge, H. Platsch, S. Mues, R. Ossig, J. M. Tomm, J. Schnekenburger, T. A. J. Kuhlbusch, A. Luch, C.-M. Lehr, A. Haase,Influence of agglomeration and specific lung lining lipid/protein interaction on short-term inhalation toxicity, Nanotoxicology 10(7) (2016) 970–980.	2
A. I. Kozelskaya , A. V. Panin, I. A. Khlusov, P. V. Mokrushnikov, B. N. Zaitsev, D. I. Kuzmenko, G. Y. Vasyukov, Morphological changes of the red blood cells treated with metal oxide nanoparticles, Toxicology in Vitro 37 (2016) 34–40.	2
L. Wang, T. Gotoh, Y. Wang, T. Kouyama, J. Wane, Formation of a Mimetic Biomembrane from the Hydrophobic Protein Zein and Phospholipids: Structure and Application, JOURNAL OF PHYSICAL CHEMISTRY C 121(36) (2017) 19999–20006.	2
M. R. Preiss, A. Hart, C. Kitchens, G. D. Bothun, Hydrophobic Nanoparticles Modify the Thermal Release Behavior of Liposomes, JOURNAL OF PHYSICAL CHEMISTRY B 121(19) (2017) 5040–5047.	2
H. Chan, P. Král, Nanoparticles Self-Assembly within Lipid Bilayers, ACS Omega 3(9) (2018) 10631–10637.	2
H. Zhang, X. Wei, L. Liu, Q. Zhang, W. Jiang, The role of positively charged sites in the interaction between model cell membranes and γ-Fe2O3 NPs, Science of the Total Environment 673 (2019), 414–423. DOI: 10.1016/j.scitotenv.2019.04.074.	2
C. G. Chilom, B. Zorilă, M. Bacalum, M. Bălăşoiu, R. Yaroslavtsev, S. V. Stolyar, S. Tyutyunnicov, Ferrihydrite nanoparticles interaction with model lipid membranes, Chemistry and Physics of Lipids 226 (2020), 104851. DOI: 10.1016/j.chemphyslip.2019.104851.	2
N. Rawat, S. L. Singla-Pareek, A. Pareek, Membrane dynamics during individual and combined abiotic stresses in plants and tools to study the same, Physiologia Plantarum 171(4) (2020), 653-676. DOI:10.1111/ppl.13217.	2
Y. Bunga, R. Kataky, Real time monitoring of interactions of gold nanoparticles with supported phospholipid lipid layers, Journal of Electroanalytical Chemistry 872 (2020), 114302. DOI: 10.1016/j.jelechem.2020.114302.	2
Y. Zheng, L. Xing, L. Chen, R. Zhou, J. Wu, X. Zhu, L. Li, Y. Xiang, R. Wu, L. Zhang, Y. Huang, Tailored elasticity combined with biomimetic surface promotes nanoparticle transcytosis to overcome mucosal epithelial barrier, Biomaterials 262 (2020), 120323. DOI: 10.1016/j.biomaterials.2020.120323.	2
Y. Zheng, L. Xing, L. Chen, R. Zhou, J. Wu, X. Zhu, L. Li, Y. Xiang, R. Wu, L. Zhang, Y. Huang, Tailored elasticity combined with biomimetic surface promotes nanoparticle transcytosis to overcome mucosal epithelial barrier, Biomaterials 262 (2021), 120323. DOI: 10.1016/j.biomaterials.2020.120323.	2
J. Genova, Marin Mitov lectures: Measuring bending elasticity of lipid bilayers, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 1–27.	
H. Chamati, Theory of phase transitions: From magnets to biomembranes, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 237–286.	2
M. Fosnarič, S. Penič, A. Iglič, and I. Bivas, Thermal fluctuations of phospholipid vesicles studied by Monte Carlo simulations, Advances in Planar Lipid Bilayers and Liposomes 17, Academic Press, London (2013) 331–358.	2
S. Penic, L. Mesarec, M. Fosnaric, V. Kralj Iglic, S. Kralj, W.Gozdz and A. Iglic, Modeling of closed membrane shapes, Journal of Physics: Conference Series 558, (2014) 012010.	2
N. Tonchev, Statistical mechanics of nearly spherical membranes: bending and stretching elasticities and thermal shape fluctuations, Physics of Particles and Nuclei. Theory, 52(2) (2021) 290–314 DOI:10.1134/S1063779621020064.	2
J. Genova, V. Vitkova, I. Bivas, *Registration and analysis of the shape fluctuations of nearly spherical lipid vesicle*, Phys. Rev. E 88 (2013) 022707.	

D. Abreu, M. Levant, V. Steinberg, U. Seifert, Fluid Vesicles in Flow, Advances in Colloid and Interface Science 208, Academic Press, London (2014) 129–141.	2
R. Dimova, Recent developments in the field of bending rigidity measurements on membranes, Advances in Colloid and Interface Science 208, Academic Press, London (2014) 225–234.	2
J. F. Nagle, M. S. Jablin, S. Tristram-Nagle, K. Akabori, What are the true values of the bending modulus of simple lipid bilayers?, Chemistry and Physics of Lipids 186 (2015) 3–10.	2
P. C. Montgomery and A. Leong-Hoi, Emerging optical nanoscopy techniques, Nanotechnol. Sci. Appl. 8 (2015) 31–44.	2
Y.-H. Lin, Y. Ge, L. Lautscham, W. H. Goldmann, B. Fabry, C. A. Naumann, Probing Cellular Mechano-Sensitivity using Biomembrane-Mimicking Cell Substrates of Adjustable Stiffness, Biophys. J. 2(1) (2015) 305a.	2
K. Liu, C. Hamilton, J. Allard, J. Lowengrub, S. Li, Wrinkling dynamics of fluctuating vesicles in time-dependent viscous flow, Soft Matter 12(26) (2016) 5663–5675.	2
T. R. Galimzyanov, P. I. Kuzmin, P. Pohl, S.y A. Akimov, Elastic deformations of bolalipid membranes, Soft Matter, (2015) 12 (2016) 2357–2364.	2
P. C. Montgomery and A. Leong-Hoi, F. Anstotz, D. Mitev, L. Pramatarova, O. Haeberlé, From superresolution to nanodetection: Overview of far field optical nanoscopy techniques for nanostructures, Journal of Physics: Conference Series 682 (2016) 012010.	2
T. R. Galimzyanov, P. V. Bashkirov, P. S. Blank, J. Zimmerberg, O. V. Batishchev, S. A. Akimov, Monolayerwise application of linear elasticity theory well describes strongly deformed lipid membranes and the effect of solvent, Soft Matter, 5 (2020) DOI: 10.1039/C9SM02079A.	2
C. Rodriguez-Quijada, J. B.Dahl, Non-contact microfluidic mechanical property measurements of single apoptotic bodies, Biochim. et Biophys. Acta (BBA) - General Subjects, (2020) 129657 DOI: 10.1016/j.bbagen.2020.129657.	2
H. A. Faizi, C. J. Reeves, V. N. Georgiev, P. M. Vlahovska, R. Dimova, Fluctuation spectroscopy of giant unilamellar vesicles using confocal and phase contrast microscopy, Soft Matter, 16(39) (2020) 8996–9001. DOI: 10.1039/d0sm00943a.	2
N. Tonchev, Statistical mechanics of nearly spherical membranes: bending and stretching elasticities and thermal shape fluctuations, Physics of Particles and Nuclei. Theory, 52(2) (2021) 290–314 DOI:10.1134/S1063779621020064.	2
C. Has, Recent advancements to measure membrane mechanical and transport properties, Journal of Liposome Research, (2020) DOI: 10.1080/08982104.2020.1850776.	2
N. de Lange, J. M. Kleijn, F. A. M. Leermakers, Structural and mechanical parameters of lipid bilayer membranes using a lattice refined self-consistent field theory, Physical Chemistry Chemical Physics, 23(9) (2021) DOI: 10.1039/D0CP05597B.	2
P. B. Santhosh, A. Velikonja, S. Perutkova, E. Gongadze, M. Kulkarni, J. Genova, K. Elersic, A. Iglič, V. Kralj-Iglič, N. Poklar Ulrih, *Influence of nanoparticle-membrane electrostatic interactions on membrane fluidity and bending elasticity*, Chem. Phys. Lipids 178 (2014) 52–62.	
D. Laha, A. Pramanik, A. Laskar, M. Jana, P. Pramanik, P. Karmakar, Shape-dependent bactericidal activity of copper oxide nanoparticle mediated by DNA and membrane damage, Materials Research Bulletin 59 (2014) 185–191.	2
Y. Ha, L. E. Katz, H. M. Liljestrand, Distribution of Fullerene Nanoparticles between Water and Solid Supported Lipid Membranes: Thermodynamics and Effects of Membrane Composition on Distribution, Environmental Science and Technology 49 (2015) 14564–14553.	2
G. A. Dominguez, J. Perlo, C. C. Fraenza, E. Anoardo, Measurement of the bending elastic modulusin unilamellar vesicles membranes by fast field cycling NMR relaxometry, Chemistry and Physics of Lipids 201 (2016) 21–27.	2

S. Melikishvili, A. Poturnayova, M. Ionov, M. Bryszewska, T.Vary, J. Cirak, M. Á. Muñoz-Fernández, R.l Gomez-Ramirez, F. Javier de la Mata, T. Hianik, The effect of polyethylene glycolmodified lipids on the interaction of HIV-1 derived peptide – dendrimer complexes with lipid membranes, Biochimica et Biophysica Acta 1858 (2016) 3005–3016.	**2**
X. Wei, X. Qu, L. Ding, J. Hu, W. Jiang, Role of bovine serum albumin and humic acid in the interaction between SiO2 nanoparticles and model cell membranes, Environmental Pollution 219 (2016) 1–8.	**2**
A. Luchini, Y. Gerelli, G. Fragneto, T. Nylander, G. K. Pálsson, M.-S. Appavou, L. Paduano, Neutron Reflectometry reveals the interaction between functionalized SPIONs and the surface of lipid bilayers, Colloids and Surfaces B: Biointerfaces 151 (2017) 76–87.	**2**
C. Tang, C. Linc, S. Leed, W. Wang, Membrane lipid profiles of coral responded to zinc oxide nanoparticle-induced perturbations on the cellular membrane, Aquatic Toxicology 187 (2017) 72–81.	**2**
H. Baghirov, S. Melikishvili, Yrr. Morch, E. Sulheim, A. Aslund, T. Hianik, C. Davies, The effect of poly(ethylene glycol) coating and monomer type on poly(alkyl cyanoacrylate) nanoparticle interactions with lipid monolayers and cells, COLLOIDS AND SURFACES B-BIOINTERFACES 150 (2017) 373–383.	**2**
G. D. Bothun, N. Ganji, I. A. Khan, A. Xi, C. Bobba, Anionic and Cationic Silver Nanoparticle Binding Restructures Net-Anionic PC/PG Monolayers with Saturated or Unsaturated Lipids, LANGMUIR 33 (2017) 353–360.	**2**
A. Ivask, E. H. Pilkington, Th. Blin, A. Käkinen, H. Vija, M. Visnapuu, J. F. Quinn, M. R. Whittaker, R. Qiao, Th. P. Davis, P. Chun Ke, and N. H. Voelcker, Uptake and transcytosis of functionalized superparamagnetic iron oxide nanoparticles in an in vitro blood brain barrier model, Biomaterials Science 6(2) (2018), 314–323. DOI 10.1039/x0xx00000x.	**2**
D. Ye, Y. Li, G. Ning, Magnetic labeling of natural lipid encapsulations withiron-based nanoparticles,Nano Research 11(6) (2018), 2970–2991 DOI:10.1007/s12274-018-1980-5.	**2**
S. Zuraw-Weston, D. A. Wood, I. K. Torres, Y. Lee, L.-S. Wang, Z. Jiang, G. R. Lázaro, S. Wang, A. A. Rodal, M. F. Hagan, V. M. Rotello, A. D. Dinsmore, Nanoparticles binding to lipid membranes: From vesicle-based gels to vesicle tubulation and destruction, Nanoscale 11(39) (2019), 18464–18474 DOI: 10.1039/c9nr06570a.	**2**
H. Zhang, X. Wei, L. Liu, Q. Zhang, W. Jiang, The role of positively charged sites in the interaction between model cell membranes and γ-Fe2O3 NPs, Science of the Total Environment 673 (2019), 414–423 DOI: 10.1016/j.scitotenv.2019.04.074.	**2**
G. Otis, S. Bhattacharya, O. Malka, S. Kolusheva, P. Bolel, A. Porgador, R. Jelinek, Selective Labeling and Growth Inhibition of Pseudomonas aeruginosa by Aminoguanidine Carbon Dots, ACS Infectious Diseases 5(2) (2019), 292–302 DOI: 10.1021/acsinfecdis.8b00270.	**2**
C. G. Chilom, B. Zorilă, M. Bacalum, M. Bălăşoiu, R. Yaroslavtsev, S. V. Stolyar, S. Tyutyunnicov, Ferrihydrite nanoparticles interaction with model lipid membranes, Chemistry and Physics of Lipids 226 (2020), 104851 DOI: 10.1016/j.chemphyslip.2019.104851.	**2**
B. Zhu, X. Wei, J. Song, Q. Zhang, W. Jiang, Crystalline phase and surface coating of Al2O3 nanoparticles and their influence on the integrity and fluidity of model cell membranes, Chemosphere 247 (2020), 125876. DOI: 10.1016/j.chemosphere.2020.125876.	**2**
Y. Zheng, L. Xing, L. Chen, R. Zhou, J. Wu, X. Zhu, L. Li, Y. Xiang, R. Wu, L. Zhang, Y. Huang, Tailored elasticity combined with biomimetic surface promotes nanoparticle transcytosis to overcome mucosal epithelial barrier, Biomaterials 262 (2020), 120323. DOI:10.1016/j.biomaterials.2020.120323.	**2**
M. Nagao, R. Bradbury, S.M. Ansar, C. L. Kitchens, Effect of gold nanoparticle incorporation into oil-swollen surfactant lamellar membranes, Structural Dynamics 7(6) (2020), 0000041. DOI: 10.1063/4.0000041.	**2**

M. Chen, F. Dong, H. Li, Y. Zhao, S. Ou, M. Liu, W Zhang, Interface interaction between high-siliceous/calcareous mineral granules and model cell membranes dominated by electrostatic force, Environmental Science and Pollution Research xx (2021), xx1. DOI: 10.1007/s11356-021-12584-8.	**2**
P. B. Santhosh, S. Kiryakova, J. Genova, N. Poklar Ulrih, *Influence of iron oxide nanoparticles on bending elasticity and bilayer fluidity of phosphotidylcholine liposomal membranes*, Coll. Surf. A 460 (2014) 248–253.	
C. I. Camara, L. M. A. Monzon, J. M. D. Coey, L. M. Yudi, Interaction of magnetic nanoparticles with phospholipid films adsorbed at a liquid/ liquid interface, Physical Chemistry Chemical Physics 17 (2015) 414–421.	**2**
N. Bayat, V. R. Lopes, M. Sanchez-Dominguez, R. Lakshmanan, G. K. Rajarao, S. Cristobal, Assessment of functionalized iron oxide nanoparticles in vitro: Introduction to integrated nanoimpact index, Environmental Science: Nano 2 (2015) 380–394.	**2**
C. Beato, M. S. Fernández, S. Fermani, M. Reggi, A. Neira-Carrillo, A. Rao, G. Falini, J. L. Arias,Calcium carbonate crystallization in tailored constrained environments, CrystEngComm 17 (2015) 5953–5961.	**2**
I. R. Calori, A. C. Tedesco, Lipid vesicles loading aluminum phthalocyanine chloride: Formulation properties and disaggregation upon intracellular delivery, Journal of Photochemistry and Photobiology B: Biology 160 (2016) 240–247.	**2**
S. Melikishvili, A. Poturnayova, M. Ionov, M. Bryszewska, T. Vary, J. Cirak, M. Á. Muñoz-Fernández, R. Gomez-Ramirez, F. Javier de la Mata, T. Hianik, The effect of polyethylene glycolmodified lipids on the interaction of HIV-1 derived peptide–dendrimer complexes with lipid membranesy,Biochimica et Biophysica Acta 1858 (2016) 3005–3016.	**2**
V. Bartůněk, D. Průcha, M. Švecová, P. Ulbrich, Š. Huber, D. Sedmidubský, O. Jankovský, Ultrafine ferromagnetic iron oxide nanoparticles: Facile synthesis by low temperature decomposition of iron glycerolate, Materials Chemistry and Physics 180 (2016) 272–278.	**2**
R. Upputuri, A. Mandal, Sustained Release of Green Tea Polyphenols from Liposomal Nanoparticles; Release Kinetics and Mathematical Modelling, IRANIAN JOURNAL OF BIOTECHNOLOGY 15(4) (2017) 277–283.	**2**
C. Has, Recent advancements to measure membrane mechanical and transport properties, Journal of Liposome Research (2020) DOI: 10.1080/08982104.2020.1850776	**2**
J. Genova, I. Bivas, R. Marinov Cholesterol Influence on the Bending Elasticity of Lipid Membranes, Coll. Surf. A 460 (2014) 79–82.	
T. Shigematsu, K. Koshiyama, S. Wada, Line tension of the pore edge in phospholipid/cholesterol bilayer from stretch molecular dynamics simulation, Journal of Biomechanical Science and Engineering 11 (2016) 15-00422.	**2**
C. W. Lin, B. Mensa, M. Barniol-Xicota, W. F. DeGrado, F. Gai, Activation pH and Gating Dynamics of Influenza A M2 Proton Channel Revealed by Single-Molecule Spectroscopy, Angewandte Chemie International Edition 56(19) (2017) 5283–5287.	**2**
S. Das and R. M. Thaokar, Large deformation electrohydrodynamics of a Skalak elastic capsule in AC electric field, Soft Matter 14(9) (2018) 1719–1736. DOI: 10.1039/C7SM02297B	**2**
S. Sun, D. Adyshev, S. Dudek, A. Paul, A. McColloch, M. Cho, Cholesterol-dependent modulation of stem cell biomechanics: Application to adipogenesis, Journal of Biomechanical Engineering 141(8) (2019) 081005-1. DOI: 10.1115/1.4043253	**2**
Y. Ji, Y. Wang; Wei Si; Yunfei Chen, Cholesterol-dependent modulation of stem cell biomechanics: Application to adipogenesis, Journal of Biomechanical Engineering 141(8) (2019) 081005-1. DOI: 10.1115/1.4043253	**2**

S. Kiryakova, M. Dencheva-Zarkova, J. Genova, Effect of Amphotericin B antibiotic on the properties of model lipid membrane, Journal of Physics: Conference Series 558 (2014) 012027.	
M. F. Peralta, H. Smith, D. Moody, S. Tristram-Nagle, D. C. Carrer, Effect of Anti-Leishmania Drugs on the Structural and Elastic Properties of Ultradeformable Lipid Membranes, JOURNAL OF PHYSICAL CHEMISTRY B 122 (29) (2018) 7332–7339 DOI:10.1021/acs.jpcb.8b04001.	2
S. K. Kwofie, E. Broni, B. Dankwa, K. S. Enninful, G. B. Kwarko, L.s Darko, R. Durvasula, P. Kempaiah, B. Rathi, W. A. Miller III, A. Yaya, M. D. Wilson, Outwitting an Old Neglected Nemesis: A Review on Leveraging Integrated Data-Driven Approaches to Aid in Unraveling of Leishmanicides of Therapeutic Potential, Current Topics in Medicinal Chemistry 20 (5) (2020) DOI:10.2174/1568026620666200128160454.	2
J. Genova, N. Poklar Ulrih, V. Kralj-Iglič, A. Iglič, I. Bivas, Bending Elasticity Modulus of Giant Vesicles Composed of Aeropyrum Pernix K1 Archaeal Lipid, Life 5 (2015) 1101–1110.	
Y.- H. Lin, Y. Ge, L. Lautscham, W. H. Goldmann, B. Fabry, C. A. Naumann, Probing Cellular Mechano-Sensitivity using Biomembrane-Mimicking Cell Substrates of Adjustable Stiffness, Biophus. J. 108(2) (2015) 305a.	2
D. Bochicchio and L. Monticelli, The membrane bending modulus in experiments and simulations: a puzzling picture, Advances in Biomembranes and Lipid Self-Assembly 23 (2016) 117– 143.	2
A. Velikonja, P. Kramar, D. Miklavčič, A. Maček Lebar, Specific electrical capacitance and voltage breakdown as a function of temperature for different planar lipid bilayers, Bioelectrochemistry 112 (2016) 132–137.	2
A. H. Zhang, G. Sharma, E. A. B. Undheim, X. Jia, M. Mobli, A complicated complex: Ion channels, voltage sensing, cell membranes and peptide inhibitors, Neuroscience Letters 679 (2018) 35–47.	2
V. Pereno, J. Lei, D. Carugo, E. Stride, Microstreaming inside Model Cells Induced by Ultrasound and Microbubble, Langmuir 36(23) (2020) 6388–6398.	2
J. Genova, M. Petrov, I. Bivas, P. Rafailov, H. Naradikian, B. Katranchev, Fourier-transform Infrared and Raman characterization of bilayer membranes of the phospholipid SOPC and its mixtures with cholesterol, Coll.Surf. A 557 (2018) 85–93.	
G. Cabello, K. C. Nwoko, J. F. Marco, M. Sánchez-Arenillas, A. M. Méndez-Torres, J. Feldmann, C. Yáñez, T. A. D. Smith, Cu@Au self-assembled nanoparticles as SERS-active substrates for (bio)molecular sensing, Journal of Alloys and Compounds 791 (2019) 184–192. doi.org/10.1016/j.jallcom.2019.03.279.	2
I. Vinogradov, S. D. Verma, Two-Dimensional Infrared Spectroscopy of Nitrile Labels as a Tool to Probe Dynamics and Interactions in Lipid Membranes, In: Prasad R., Singh A. (eds) Analysis of Membrane Lipids. Springer Protocols Handbooks. Springer, New York, NY (2020) 189–212. DOI:10.1007/978-1-0716-0631-5-11.	2
R. R. Pinheiro, M. C. Bernardino, E. Barreto-Bergter, Sphingolipids: Functional and Biological Aspects in Mammals, Plants, and Fungi, In: Prasad R., Singh A. (eds) Analysis of Membrane Lipids. Springer Protocols	2
P. Tai, M. Goldin, H. Singh, M. Waterland, D. Everett, Cholesterol-Phospholipid Interactions Resist the Detergent Effect ofBovine Bile, Colloids and Surfaces B: Biointerfaces (2021) DOI:10.1016/j.colsurfb.2021.111842.	2
Z. Slavkova, J. Genova, H. Chamati, M. Koroleva, D. Yancheva, Influence of hydrophobic Au nanoparticles on SOPC lipid model systems, Coll. Surf. A 603 (2020) 125090. DOI:10.1016/j.colsurfa.2020.125090.	
G. Niu, F. Liu, Y. Yang, Y. Fu, W. Wang, Synthesis of penta-fold twinned Pd-Au-Pd s egmental nanorods for in situmonitoring catalytic reaction, Coll. Surf. A 607 (2020) 125490. DOI: 10.1016/j.colsurfa.2020.125490.	2

M. Lemaalem, N. Hadrioui, S. El Fassi, A. Derouiche, H. Ridouane, An efficient approach to study membrane nano-inclusions: from the complex biological world to a simple representation, RSC Advances 11(18) (2021) DOI: 10.1039/d1ra00632k.	**2**
T. Goršak, M. Drab, D. Križaj, M. Jeran, J. Genova, S. Kralj, D. Lisjak, V. Kralj Iglič, A. Iglič, D. Makovec, Magneto-mechanical actuation of barium-hexaferrite nanoplatelets for the disruption of phospholipid membranes, Journal of Colloid and Interface Science, 579 (2020) 508–519. DOI:10.1016/j.jcis.2020.06.079.	
A. R. Iliasov, T. R. Nizamova, V. A. Naumenko, A. S. Garanina, S. S. Vodopyanova, A. A. Nikitin, A. G. Pershina, A. A .Chernysheva, Y. Kan, P. S. Mogilnikov, O.N.Metelkina, I. V. Schetinin, A. G. Savchenko, A. G. Majouga, M. A. Abakumov, Non-magnetic shell coating of magnetic nanoparticles as key factor of toxicity for cancer cells in a low frequency alternating magnetic field, Colloids and surfaces B: Biointerfaces 18 (2021) 111931. DOI: 10.1016/j.colsurfb.2021.111931.	**2**
Показател Д	**364**

Примери за съществени цитирания

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Цитираща публикация: Yamada, Ayumi & Shimizu, Nobutaka & Hikima, Takaaki & Takata, Masaki & Kobayashi, Toshihide & Takahashi, Hiroshi. (2016). Effect of Cholesterol on the Interaction of Cytochrome P450 Substrate Drug Chlorzoxazone with Phosphatidylcholine Bilayers. Biochemistry. 55. DOI: 10.1021/acs.biochem.6b00286.

From the analysis on thermally induced shape fluctuation of stearoyl-oleoyl-PC (SOPC) vesicles containing cholesterol, **Genova et al. (75)** have revealed that the sample containing 10 mol% cholesterol exhibits the minimum value of the bending elasticity modulus among all samples investigated.

Цитирана публикация: Genova J., Zheliaskova A., Mitov M.D. Monosaccharides (fructose, glucose) and disaccharides (sucrose, trehalose) influence the elasticity of SOPC membranes. (2007) Journal of Optoelectronics and Advanced Materials, 9 (2), 427-430.

Цитираща публикация: Van, H.T., Bui, T.N.H., Mai, Y.H., Nguyen, M.N.H., Pham, T.V., LE, V.S., Doan, V.D., Le, P.T.Q. Chemical composition and antibacterial activities of ethanol extract of Geodorum attenuatum griff. (orchidaceae) 2020. Gazi University Journal of Science 33(3), 613-620.

Genova et al. (2004) have proved disaccharides, such as sucrose, trehalose influenced the bending elasticity of SOPC (l-stearoyl-2-oleoyl-sn-glycero-3-phosphocholine) lipid membranes **[13].**

Цитираща публикация: Slobodianiuk, L., Budniak, L., Marchyshyn, S., Kostyshyn, L., Zakharchuk, O. Analysis of carbohydrates in Saponaria officinalis L. using GC/MS method. 2021. Pharmacia. 68(2), 339-345.

Glucose is a monosaccharide which is one of the most important carbohydrates in biology. The cell uses it as a source of energy and a metabolic intermediate **(Genova et al. 2007)**.

Цитирана публикация: Genova J., Vitkova V., Bivas I. Registration and analysis of the shape fluctuations of nearly spherical lipid vesicles (2013) Physical Review E - Statistical, Nonlinear, and Soft Matter Physics, 88 (2), 022707.

Цитираща публикация: Montgomery, P.C., Leong-Hoi, A. Emerging optical nanoscopy techniques. Nanotechnology, Science and Applications. 2015. 8, A03, 31-44

Figure 6 Measurement of dynamic thermal shape fluctuations of a giant vesicle using strobed phase-contrast microscopy. Reprinted with permission from **Genova J,** Vitkova V, Bivas I. Registration and analysis of the shape fluctuations of nearly spherical lipid vesicles. Phys Rev E Stat Nonlin Soft Mater Phys. 2013;88(2):022707. Copyright © 2013 by the American Physical Society. http://dx.doi.org/10.1103/PhysRevE.88.022707. (**39)**

Цитираща публикация: P C Montgomery, A Leong-Hoi, F Anstotz, D Mitev, L Pramatarova and O Haeberlé. From superresolution to nanodetection: overview of far field optical nanoscopy techniques for nanostructures. 2015. Journal of Physics: Conference Series. 682(1), 012010.

A second contrast enhancing technique is also presented, real time phase contrast microscopy to reveal the vibration modes of the 5 nm thick lipid walls of giant vesicles **[16]**.

Selection criteria are used on the series of images of moving vesicles to retain only certain images that satisfy the requirements of the applied theory **[16]**.

Figure 4. Measurement of dynamic thermal shape fluctuations of a giant vesicle using strobed phase contrast microscopywith (a) a single sample image of a vesicular contour with intensity profiles before (upper) and after processing (lower) and (b) a region of interest (ROI) containing the vesicular contour used to define selection criteria of the measured vesicles (courtesy of J. **Genova et al. [16, 40],** Laboratory of Liquid Crystals, ISSP, BAS, Sofia, Bulgaria).

Цитираща публикация: Tonchev, N.S. Statistical Mechanics of Thermal Fluctuations of Nearly Spherical Membranes: the Influence of Bending and Stretching Elasticities. 2021. Physics of Particles and Nuclei. 52(2), 290-314.

The real part a > 0 of s is chosen so that the integral in Eq. **(21)** is finite. It will be convenient to introduce a new dimensionless quantity σs = s 4πβKc.

Цитирана публикация: Genova J, Zheliaskova A, Vitkova V and Mitov MD 2009 Stroboscopic illumination study of the dynamics of fluctuating vesicles J. Optoelectron. Adv. Mater. 11 1222

Цитираща публикация: John F. Nagle, Michael S. Jablin, Stephanie Tristram-Nagle, Kiyotaka Akabori. What are the true values of the bending modulus of simple lipid bilayers? 2015. Chemistry and Physics of Lipids. 185, 3-10.

The same group, using the SA method exclusively, also reported a decreasing KC with increasing sucrose concentration, although the decrease was only about half as large as in Fig.

1 **(Genova et al., 2006).** Subsequently, decreasing KC was reported for other sugars **(Genova et al., 2007)**, although, contrarily, maltose was reported not to decrease KC **(Genova et al., 2010).** Fig. 1 also shows the most recent SOPC value (open square) with no sugar obtained after further development of the SA method **(Genova et al., 2013)**.

Цитираща публикация: Montgomery, P.C., Montaner, D., Anstotz, F., Serio, B. Wide field nanometric materials analysis by diffraction limited far field optical nanoscopy. 2012. Journal of Physics: Conference Series. 398(1),012001

A more recent application of phase contrast microscopy in nano-characterization, is in the measurement of the elastic properties of lipid membranes through the study of thermal shape fluctuations of giant vesicles **[9]**.

The strobed images (4 µs pulse duration) in figure 4 taken at intervals of 1 s show clearly such fluctuations. Strobing from 0.1 to 1 MHz is possible. The system has been used to successfully estimate the friction between the monolayers comprising the bilayer of the membrane, as well as the bending elasticity modulus of the blocked exchange of molecules between the monolayers **[9]**.

Цитираща публикация: P C Montgomery, A Leong-Hoi, F Anstotz, D Mitev, L Pramatarova and O Haeberlé. From superresolution to nanodetection: overview of far field optical nanoscopy techniques for nanostructures. 2016. Journal of Physics: Conference Series. 682(1),012010

The dynamic thermal shape fluctuations of giant vesicles (10 µm radius, figure 4(a)) have been studied using strobed phase contrast microscopy to reduce the measurement uncertainties of the bending elasticity of lipid membranes **[40]**

Цитираща публикация: Montgomery, P.C., Leong-Hoi, A. Emerging optical nanoscopy techniques. 2015. Nanotechnology, Science and Applications. 2015. 8, A03, pp. 31-44

In the field of biology, strobed phase-contrast microscopy has been used recently to characterize the bending elasticity of lipid membranes through the study of thermal shape fluctuations of giant, (10 µm radius) nearly spherical vesicles. (**38)**

Цитирана публикация: Genova, J., Petrov, M., Bivas, I., Rafailov P, Naradikian, H., Katranchev, B. Fourier-transform infrared and Raman characterization of bilayer membranes of the phospholipid SOPC and its mixtures with cholesterol. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2018, 557, 85–93.

Цитираща публикация: Tai, P., Golding, M., Singh, H., Waterland, M., Everett, D.W. Cholesterol-phospholipid interactions resist the detergent effect of bovine bile (2021) Colloids and Surfaces B: Biointerfaces, 205, 111842. DOI: 10.1016/j.colsurfb.2021.111842

A similar trend has been previously observed in 1-octadecanoyl-2–(9Z-octadecenoyl)-sn-glycero3-phosphocholine (SOPC, 18:0; 18:1)/cholesterol bilayers **[61]**. The addition of ≥ 30% mol cholesterol induced phase separation of the cholesterol and SOPC, leading to no interchain interactions between the lipids; however, the intrachain ordering was conserved.

Цитирана публикация: J. Genova, N.P. Ulrih, V. Kralj-Iglicˇ, A. Iglicˇ, I. Bivas, Bending elasticity modulus of giant vesicles composed of Aeropyrum Pernix K1 archaeal lipid, Life 5 (2) (2015) 1101–1110.

Цитираща публикация: Bochicchio, D., Monticelli, L. The membrane bending modulus in experiments and simulations: A puzzling picture. 2016. Advances in Biomembranes and Lipid Self-Assembly, 23, 117-143.

Fig. 1 Two images of a fluctuating GUV at different times, obtained from phase-contrast microscopy. Reprinted with permission from **[26]**.

Цитирана публикация: Santhosh, P.B., Kiryakova, S.I., Genova, J.L., Ulrih, N.P. Influence of iron oxide nanoparticles on bending elasticity and bilayer fluidity of phosphotidylcholine liposomal membranes. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2014, 460, 248–253

Цитираща публикация: Chandra Has (2020): Recent advancements to measure membrane mechanical and transport properties, Journal of Liposome Research, DOI: 10.1080/08982104.2020.1850776.

- The GUVs κc in pure water was found almost 25% less compared to that obtained in an aqueous solution containing silica-coated iron oxide nanoparticles **(Santhosh et al. 2014).**

- However, it was noted only a small effect when an aqueous solution of uncoated iron oxide was employed **(Santhosh et al. 2014).**

- Fig. 1 Thermally-induced shape fluctuations of a stearoyloleoylphosphatidylcholine (SOPC) GUV under phase-contrast microscopy. The time-interval between each snapshot is several seconds. The vesicle interior and exterior solutions are identical. The bending rigidity of SOPC membrane in pure water is found to be 1 9 (1 .8 8 0 .1 7) 1 0 – ± × J. Reprinted from **Santhosh et al. (2014)** with permission from Elsevier.

Цитираща публикация: C. Beato, M. S. Fernández, S. Fermani,b M. Reggi, A. Neira-Carrillo, A. Rao, G. Falini and J. L. Arias. Calcium carbonate crystallization in tailored constrained environments. 2015. CrystEngComm. 17(31), pp. 5953-5961

In fact, such calcium concentration-dependent interaction has been recently reported. **(39)**

Цитираща публикация: C. I. Cámara, L. M. A. Monzón, J. M. D. Coey and L. M. Yudi. Interaction of magnetic nanoparticles with phospholipid films adsorbed at a liquid/liquid interface.
***Phys. Chem. Chem. Phys.*,** 2015,**17**, 414-421

On the other hand, it has also been shown that silica coated iron oxide nanoparticles produce a decrease of 25% in the elasticity modulus of membranes. **(7)**

Цитирана публикация: Santhosh P. B., Velikonja A., Perutkova Š., Gongadze E., Kulkarni M., Genova J., Eleršič K., Iglič A., Kralj-Iglič V., and Ulrih N. P., Influence of nanoparticle-membrane electrostatic interactions on membrane fluidity and bending elasticity. Chemistry and Physics of Lipids, 2014, 178, pp. 52–62

Цитираща публикация: Claudia G. Chilom, Bogdan Zorilă, Mihaela Bacalum, Maria Bălăşoiu, Roman Yaroslavtsev, Sergey V. Stolyar, Sergey Tyutyunnicov, Ferrihydrite nanoparticles interaction with model lipid membranes, Chemistry and Physics of Lipids, 226, 2020, 104851,

Similar results were also reported in **(Santhosh et al., 2012, 2014).** The results suggest that the NPs are interacting slightly with the lipid head groups for short exposer times (1 h), but, after a longer time, the NPs can be found predominantly in the hydrophobic core of the membrane and not embedded at the head group region.

Цитираща публикация: Chuan-Ho Tang, Ching-Yu Lin, Shu-Hui Lee, and Wei-Hsien Wang. Membrane lipid profiles of coral responded to zinc oxide nanoparticle-induced perturbations on the cellular membrane. Aquatic Toxicology, 187, 2017,72-81, https://doi.org/10.1016/j.aquatox.2017.03.021.

The coral cells accommodate the adhesion of nZnOs to maintain suitable rigidity of the cellular membrane because nanoparticles soften the lipid membrane **(Santhosh et al., 2014).**

Цитираща публикация: Nagao, M., Bradbury, R., Ansar, S. M., & Kitchens, C. L. (2020). Effect of gold nanoparticle incorporation into oil-swollen surfactant lamellar membranes. *Structural dynamics (Melville, N.Y.)*, *7*(6), 065102. https://doi.org/10.1063/4.0000041

Although it is known that the interactions between membranes and NPs affect not only the elastic properties of the membranes, but also their fluidity,**[29]** the influence of NPs on membrane dynamics is not fully understood.

Цитираща публикация: Ye, D., Li, Y., Gu, N. Magnetic labeling of natural lipid encapsulations with iron-based nanoparticles. 2018. Nano Research11(6), pp. 2970-2991

When the attraction force is strong enough to drive the membrane to bend and enwrap the nanoparticle (Fig. 3(a)) this results in the generation of a bud that encapsulates the nanoparticle and subsequently transports it into cell **[117].**

Цитираща публикация: Angela Ivaska, Emily H. Pilkingtonc, Thomas Blinc, Aleksandr Käkinenc, Heiki Vijab, Meeri Visnapuub, John F. Quinnc, Michael R. Whittakerc, Ruirui Qiaoc, Thomas P. Davisc, Pu Chun Kec, and Nicolas H. Voelckera. Uptake and transcytosis of functionalized superparamagnetic iron oxide nanoparticles in an in vitro blood brain barrier model. 2018. Biomaterials Science. 6(2), 314-323.

IONP-exposed cells (Fig. 3) showed increased membrane ordering (decreased fluidity). Decreased membrane fluidity upon NP exposure has been reported in previous studies. **(27)**

Цитирана публикация: Kiryakova S., Dencheva-Zarkova M., Genova J. Effect of Amphotericin B antibiotic on the properties of model lipid membrane (2014) Journal of Physics: Conference Series, 558 (1) 12027

Цитираща публикация: Peralta, M.F., Smith, H., Moody, D., Tristram-Nagle, S., Carrer, D.C. Effect of Anti-Leishmania Drugs on the Structural and Elastic Properties of Ultradeformable Lipid Membranes. 2018. Journal of Physical Chemistry B, 122(29), pp. 7332-7339

We found that the KC value decreased for the range from 0.5 to 5 mol% by ~49%. So, the general trend, although not the absolute KC values of our results, agrees with those of **Kiryakova et al 37.**

Цитирана публикация: Vitkova V, Genova J, Mitov MD, Bivas I. Sugars in the aqueous phase change the mechanical properties of lipid mono- and bilayers. Mol Cryst Liq Cryst 2006; 449: 95–106.

Цитираща публикация: Dimova, R. Recent developments in the field of bending rigidity measurements on membranes. 2014. Advances in Colloid and Interface Science, 208, 225-234.

Both micropipette aspiration and fluctuation spectroscopy on giant vesicles revealed a strong decrease in the bending rigidity of membranes when exposed to mono- and oligosaccharide solutions with concentration up to around 0.3 M. The impact of sucrose is illustrated in Fig. 9 with data from Ref. **[158]**.

Цитирана публикация: Genova, J. Marin Mitov Lectures. Measuring the Bending Elasticity of Lipid Bilayers. Advances in Planar Lipid Bilayers and Liposomes, 2013, 17, 1–27.

Цитираща публикация: Tonchev, N.S. Statistical Mechanics of Thermal Fluctuations of Nearly Spherical Membranes: the Influence of Bending and Stretching Elasticities.2021. Physics of Particles and Nuclei

Here, Z[H(u; s)] is the partition function of the temperature dependent ”Hamiltonian” H(u; s) = Hc(u) + s β □ □ 1 8π nXmax n≥2 Xn m=−n (n + 2)(n − 1)(u m n) 2 − ∆ □ □, **(22)** of the system.

Цитирана публикация: Pavlic J.I., Genova J., Popkirov G., Kralj-Iglic V., Iglic A., Mitov M.D. Mechanoformation of neutral giant phospholipid vesicles in high ionic strength solution(2011) Chemistry and Physics of Lipids, 164 (8) , pp. 727-731.

Цитираща публикация: Méléard, P., Pott, T. Overview of a Quest for Bending Elasticity Measurement. Advances in Planar Lipid Bilayers and Liposomes. 2013. 17, pp. 55-75

One peculiar method developed by Mitov and colleagues is an ingenious technique where sound waves generated by a loudspeaker are used to mechanically agitate phospholipid bilayers **[35]**

Цитирана публикация: P.B. Santhosh, S. Penic, J. Genova, A. Iglic, V. Kralj-Iglic, N.P. Ulrih, A study on the interaction of nanoparticles with lipid membranes and their

influence on membrane fluidity. J. Phys. Conf. Ser. 398 (2012) 012034, http://dx.doi.org/10.1088/1742- 6596/398/1/012034.

Цитираща публикация: Chamati, H. Theory of Phase Transitions. From Magnets to Biomembranes. Advances in Planar Lipid Bilayers and Liposomes. 2013. 17, pp. 237-285

For small concentrations, the critical behavior is similar to its "pure" counterpart, but takes place at a different critical temperature, which depends upon the impurity concentration. This statement was proved experimentally by adding metallic nanoparticles to phospholipids **[186].**

Цитирана публикация: J. Genova, A. Zheliaskova, V. Vitkova, M.D. Mitov, Nanometer-scale optical imaging of collagen fibers using gold nanoparticles, Journal of Optoelectronics and Advanced Materials 11 (9) (2009) 1222–1225.

Цитираща публикация: Montgomery, P.C., Serio, B., Anstotz, F., Montaner, D. Far field optical nanoscopy: How far can you go in nanometric characterization without resolving all the details? 2013. Applied Surface Science. 281, pp. 89-95

A more recent application of phase contrast microscopy in nanocharacterization, is in the measurement of the elastic properties of lipid membranes through the study of thermal shape fluctuations of giant vesicles **[11].**

Цитираща публикация: Montgomery, P.C., Montaner, D., Anstotz, F., Serio, B. Wide field nanometric materials analysis by diffraction limited far field optical nanoscopy. 2012. Journal of Physics: Conference Series. 398(1),012001

The strobed images (4 µs pulse duration) in figure 4 taken at intervals of 1 s show clearly such fluctuations. Strobing from 0.1 to 1 MHz is possible. The system has been used to successfully estimate the friction between the monolayers comprising the bilayer of the membrane, as well as the bending elasticity modulus of the blocked exchange of molecules between the monolayers **[9]**.

Цитирана публикация: Genova J., Zheliaskova A., Mitov M.D. Influence of carbohydrates on the elasticity of SOPC membrane. (2008) Comptes Rendus de L'Academie Bulgare des Sciences, 61 (7), 879-884.

Цитираща публикация: Demé, B., Zemb, T. Hydration forces between bilayers in the presence of dissolved or surface-linked sugars 2011 Current Opinion in Colloid and Interface Science 16(6), pp. 584-591

Using optical analysis of fluctuations, Genova et al. have shown that apparent liposome fluctuations and hence intrinsic bilayer rigidity of SOPC vesicles does not decrease by more than 40%, decaying from 25 kT to 15 kT in the presence of mono and di-saccharides up to 20% in weight **[37]**.

Цитирана публикация: Vitkova, J. Genova and I. Bivas, "Permeability and Hidden Area of Lipid Bilayers", ***Eur. Biophys. J.,*** **33 (8), pp. 706-714 (2004)**

Цитираща публикация:
Wataru Shinoda, Permeability across lipid membranes, Biochimica et Biophysica Acta, April 2016, DOI: 10.1016/j.bbamem.2016.03.032;
"…Additionally, no pore formation was noted in the range of stretched membrane area examined, consistent with experimental observations [62]."
[62] V. Vitkova, J. Genova, I. Bivas, **Permeability and the hidden area of lipid bilayers** Eur. Biophys. J., 33 (8) (2004), pp. 706-714

Цитирана публикация: Vitkova, J. Genova, M.D. Mitov, and I. Bivas, "Sugars in the aqueous phase change the mechanical properties of lipid mono- and bilayers", ***Mol. Cryst. Liq. Cryst.*** **449, pp. 95–106 (2006)**

Цитираща публикация:
Sergey A. Akimov, Pavel E. Volynsky, Timur R. Galimzyanov, Peter I. Kuzmin, Konstantin V. Pavlov, Oleg V. Batishchev, Pore formation in lipid membrane I: Continuous reversible trajectory from intact bilayer through hydrophobic defect to transversal pore, Scientific Reports 7, Article number: 12152 (2017), doi:10.1038/s41598-017-12127-7; https://www.nature.com/articles/s41598-017-12127-7
"… It is shown that the presence of 200 mM of sugar in the bathing solutions can cause a decrease of membrane splay rigidity by a factor of two or more 55; such concentrations are characteristic for experiments with GUVs."
55. Vitkova, V., Genova, J., Mitov, M. D. & Bivas, I. Sugars in the aqueous phase change the mechanical properties of lipid mono- and bilayers. *Molecular Crystals and Liquid Crystals* **449**, 95–106 (2006).