# Thomas Heimburg

List of Publications by Year
in descending order

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| 112 | 6,154 | 57631 | 74018 |
|---|---|---|---|
| papers | citations | 44 h-index | 75 g-index |

| 119 | 119 | 119 | 4879 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Effect of Sodium Chloride on a Lipid Bilayer. Biophysical Journal, 2003, 85, 1647-1655. | 0.2 | 489 |
| 2 | On soliton propagation in biomembranes and nerves. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 9790-9795. | 3.3 | 449 |
| 3 | Mechanical aspects of membrane thermodynamics. Estimation of the mechanical properties of lipid membranes close to the chain melting transition from calorimetry. Biochimica Et Biophysica Acta - Biomembranes, 1998, 1415, 147-162. | 1.4 | 264 |
| 4 | A Model for the Lipid Pretransition: Coupling of Ripple Formation with the Chain-Melting Transition. Biophysical Journal, 2000, 78, 1154-1165. | 0.2 | 228 |
| 5 | The Temperature Dependence of Lipid Membrane Permeability, its Quantized Nature, and the Influence of Anesthetics. Biophysical Journal, 2009, 96, 4581-4591. | 0.2 | 187 |
| 6 | Investigation of secondary and tertiary structural changes of cytochrome c in complexes with anionic lipids using amide hydrogen exchange measurements: an FTIR study. Biophysical Journal, 1993, 65, 2408-2417. | 0.2 | 147 |
| 7 | Protein surface-distribution and protein-protein interactions in the binding of peripheral proteins to charged lipid membranes. Biophysical Journal, 1995, 68, 536-546. | 0.2 | 142 |
| 8 | Lipid ion channels. Biophysical Chemistry, 2010, 150, 2-22. | 1.5 | 136 |
| 9 | Protein reconstitution into freestanding planar lipid membranes for electrophysiological characterization. Nature Protocols, 2015, 10, 188-198. | 5.5 | 134 |
| 10 | The Thermodynamics of General Anesthesia. Biophysical Journal, 2007, 92, 3159-3165. | 0.2 | 130 |
| 11 | Towards a thermodynamic theory of nerve pulse propagation. Progress in Neurobiology, 2009, 88, 104-113. | 2.8 | 129 |
| 12 | Binding of Peripheral Proteins to Mixed Lipid Membranes: Effect of Lipid Demixing upon Binding. Biophysical Journal, 1999, 76, 2575-2586. | 0.2 | 124 |
| 13 | Network formation of lipid membranes: Triggering structural transitions by chain melting. Proceedings of the National Academy of Sciences of the United States of America, 1999, 96, 14312-14317. | 3.3 | 117 |
| 14 | Enthalpy and Volume Changes in Lipid Membranes. I. The Proportionality of Heat and Volume Changes in the Lipid Melting Transition and Its Implication for the Elastic Constants. Journal of Physical Chemistry B, 2001, 105, 7353-7360. | 1.2 | 113 |
| 15 | Peripheral and Integral Binding of Cytochromecto Phospholipids Vesicles. Journal of Physical Chemistry B, 2004, 108, 3871-3878. | 1.2 | 102 |
| 16 | Cytochrome c-lipid interactions studied by resonance Raman and phosphorus-31 NMR spectroscopy. Correlation between the conformational changes of the protein and the lipid bilayer. Biochemistry, 1991, 30, 9084-9089. | 1.2 | 99 |
| 17 | Thermotropic behavior of dimyristoylphosphatidylglycerol and its interaction with cytochrome c. Biochemistry, 1994, 33, 9477-9488. | 1.2 | 99 |
| 18 | Diffusion in Two-Component Lipid Membranesâ€"A Fluorescence Correlation Spectroscopy and Monte Carlo Simulation Study. Biophysical Journal, 2005, 88, 317-333. | 0.2 | 97 |

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|---|---|---|---|
| 19 | ON THE ACTION POTENTIAL AS A PROPAGATING DENSITY PULSE AND THE ROLE OF ANESTHETICS. Biophysical Reviews and Letters, 2007, 02, 57-78. | 0.9 | 93 |
| 20 | Insertion and Pore Formation Driven by Adsorption of Proteins Onto Lipid Bilayer Membraneâ€“Water Interfaces. Biophysical Journal, 2001, 81, 2458-2472. | 0.2 | 92 |
| 21 | The Capacitance and Electromechanical Coupling of Lipid Membranes Close to Transitions: The Effect of Electrostriction. Biophysical Journal, 2012, 103, 918-929. | 0.2 | 92 |
| 22 | Relaxation Kinetics of Lipid Membranes and Its Relation to the Heat Capacity. Biophysical Journal, 2002, 82, 299-309. | 0.2 | 91 |
| 23 | Binary phase diagram of hydrated dimyristoylglycerol-dimyristoylphosphatidylcholine mixtures. Biophysical Journal, 1992, 63, 1369-1378. | 0.2 | 84 |
| 24 | Evidence for a common structure for a class of membrane channels. FEBS Journal, 1993, 213, 21-30. | 0.2 | 82 |
| 25 | Cholesterol-Induced Variations in the Volume and Enthalpy Fluctuations of Lipid Bilayers. Biophysical Journal, 1998, 75, 264-271. | 0.2 | 80 |
| 26 | The Influence of Vesicle Size and Composition on Î±-Synuclein Structure and Stability. Biophysical Journal, 2009, 96, 2857-2870. | 0.2 | 79 |
| 27 | Conformational changes in cytochrome c and cytochrome oxidase upon complex formation: a resonance Raman study. Biochemistry, 1990, 29, 1661-1668. | 1.2 | 77 |
| 28 | Phase-State Dependent Current Fluctuations in Pure Lipid Membranes. Biophysical Journal, 2009, 96, 4592-4597. | 0.2 | 72 |
| 29 | Specific Recognition of Coiled Coils by Infrared Spectroscopy:â€‰ Analysis of the Three Structural Domains of Type III Intermediate Filament Proteins. Biochemistry, 1996, 35, 1375-1382. | 1.2 | 71 |
| 30 | Structure of the NCoA-1/SRC-1 PAS-B Domain Bound to the LXXLL Motif of the STAT6 Transactivation Domain. Journal of Molecular Biology, 2004, 336, 319-329. | 2.0 | 69 |
| 31 | Analyzing Heat Capacity Profiles of Peptide-Containing Membranes: Cluster Formation of Gramicidin A. Biophysical Journal, 2003, 84, 2427-2439. | 0.2 | 68 |
| 32 | Quantitative conformational analysis of cytochromec bound to phospholipid vesicles studied by resonance Raman spectroscopy. European Biophysics Journal, 1990, 18, 193-201. | 1.2 | 67 |
| 33 | FTIR-Spectroscopy of Multistranded Coiled Coil Proteins. Biochemistry, 1999, 38, 12727-12734. | 1.2 | 67 |
| 34 | The stability of solitons in biomembranes and nerves. European Physical Journal E, 2011, 34, 57. | 0.7 | 66 |
| 35 | A Monte Carlo simulation study of protein-induced heat capacity changes and lipid-induced protein clustering. Biophysical Journal, 1996, 70, 84-96. | 0.2 | 61 |
| 36 | Calcium electroporation and electrochemotherapy for cancer treatment: Importance of cell membrane composition investigated by lipidomics, calorimetry and in vitro efficacy. Scientific Reports, 2019, 9, 4758. | 1.6 | 56 |

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| 37 | How Anesthetics, Neurotransmitters, and Antibiotics Influence the Relaxation Processes in Lipid Membranes. Journal of Physical Chemistry B, 2007, 111, 13858-13866. | 1.2 | 53 |
| 38 | Lipid Ion Channels and the Role of Proteins. Accounts of Chemical Research, 2013, 46, 2966-2976. | 7.6 | 52 |
| 39 | Solitary electromechanical pulses in lobster neurons. Biophysical Chemistry, 2016, 216, 51-59. | 1.5 | 52 |
| 40 | Non-invasive detection of animal nerve impulses with an atomic magnetometer operating near quantum limited sensitivity. Scientific Reports, 2016, 6, 29638. | 1.6 | 52 |
| 41 | Histogram method to obtain heat capacities in lipid monolayers, curved bilayers, and membranes containing peptides. Physical Review E, 2001, 63, 041914. | 0.8 | 51 |
| 42 | Compressibility of Lipid Mixtures Studied by Calorimetry and Ultrasonic Velocity Measurements. Journal of Physical Chemistry B, 2002, 106, 6581-6586. | 1.2 | 51 |
| 43 | Influence of Lipid Heterogeneity and Phase Behavior on Phospholipase A2 Action at the Single Molecule Level. Biophysical Journal, 2010, 98, 1873-1882. | 0.2 | 48 |
| 44 | Mechano-capacitive properties of polarized membranes. Soft Matter, 2015, 11, 7899-7910. | 1.2 | 48 |
| 45 | Heat capacity behavior in the critical region of the ionic binary mixture ethylammonium nitrateâ€“n-octanol. Physical Review E, 2000, 62, 4963-4967. | 0.8 | 45 |
| 46 | Diffusion and Partitioning of Fluorescent Lipid Probes in Phospholipid Monolayers. Biophysical Journal, 2009, 96, 4598-4609. | 0.2 | 43 |
| 47 | Periodic solutions and refractory periods in the soliton theory for nerves and the locust femoral nerve. Biophysical Chemistry, 2011, 153, 159-167. | 1.5 | 41 |
| 48 | Integration of a K+ Channel-Associated Peptide in a Lipid Bilayer: Conformation, Lipid-Protein Interactions, and Rotational Diffusion. Biochemistry, 1995, 34, 3893-3898. | 1.2 | 40 |
| 49 | The Thermodynamics of General and Local Anesthesia. Biophysical Journal, 2014, 106, 2143-2156. | 0.2 | 36 |
| 50 | Voltage-Gated Lipid Ion Channels. PLoS ONE, 2013, 8, e65707. | 1.1 | 35 |
| 51 | Critical behavior of 2,6-dimethylpyridine-water: Measurements of specific heat, dynamic light scattering, and shear viscosity. Journal of Chemical Physics, 2006, 124, 144517. | 1.2 | 34 |
| 52 | Direct Visualization of the Lateral Structure of Porcine Brain Cerebrosides/POPC Mixtures in Presence and Absence of Cholesterol. Biophysical Journal, 2009, 97, 142-154. | 0.2 | 34 |
| 53 | Comparing ion conductance recordings of synthetic lipid bilayers with cell membranes containing TRP channels. Biochimica Et Biophysica Acta - Biomembranes, 2012, 1818, 1123-1134. | 1.4 | 34 |
| 54 | 2 H NMR study of cuticular wax isolated from Hordeum vulgare L. leaves: identification of amorphous and crystalline wax phases. European Biophysics Journal, 1997, 26, 371-380. | 1.2 | 33 |

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| 55 | Peptides from the Conserved Ends of the Rod Domain of Desmin Disassemble Intermediate Filaments and Reveal Unexpected Structural Features: A Circular Dichroism, Fourier Transform Infrared, and Electron Microscopic Study. Journal of Structural Biology, 1993, 110, 205-214. | 1.3 | 32 |
| 56 | Fourier-transform infrared spectroscopic studies on avidin secondary structure and complexation with biotin and biotin-lipid assemblies. Biophysical Journal, 1996, 71, 840-847. | 0.2 | 32 |
| 57 | Melting of individual lipid components in binary lipid mixtures studied by FTIR spectroscopy, DSC and Monte Carlo simulations. Biochimica Et Biophysica Acta - Biomembranes, 2009, 1788, 600-607. | 1.4 | 31 |
| 58 | The thermodynamics of lipid ion channel formation in the absence and presence of anesthetics. BLM experiments and simulations. Soft Matter, 2009, 5, 3319. | 1.2 | 31 |
| 59 | Ion-channel-like behavior in lipid bilayer membranes at the melting transition. Physical Review E, 2010, 81, 061925. | 0.8 | 31 |
| 60 | Phase transition from a gel to a fluid phase of cubic symmetry in dimyristoylphosphatidylcholine/myristic acid (1:2, mol/mol) bilayers. Biochimica Et Biophysica Acta - Biomembranes, 1990, 1025, 77-81. | 1.4 | 30 |
| 61 | Melting transitions in biomembranes. Biochimica Et Biophysica Acta - Biomembranes, 2019, 1861, 183026. | 1.4 | 29 |
| 62 | Domain Size and Fluctuations at Domain Interfaces in Lipid Mixtures. Macromolecular Symposia, 2005, 219, 85-96. | 0.4 | 28 |
| 63 | Penetration of Action Potentials During Collision in the Median and Lateral Giant Axons of Invertebrates. Physical Review X, 2014, 4, . | 2.8 | 28 |
| 64 | A Comparison of the Hodgkinâ€“Huxley Model and the Soliton Theory for the Action Potential in Nerves. Behavior Research Methods, 2012, , 275-299. | 2.3 | 27 |
| 65 | Defect formation of lytic peptides in lipid membranes and their influence on the thermodynamic properties of the pore environment. Biochimica Et Biophysica Acta - Biomembranes, 2007, 1768, 236-245. | 1.4 | 26 |
| 66 | Characterization of the Secondary Structure and Assembly of the Transmembrane Domains of Trypsinized Na,K-ATPase by Fourier Transform Infrared Spectroscopy. Journal of Biological Chemistry, 1997, 272, 25685-25692. | 1.6 | 23 |
| 67 | Monte Carlo simulations of lipid bilayers and lipid protein interactions in the light of recent experiments. Current Opinion in Colloid and Interface Science, 2000, 5, 224-231. | 3.4 | 23 |
| 68 | The Effect of the Nonlinearity of the Response of Lipid Membranes to Voltage Perturbations on the Interpretation of Their Electrical Properties. A New Theoretical Description. Membranes, 2015, 5, 495-512. | 1.4 | 22 |
| 69 | Is a constant low-entropy process at the root of glycolytic oscillations?. Journal of Biological Physics, 2018, 44, 419-431. | 0.7 | 19 |
| 70 | Linear nonequilibrium thermodynamics of reversible periodic processes and chemical oscillations. Physical Chemistry Chemical Physics, 2017, 19, 17331-17341. | 1.3 | 18 |
| 71 | Thermodynamics of the Interaction of Proteins with Lipid Membranes. , 1996, , 405-462. | | 18 |
| 72 | The free energy of biomembrane and nerve excitation and the role of anesthetics. Biochimica Et Biophysica Acta - Biomembranes, 2018, 1860, 2145-2153. | 1.4 | 17 |

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| 73 | Lipid membrane domain formation and alamethicin aggregation studied by calorimetry, sound velocity measurements, and atomic force microscopy. Biophysical Chemistry, 2008, 134, 168-177. | 1.5 | 16 |
| 74 | Rhodopsin mobility, structure, and lipid-protein interaction in squid photoreceptor membranes. Biochemistry, 1993, 32, 3298-3305. | 1.2 | 15 |
| 75 | The Effect of Lipid Demixing on the Electrostatic Interaction of Planar Membranes across a Salt Solution. Biophysical Journal, 2003, 84, 3730-3742. | 0.2 | 15 |
| 76 | Thermodynamics of lipid multi-lamellar vesicles in presence of sterols at high hydrostatic pressure. Scientific Reports, 2017, 7, 15339. | 1.6 | 12 |
| 77 | The important consequences of the reversible heat production in nerves and the adiabaticity of the action potential. Progress in Biophysics and Molecular Biology, 2021, 162, 26-40. | 1.4 | 12 |
| 78 | Coupling of chain melting and bilayer structure: domains, rafts, elasticity and fusion. Membrane Science and Technology, 2003, 7, 269-293. | 0.5 | 11 |
| 79 | Fluctuations of systems in finite heat reservoirs with applications to phase transitions in lipid membranes. Journal of Chemical Physics, 2013, 139, 125101. | 1.2 | 10 |
| 80 | Phase Transitions in Biological Membranes. Series in Bioengineering, 2019, , 39-61. | 0.3 | 9 |
| 81 | The thermodynamic soliton theory of the nervous impulse and possible medical implications. Progress in Biophysics and Molecular Biology, 2022, 173, 24-35. | 1.4 | 9 |
| 82 | Electromechanical properties of biomembranes and nerves. Journal of Physics: Conference Series, 2014, 558, 012018. | 0.3 | 8 |
| 83 | Low-Frequency Sound Propagation in Lipid Membranes. Behavior Research Methods, 2012, , 51-74. | 2.3 | 7 |
| 84 | Mechano-capacitive properties of polarized membranes and the application to conductance measurements of lipid membrane patches. Journal of Physics: Conference Series, 2017, 780, 012001. | 0.3 | 6 |
| 85 | Characterization of the orientation and ordering of fatty acid pyrrolidine nitroxyls in lipid bilayers. The Journal of Physical Chemistry, 1991, 95, 1950-1956. | 2.9 | 5 |
| 86 | Comment on Tamagawa and Ikedaâ€™s reinterpretation of the Goldmanâ€“Hodgkinâ€“Katz equation. European Biophysics Journal, 2018, 47, 865-867. | 1.2 | 5 |
| 87 | Non-linear Conductance, Rectification, and Mechanosensitive Channel Formation of Lipid Membranes. Frontiers in Cell and Developmental Biology, 2020, 8, 592520. | 1.8 | 5 |
| 88 | Themed issue: membrane biophysics. Soft Matter, 2009, 5, 3145. | 1.2 | 3 |
| 89 | Critical behavior of polystyrene-cyclohexane: Heat capacity and mass density. Physical Review E, 2010, 82, 061502. | 0.8 | 2 |
| 90 | Sound Propagation in Lipid Membranes. Biophysical Journal, 2013, 104, 549a. | 0.2 | 2 |

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| 91 | Variations in interpulse interval of double action potentials during propagation in single neurons. Synapse, 2013, 67, 68-78. | 0.6 | 2 |
| 92 | Solitary Electromechanical Pulses in Lobster Neurons. Biophysical Journal, 2016, 110, 150a. | 0.2 | 2 |
| 93 | Comment on â€œOn biological signalingâ€•by G. Nimtz and H. Aichmann, Z. Naturforsch. 75a: 507â€“509, 2020. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 2020, 75, 933-935. | 0.7 | 2 |
| 94 | Structural Changes in DMPG upon changes of ionic strength and pH - What to learn from SANS, DSC, FCS, Flourescence Microscopy, FTIR and Viscosity Measurements. Biophysical Journal, 2009, 96, 458a. | 0.2 | 1 |
| 95 | Soliton Collision in Biomembranes and Nerves- A Stability Study. Mathematics in Industry, 2012, , 205-212. | 0.1 | 1 |
| 96 | Action Potential Collision in Nerves. Biophysical Journal, 2014, 106, 794a. | 0.2 | 1 |
| 97 | Electrical Asymmetries in Polarized Membranes. Biophysical Journal, 2015, 108, 240a. | 0.2 | 1 |
| 98 | Effect of Anesthetics on Action Potential Propagation. Biophysical Journal, 2016, 110, 150a. | 0.2 | 1 |
| 99 | Reply to â€œComment on â€˜Penetration of Action Potentials During Collision in the Median and Lateral Giant Axons of Invertebratesâ€â€™. Physical Review X, 2017, 7, . | 2.8 | 1 |
| 100 | The Temperature Dependence And Quantized Nature Of The Lipid Membrane Permeability. Biophysical Journal, 2009, 96, 160a. | 0.2 | 0 |
| 101 | The Physics of Nerves and Lipid Membrane Channels. Biophysical Journal, 2011, 100, 4a. | 0.2 | 0 |
| 102 | Temperature and Voltage Dependence of Lipid Membrane Capacitance and the Corresponding Capacitive Currents. Biophysical Journal, 2012, 102, 28a. | 0.2 | 0 |
| 103 | The Thermodynamics of General and Local Anesthesia. Biophysical Journal, 2013, 104, 241a-242a. | 0.2 | 0 |
| 104 | Mechanical Signals in Nerves during Action Potential Propagation. Biophysical Journal, 2013, 104, 78a. | 0.2 | 0 |
| 105 | Voltage Gated Lipid Ion Channels. Biophysical Journal, 2014, 106, 747a. | 0.2 | 0 |
| 106 | Lipid Membranes as Non-Linear Capacitors. Biophysical Journal, 2014, 106, 709a. | 0.2 | 0 |
| 107 | Are Local Anesthetics and General Anesthetics Different?. Biophysical Journal, 2014, 106, 705a. | 0.2 | 0 |
| 108 | Bidirectional Propagation of Action Potential in Giant Axons of Nerve Bundles from Homarus Americanus. Biophysical Journal, 2015, 108, 152a. | 0.2 | 0 |

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| 109 | Penetration of Action Potentials during Collision in the Medial Giant Axon of Invertebrates. Biophysical Journal, 2015, 108, 207a. | 0.2 | 0 |
| 110 | Does the Meyer-Overton Correlation Need to be Modified. Biophysical Journal, 2015, 108, 544a. | 0.2 | 0 |
| 111 | The Nonlinear Response of Lipid Membranes to Voltage Perturbations as an Alternative Explanation of Electrophysiological Data. Biophysical Journal, 2016, 110, 244a-245a. | 0.2 | 0 |
| 112 | Binding of cytochrome c to phospholipid vesicles and the perturbation of the liposome and protein structure. , 1999, , 377-378. | | 0 |