

# Arnab Majumdar

## List of Publications by Year in descending order

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39  
papers

1,700  
citations

270111

25  
h-index

371746

37  
g-index

39  
all docs

39  
docs citations

39  
times ranked

2157  
citing authors

#	ARTICLE	IF	CITATIONS
1	FLUCTUATIONS, NOISE AND SCALING IN THE CARDIO-PULMONARY SYSTEM. , 2022, , 269-293.		0
2	Tracking respiratory mechanics around natural breathing rates via variable ventilation. Scientific Reports, 2020, 10, 6722.	1.6	4
3	Network Approaches to the Mechanical Failure of Soft Tissues: Implications for Disease and Tissue Engineering. , 2016, , 417-437.		0
4	Changes in respiratory elastance after deep inspirations reflect surface film functionality in mice with acute lung injury. Journal of Applied Physiology, 2015, 119, 258-265.	1.2	6
5	Proteoglycans Maintain Lung Stability in an Elastase-Treated Mouse Model of Emphysema. American Journal of Respiratory Cell and Molecular Biology, 2014, 51, 26-33.	1.4	45
6	Mechanical failure, stress redistribution, elastase activity and binding site availability on elastin during the progression of emphysema. Pulmonary Pharmacology and Therapeutics, 2012, 25, 268-275.	1.1	33
7	Jamming dynamics of stretch-induced surfactant release by alveolar type II cells. Journal of Applied Physiology, 2012, 112, 824-831.	1.2	16
8	Structure–Function Relations in an Elastase-Induced Mouse Model of Emphysema. American Journal of Respiratory Cell and Molecular Biology, 2011, 45, 517-524.	1.4	57
9	Dynamics of enzymatic digestion of elastic fibers and networks under tension. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 9414-9419.	3.3	10
10	Linking Microscopic Spatial Patterns of Tissue Destruction in Emphysema to Macroscopic Decline in Stiffness Using a 3D Computational Model. PLoS Computational Biology, 2011, 7, e1001125.	1.5	39
11	Modeling the dynamics of airway constriction: effects of agonist transport and binding. Journal of Applied Physiology, 2010, 109, 553-563.	1.2	29
12	Mechanical Forces Regulate Elastase Activity and Binding Site Availability in Lung Elastin. Biophysical Journal, 2010, 99, 3076-3083.	0.2	49
13	A zipper network model of the failure mechanics of extracellular matrices. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 1081-1086.	3.3	33
14	Percolation in a network with long-range connections: Implications for cytoskeletal structure and function. Physica A: Statistical Mechanics and Its Applications, 2009, 388, 1521-1526.	1.2	8
15	Estimating the diameter of airways susceptible for collapse using crackle sound. Journal of Applied Physiology, 2009, 107, 1504-1512.	1.2	5
16	Three-dimensional measurement of alveolar airspace volumes in normal and emphysematous lungs using micro-CT. Journal of Applied Physiology, 2009, 107, 583-592.	1.2	62
17	Power-law creep behavior of a semiflexible chain. Physical Review E, 2008, 78, 041922.	0.8	12
18	Design of a new variable-ventilation method optimized for lung recruitment in mice. Journal of Applied Physiology, 2008, 104, 1329-1340.	1.2	43

#	ARTICLE	IF	CITATIONS
19	Linking Parenchymal Disease Progression to Changes in Lung Mechanical Function by Percolation. American Journal of Respiratory and Critical Care Medicine, 2007, 176, 617-623.	2.5	119
20	Differential effects of static and cyclic stretching during elastase digestion on the mechanical properties of extracellular matrices. Journal of Applied Physiology, 2007, 103, 803-811.	1.2	24
21	In silico modeling of interstitial lung mechanics: implications for disease development and repair. Drug Discovery Today: Disease Models, 2007, 4, 139-145.	1.2	26
22	Effects of reduced tidal volume ventilation on pulmonary function in mice before and after acute lung injury. Journal of Applied Physiology, 2007, 103, 1551-1559.	1.2	18
23	Quantitative characterization of airspace enlargement in emphysema. Journal of Applied Physiology, 2006, 100, 186-193.	1.2	111
24	Early Emphysema in the Tight Skin and Pallid Mice. American Journal of Respiratory Cell and Molecular Biology, 2006, 34, 688-694.	1.4	51
25	Viscoelastic and dynamic nonlinear properties of airway smooth muscle tissue: roles of mechanical force and the cytoskeleton. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2006, 290, L1227-L1237.	1.3	42
26	Dynamics of Prestressed Semiflexible Polymer Chains as a Model of Cell Rheology. Physical Review Letters, 2006, 97, 168101.	2.9	33
27	Mechanical interactions between collagen and proteoglycans: implications for the stability of lung tissue. Journal of Applied Physiology, 2005, 98, 672-679.	1.2	221
28	Crackles and instabilities during lung inflation. Physica A: Statistical Mechanics and Its Applications, 2005, 357, 18-26.	1.2	18
29	Risk of severe asthma episodes predicted from fluctuation analysis of airway function. Nature, 2005, 438, 667-670.	13.7	196
30	On the Role of Surface Tension in the Pathophysiology of Emphysema. American Journal of Respiratory and Critical Care Medicine, 2005, 171, 300-304.	2.5	32
31	Relating Airway Diameter Distributions to Regular Branching Asymmetry in the Lung. Physical Review Letters, 2005, 95, 168101.	2.9	50
32	Perimeter growth of a branched structure: Application to crackle sounds in the lung. Physical Review E, 2003, 68, 011909.	0.8	9
33	Fluid transport in branched structures with temporary closures: A model for quasistatic lung inflation. Physical Review E, 2003, 67, 031912.	0.8	9
34	FLUCTUATIONS, NOISE AND SCALING IN THE CARDIO-PULMONARY SYSTEM. Fluctuation and Noise Letters, 2003, 03, R1-R25.	1.0	31
35	Lung and alveolar wall elastic and hysteretic behavior in rats: effects of in vivo elastase treatment. Journal of Applied Physiology, 2003, 95, 1926-1936.	1.2	71
36	Dynamic instabilities in the inflating lung. Nature, 2002, 417, 809-811.	13.7	84

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37	Avalanche Dynamics of Crackle Sound in the Lung. Physical Review Letters, 2001, 87, 088101.	2.9	40
38	Distribution of time-headways in a particle-hopping model of vehicular traffic. Physical Review E, 1998, 58, 4012-4015.	0.8	26
39	Particle-hopping models of vehicular traffic: Distributions of distance headways and distance between jams. Physica A: Statistical Mechanics and Its Applications, 1997, 246, 471-486.	1.2	38