

# Sunil Nath

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

57  
papers

830  
citations

17  
h-index

25  
g-index

57  
ext. papers

883  
ext. citations

3.7  
avg, IF

5.44  
L-index

#	Paper	IF	Citations
57	Electrophysiological Experiments Revalidate the Two-ion Theory of Energy Coupling and ATP Synthesis.. <i>Function</i> , <b>2022</b> , 3, zqac004	6.1	1
56	Novel molecular insights into ATP synthesis in oxidative phosphorylation based on the principle of least action. <i>Chemical Physics Letters</i> , <b>2022</b> , 796, 139561	2.5	2
55	Network representation and analysis of energy coupling mechanisms in cellular metabolism by a graph-theoretical approach.. <i>Theory in Biosciences</i> , <b>2022</b> ,	1.3	2
54	Supercomplex supercomplexes: Raison d'être and functional significance of supramolecular organization in oxidative phosphorylation. <i>Biomolecular Concepts</i> , <b>2022</b> , 13, 272-288	3.7	1
53	Energy landscapes and dynamics of ion translocation through membrane transporters: a meeting ground for physics, chemistry, and biology. <i>Journal of Biological Physics</i> , <b>2021</b> , 47, 401-433	1.6	5
52	Coupling mechanisms in ATP synthesis: Rejoinder to "Response to molecular-level understanding of biological energy coupling and transduction". <i>Biophysical Chemistry</i> , <b>2021</b> , 272, 106579	3.5	3
51	Molecular-level understanding of biological energy coupling and transduction: Response to "Chemiosmotic misunderstandings". <i>Biophysical Chemistry</i> , <b>2021</b> , 268, 106496	3.5	3
50	Charge transfer across biomembranes: A solution to the conundrum of high desolvation free energy penalty in ion transport. <i>Biophysical Chemistry</i> , <b>2021</b> , 275, 106604	3.5	2
49	Time-Resolved Oxygen Exchange Measurements Offer Novel Mechanistic Insights into Enzyme-Catalyzed ATP Synthesis during Photophosphorylation. <i>Journal of Physical Chemistry B</i> , <b>2020</b> , 124, 5139-5148	3.4	8
48	A Novel Conceptual Model for the Dual Role of FOF1-ATP Synthase in Cell Life and Cell Death. <i>Biomolecular Concepts</i> , <b>2020</b> , 11, 143-152	3.7	9
47	Consolidation of Nath's torsional mechanism of ATP synthesis and two-ion theory of energy coupling in oxidative phosphorylation and photophosphorylation. <i>Biophysical Chemistry</i> , <b>2020</b> , 257, 106279	3.5	8
46	Entropy Production and Its Application to the Coupled Nonequilibrium Processes of ATP Synthesis. <i>Entropy</i> , <b>2019</b> , 21,	2.8	9
45	Integration of demand and supply sides in the ATP energy economics of cells. <i>Biophysical Chemistry</i> , <b>2019</b> , 252, 106208	3.5	8
44	Coupling in ATP synthesis: Test of thermodynamic consistency and formulation in terms of the principle of least action. <i>Chemical Physics Letters</i> , <b>2019</b> , 723, 118-122	2.5	9
43	Modern theory of energy coupling and ATP synthesis. Violation of Gauss's law by the chemiosmotic theory and validation of the two-ion theory. <i>Biophysical Chemistry</i> , <b>2019</b> , 255, 106271	3.5	10
42	Interpretation of the mechanism of action of antituberculosis drug bedaquiline based on a novel two-ion theory of energy coupling in ATP synthesis. <i>Bioengineering and Translational Medicine</i> , <b>2019</b> , 4, 164-170	14.8	9
41	Prediction of surface tension of highly nonideal aqueous-organic mixtures as a function of composition by a partitioning model between surface and bulk phases and use of partial molar surface areas. <i>Journal of Molecular Liquids</i> , <b>2018</b> , 262, 255-260	6	7

40	Optimality principle for the coupled chemical reactions of ATP synthesis and its molecular interpretation. <i>Chemical Physics Letters</i> , <b>2018</b> , 699, 212-217	2.5	17
39	Molecular mechanistic insights into coupling of ion transport to ATP synthesis. <i>Biophysical Chemistry</i> , <b>2018</b> , 241, 20-26	3.5	11
38	Molecular mechanistic insights into uncoupling of ion transport from ATP synthesis. <i>Biophysical Chemistry</i> , <b>2018</b> , 242, 15-21	3.5	17
37	Analysis of molecular mechanisms of ATP synthesis from the standpoint of the principle of electrical neutrality. <i>Biophysical Chemistry</i> , <b>2017</b> , 224, 49-58	3.5	21
36	Two-ion theory of energy coupling in ATP synthesis rectifies a fundamental flaw in the governing equations of the chemiosmotic theory. <i>Biophysical Chemistry</i> , <b>2017</b> , 230, 45-52	3.5	28
35	The thermodynamic efficiency of ATP synthesis in oxidative phosphorylation. <i>Biophysical Chemistry</i> , <b>2016</b> , 219, 69-74	3.5	28
34	Maximum limit to the number of myosin II motors participating in processive sliding of actin. <i>Scientific Reports</i> , <b>2016</b> , 6, 32043	4.9	6
33	Oxidative phosphorylation revisited. <i>Biotechnology and Bioengineering</i> , <b>2015</b> , 112, 429-37	4.9	46
32	Product Recovery from the Cultures <b>2015</b> , 379-392		
31	Purification of Bio-Products <b>2015</b> , 393-408		
30	New perspectives on photosynthetic phosphorylation in the light of a torsional mechanism of energy transduction and ATP synthesis. <i>Journal of Bioenergetics and Biomembranes</i> , <b>2011</b> , 43, 601-10	3.7	4
29	Beyond the chemiosmotic theory: analysis of key fundamental aspects of energy coupling in oxidative phosphorylation in the light of a torsional mechanism of energy transduction and ATP synthesis--invited review part 2. <i>Journal of Bioenergetics and Biomembranes</i> , <b>2010</b> , 42, 301-9	3.7	31
28	Beyond the chemiosmotic theory: analysis of key fundamental aspects of energy coupling in oxidative phosphorylation in the light of a torsional mechanism of energy transduction and ATP synthesis--invited review part 1. <i>Journal of Bioenergetics and Biomembranes</i> , <b>2010</b> , 42, 293-300	3.7	28
27	Energy transfer from adenosine triphosphate: quantitative analysis and mechanistic insights. <i>Journal of Physical Chemistry B</i> , <b>2009</b> , 113, 1533-7	3.4	32
26	The new unified theory of ATP synthesis/hydrolysis and muscle contraction, its manifold fundamental consequences and mechanistic implications and its applications in health and disease. <i>International Journal of Molecular Sciences</i> , <b>2008</b> , 9, 1784-840	6.3	33
25	A novel systems biology/engineering approach solves fundamental molecular mechanistic problems in bioenergetics and motility. <i>Process Biochemistry</i> , <b>2006</b> , 41, 2218-2235	4.8	13
24	The torsional mechanism of energy transduction and ATP synthesis as a breakthrough in our understanding of the mechanistic, kinetic and thermodynamic details. <i>Thermochimica Acta</i> , <b>2004</b> , 422, 5-17	2.9	27
23	Molecular mechanisms of energy transduction in cells: engineering applications and biological implications. <i>Advances in Biochemical Engineering/Biotechnology</i> , <b>2003</b> , 85, 125-80	1.7	12

22	The detailed molecular mechanism of ATP synthesis in the F <sub>0</sub> portion of ATP synthase reveals a non-chemiosmotic mode of energy coupling. <i>Thermochimica Acta</i> , <b>2002</b> , 394, 89-98	2.9	20
21	The molecular mechanism of ATP synthesis by F <sub>1</sub> F <sub>0</sub> -ATP synthase: a scrutiny of the major possibilities. <i>Advances in Biochemical Engineering/Biotechnology</i> , <b>2002</b> , 74, 65-98	1.7	14
20	Catalysis by ATP synthase: mechanistic, kinetic and thermodynamic characteristics. <i>Thermochimica Acta</i> , <b>2001</b> , 378, 35-44	2.9	15
19	Estimation of proteins in the presence of polyethylenimine. <i>Biotechnology Letters</i> , <b>2000</b> , 22, 927-929	3	5
18	Kinetic modeling of ATP synthesis by ATP synthase and its mechanistic implications. <i>Biochemical and Biophysical Research Communications</i> , <b>2000</b> , 272, 629-33	3.4	23
17	Kinetic model of ATP synthase: pH dependence of the rate of ATP synthesis. <i>FEBS Letters</i> , <b>2000</b> , 476, 113-7	3.8	24
16	A SYSTEMATIC APPROACH FOR INVESTIGATION OF SPRAY DRYING PROCESSES. <i>Drying Technology</i> , <b>1998</b> , 16, 1173-1193	2.6	64
15	A thermodynamic principle for the coupled bioenergetic processes of ATP synthesis. <i>Pure and Applied Chemistry</i> , <b>1998</b> , 70, 639-644	2.1	28
14	Mass transfer and biochemical reaction in immobilized cell packed bed reactors: Correlation of experiment with theory. <i>Journal of Chemical Technology and Biotechnology</i> , <b>1996</b> , 66, 286-292	3.5	32
13	A rapid method for determining kinetic parameters of enzymes exhibiting nonlinear thermal inactivation behavior. <i>Biotechnology and Bioengineering</i> , <b>1996</b> , 49, 106-10	4.9	4
12	Separation of enzymes from microorganism crude extracts by free-flow zone electrophoresis. <i>Biotechnology and Bioengineering</i> , <b>1996</b> , 51, 15-22	4.9	5
11	Thermostability of alcohol dehydrogenase in the presence of sucrose. <i>Biotechnology Letters</i> , <b>1996</b> , 10, 179-182		2
10	A rapid method for determining kinetic parameters of enzymes exhibiting nonlinear thermal inactivation behavior <b>1996</b> , 49, 106		15
9	Separation of enzymes from microorganism crude extracts by free-flow zone electrophoresis <b>1996</b> , 51, 15		9
8	Turbidimetric Titration Study of the Interaction of Proteins with Acrylic Polyampholytes. <i>Biotechnology Progress</i> , <b>1995</b> , 11, 99-103	2.8	29
7	Transient electric birefringence of flexible polymers: Orientation and relaxation dynamics. <i>Journal of Chemical Physics</i> , <b>1995</b> , 103, 3212-3219	3.9	9
6	Complexation behavior of proteins with polyelectrolytes and random acrylic polyampholytes using turbidimetric titration. <i>Journal of Chemical Technology and Biotechnology</i> , <b>1995</b> , 62, 295-300	3.5	15
5	Surface Tension of Nonelectrolyte Solutions. <i>Journal of Colloid and Interface Science</i> , <b>1993</b> , 156, 498-503	9.3	16

4	Application of continuous zone electrophoresis to preparative separation of proteins. <i>Biotechnology and Bioengineering</i> , <b>1993</b> , 42, 829-35	4.9	16
3	Correlation of migration behavior in free-flow zone electrophoresis and electrophoretic titration curve. <i>Electrophoresis</i> , <b>1990</b> , 11, 612-6	3.6	12
2	Separation of enzymes from <i>Candida boidinii</i> crude extract by continuous flow zone electrophoresis. <i>Electrophoresis</i> , <b>1990</b> , 11, 937-41	3.6	15
1	Orientation and relaxation of nonlinear elastic dumbbells in electric fields: Modeling transient electric birefringence. <i>Journal of Chemical Physics</i> , <b>1988</b> , 89, 5943-5949	3.9	8