Abdul I Barakat

List of Publications by Year
in descending order

93 papers	3,886 citations	126708 33 h-index	133063 59 g-index
103 all docs	103 docs citations	103 times ranked	5700 citing authors

#	Article	IF	Citations
1	Luminal flow actuation generates coupled shear and strain in a microvessel-on-chip. Biofabrication, 2022, 14, 015003.	3.7	14
2	Distinct timing of neutrophil spreading and stiffening during phagocytosis. Biophysical Journal, 2022, , .	0.2	7
3	Topography-induced large-scale antiparallel collective migration in vascular endothelium. Nature Communications, 2022, 13, 2797.	5.8	8
4	A compact integrated microfluidic oxygenator with high gas exchange efficiency and compatibility for long-lasting endothelialization. Lab on A Chip, 2021, 21, 4791-4804.	3.1	14
5	Pericyte mechanics and mechanobiology. Journal of Cell Science, 2021, 134, .	1.2	28
6	Is there a universal mechanism of cell alignment in response to substrate topography?. Cytoskeleton, 2021, 78, 284-292.	1.0	25
7	3D Printing for Cardiovascular Applications: From End-to-End Processes to Emerging Developments. Annals of Biomedical Engineering, 2021, 49, 1598-1618.	1.3	15
8	Rapid viscoelastic changes are a hallmark of early leukocyte activation. Biophysical Journal, 2021, 120, 1692-1704.	0.2	17
9	eG Coated Stents Exhibit Enhanced Endothelial Wound Healing Characteristics. Cardiovascular Engineering and Technology, 2021, 12, 515-525.	0.7	2
10	Integration of substrate- and flow-derived stresses in endothelial cell mechanobiology. Communications Biology, 2021, 4, 764.	2.0	77
11	The basement membrane as a structured surface â€“ role in vascular health and disease. Journal of Cell Science, 2020, 133, .	1.2	51
12	Focal adhesion clustering drives endothelial cell morphology on patterned surfaces. Journal of the Royal Society Interface, 2019, 16, 20190263.	1.5	29
13	Shear stress in the microvasculature: influence of red blood cell morphology and endothelial wall undulation. Biomechanics and Modeling in Mechanobiology, 2019, 18, 1095-1109.	1.4	15
14	A Mathematical Model for the Sounds Produced by Knuckle Cracking. Scientific Reports, 2018, 8, 4600.	1.6	7
15	Endothelial autophagic flux hampers atherosclerotic lesion development. Autophagy, 2018, 14, 173-175.	4.3	24
16	ATP Release by Red Blood Cells under Flow: Model and Simulations. Biophysical Journal, 2018, 115, 2218-2229.	0.2	29
17	Effect of flow on ATP/ADP concentration at the endothelial cell surface: interplay between shear stress and mass transport. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 2222-2222.	0.9	1
18	Effect of flow on ATP/ADP concentration at the endothelial cell surface: interplay between shear stress and mass transport. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2018, 98, 1493-1502.	0.9	2

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19	Comparison of a Drugâ€Free Early Programmed Dismantling PDLLA Bioresorbable Scaffold and a Metallic Stent in a Porcine Coronary Artery Model at 3â€Year Followâ€Up. Journal of the American Heart Association, 2017, 6, .	1.6	14
20	Autophagy is required for endothelial cell alignment and atheroprotection under physiological blood flow. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E8675-E8684.	3.3	156
21	Micropipette force probe to quantify single-cell force generation: application to T-cell activation. Molecular Biology of the Cell, 2017, 28, 3229-3239.	0.9	43
22	The stentable <i>in vitro</i> artery: an instrumented platform for endovascular device development and optimization. Journal of the Royal Society Interface, 2016, 13, 20160834.	1.5	14
23	Mechanical Criterion for the Rupture of a Cell Membrane under Compression. Biophysical Journal, 2016, 111, 2711-2721.	0.2	34
24	Fluid Shear Stress Promotes Placental Growth Factor Upregulation in Human Syncytiotrophoblast Through the cAMPâ€"PKA Signaling Pathway. Hypertension, 2016, 68, 1438-1446.	1.3	23
25	T-lymphocyte passive deformation is controlled by unfolding of membrane surface reservoirs. Molecular Biology of the Cell, 2016, 27, 3574-3582.	0.9	34
26	A simple microfluidic device to study cell-scale endothelial mechanotransduction. Biomedical Microdevices, 2016, 18, 63.	1.4	11
27	Dynamic Monitoring of Cell Mechanical Properties using Profile Microindentation. Biophysical Journal, 2016, 110, 134a.	0.2	0
28	Elastocapillary Instability in Mitochondrial Fission. Biophysical Journal, 2016, 110, 472a.	0.2	0
29	Medical Stents: State of the Art and Future Directions. Annals of Biomedical Engineering, 2016, 44, 274-275.	1.3	13
30	Drug-Eluting Stent Design is a Determinant of Drug Concentration at the Endothelial Cell Surface. Annals of Biomedical Engineering, 2016, 44, 302-314.	1.3	7
31	Model of cellular mechanotransduction via actin stress fibers. Biomechanics and Modeling in Mechanobiology, 2016, 15, 331-344.	1.4	23
32	Computational Fluid Dynamic Simulations of Maternal Circulation: Wall Shear Stress in the Human Placenta and Its Biological Implications. PLoS ONE, 2016, 11, e0147262.	1.1	44
33	Elastocapillary Instability in Mitochondrial Fission. Physical Review Letters, 2015, 115, 088102.	2.9	23
34	Optimization of Drug Delivery by Drug-Eluting Stents. PLoS ONE, 2015, 10, e0130182.	1.1	53
35	Characterizing Cell Adhesion by Using Micropipette Aspiration. Biophysical Journal, 2015, 109, 209-219.	0.2	43
36	Dynamics of Receptor-Mediated Nanoparticle Internalization into Endothelial Cells. PLoS ONE, 2015, 10, e0122097.	1.1	18

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37	Intracellular regulation of cell signaling cascades: how location makes a difference. Journal of Mathematical Biology, 2014, 69, 213-242.	0.8	5
38	Modeling the transport of drugs eluted from stents: physical phenomena driving drug distribution in the arterial wall. Biomechanics and Modeling in Mechanobiology, 2014, 13, 327-347.	1.4	82
39	New Approach to Investigate the Cytotoxicity of Nanomaterials Using Single Cell Mechanics. Journal of Physical Chemistry B, 2014, 118, 1246-1255.	1.2	22
40	Microinstrument for optical monitoring of endothelial cell migration under controlled tension/compression via integrated magnetic composite polymer actuation. , 2014, , .		2
41	Blood flow and arterial endothelial dysfunction: Mechanisms and implications. Comptes Rendus Physique, 2013, 14, 479-496.	0.3	33
42	Mechanisms of cytoskeleton-mediated mechanical signal transmission in cells. Communicative and Integrative Biology, 2012, 5, 538-542.	0.6	18
43	Serum proteins prevent aggregation of Fe₂O₃and ZnO nanoparticles. Nanotoxicology, 2012, 6, 837-846.	1.6	75
44	Spatial Sensitivity of the Map Kinase Signaling Pathway in the Cellular Cytoplasm. Biophysical Journal, 2012, 102, 668a.	0.2	0
45	Integration of basal topographic cues and apical shear stress in vascular endothelial cells. Biomaterials, 2012, 33, 4126-4135.	5.7	79
46	Dynamics of Mechanical Signal Transmission through Prestressed Stress Fibers. PLoS ONE, 2012, 7, e35343.	1.1	22
47	Performance of Various Drug-Eluting Stent Geometries Measured Using Computational Analysis. Transactions of the Korean Society of Mechanical Engineers, B, 2012, 36, 601-607.	0.0	0
48	Dynamics of Arterial Wall Transport for Small Hydrophobic Drugs. , 2012, , .		0
49	Effect Of Ambient San Joaquin Valley Ultrafine Particulate Matter On Vascular Endothelial Cell Viability And Inflammation. , 2011, , .		0
50	Generation of hydrogen peroxide from San Joaquin Valley particles in a cell-free solution. Atmospheric Chemistry and Physics, 2011, 11, 753-765.	1.9	44
51	The Effect of Noisy Flow on Endothelial Cell Mechanotransduction: A Computational Study. Annals of Biomedical Engineering, 2011, 39, 911-921.	1.3	13
52	Nesprin-3 regulates endothelial cell morphology, perinuclear cytoskeletal architecture, and flow-induced polarization. Molecular Biology of the Cell, 2011, 22, 4324-4334.	0.9	105
53	Computational Modeling of ATP/ADP Concentration at the Vascular Surface. , 2010, , 49-67.		2
54	Modulation of ATP/ADP Concentration at the Endothelial Cell Surface by Flow: Effect of Cell Topography. Annals of Biomedical Engineering, 2009, 37, 2459-2468.	1.3	10

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55	Effect of cerium oxide nanoparticles on inflammation in vascular endothelial cells. Inhalation Toxicology, 2009, 21, 123-130.	0.8	84
56	ORIGINAL ARTICLE: Trophoblasts and Shear Stress Induce an Asymmetric Distribution of ICAMâ€1 in Uterine Endothelial Cells. American Journal of Reproductive Immunology, 2008, 59, 167-181.	1.2	9
57	Role of Ultrasonic Shear Rate Estimation Errors in Assessing Inflammatory Response and Vascular Risk. Ultrasound in Medicine and Biology, 2008, 34, 963-972.	0.7	61
58	Dragging Along. Circulation Research, 2008, 102, 747-748.	2.0	17
59	Shear stress and 17Î²-estradiol modulate cerebral microvascular endothelial Na-K-Cl cotransporter and Na/H exchanger protein levels. American Journal of Physiology - Cell Physiology, 2008, 294, C363-C371.	2.1	21
60	Induction of Inflammation in Vascular Endothelial Cells by Metal Oxide Nanoparticles: Effect of Particle Composition. Environmental Health Perspectives, 2007, 115, 403-409.	2.8	435
61	MUC1 is involved in trophoblast transendothelial migration. Biochimica Et Biophysica Acta - Molecular Cell Research, 2007, 1773, 1007-1014.	1.9	31
62	Modulation of ATP/ADP Concentration at the Endothelial Surface by Shear Stress: Effect of Flow Recirculation. Annals of Biomedical Engineering, 2007, 35, 505-516.	1.3	20
63	Ion Channels in Shear Stress Sensing in Vascular Endothelium. , 2007, , 155-170.		2
64	Numerical Analysis on the Effect of Wall Shear Stress Around the Ring Drug-Eluting Stent. Transactions of the Korean Society of Mechanical Engineers, B, 2007, 31, 21-28.	0.0	2
65	Secrets of the code: Do vascular endothelial cells use ion channels to decipher complex flow signals?. Biomaterials, 2006, 27, 671-678.	5.7	51
66	Flow-Activated Ion Channels in Vascular Endothelium. Cell Biochemistry and Biophysics, 2006, 46, 277-284.	0.9	22
67	Flow-activated Chloride Channels in Vascular Endothelium. Journal of Biological Chemistry, 2006, 281, 36492-36500.	1.6	53
68	Computational Study of Fluid Mechanical Disturbance Induced by Endovascular Stents. Annals of Biomedical Engineering, 2005, 33, 444-456.	1.3	116
69	Trophoblast Migration Under Flow Is Regulated by Endothelial Cells1. Biology of Reproduction, 2005, 73, 14-19.	1.2	26
70	Macaque trophoblast migration is regulated by RANTES. Experimental Cell Research, 2005, 305, 355-364.	1.2	24
71	Vascular endothelial wound closure under shear stress: role of membrane fluidity and flow-sensitive ion channels. Journal of Applied Physiology, 2005, 98, 2355-2362.	1.2	59
72	Stent Design Using Computational Fluid Dynamics. Transactions of the Korean Society of Mechanical Engineers, B, 2005, 29, 1042-1048.	0.0	2

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73	Numerical study of the impact of non-Newtonian blood behavior on flow over a two-dimensional backward facing step. Biorheology, 2005, 42, 493-509.	1.2	38
74	Effect of Aqueous Tobacco Smoke Extract and Shear Stress on PECAM-1 Expression and Cell Motility in Human Uterine Endothelial Cells. Toxicological Sciences, 2004, 81, 408-418.	1.4	20
75	Differential membrane potential and ion current responses to different types of shear stress in vascular endothelial cells. American Journal of Physiology - Cell Physiology, 2004, 286, C1367-C1375.	2.1	68
76	Regulation of trophoblast beta1-integrin expression by contact with endothelial cells. Cell Communication and Signaling, 2004, 2, 4.	2.7	18
77	Differential Responsiveness of Vascular Endothelial Cells to Different Types of Fluid Mechanical Shear Stress. Cell Biochemistry and Biophysics, 2003, 38, 323-343.	0.9	100
78	A Model for Shear Stress Sensing and Transmission in Vascular Endothelial Cells. Biophysical Journal, 2003, 84, 4087-4101.	0.2	37
79	Effect of shear stress on migration and integrin expression in macaque trophoblast cells. Biochimica Et Biophysica Acta - Molecular Cell Research, 2002, 1589, 233-246.	1.9	36
80	Microchannel Platform for the Study of Endothelial Cell Shape and Function. Biomedical Microdevices, 2002, 4, 9-16.	1.4	67
81	Endothelial cellular response to altered shear stress. American Journal of Physiology - Lung Cellular and Molecular Physiology, 2001, 281, L529-L533.	1.3	314
82	Flow-induced expression of endothelial Na-K-Cl cotransport: dependence on K⁺and Cl^{âˆ'}channels. American Journal of Physiology - Cell Physiology, 2001, 280, C216-C227.	2.1	37
83	A Model for Shear Stress-induced Deformation of a Flow Sensor on the Surface of Vascular Endothelial Cells. Journal of Theoretical Biology, 2001, 210, 221-236.	0.8	55
84	Modulation of ATP/ADP Concentration at the Endothelial Surface by Shear Stress: Effect of Flow-Induced ATP Release. Annals of Biomedical Engineering, 2001, 29, 740-751.	1.3	64
85	Unsteady and Three-Dimensional Flow Simulations in the Human Aorta. , 2001, , 233-238.		0
86	<title>Modular microinstrumentation for endothelial cell research</title>. , 2000, , .		1
87	A Flow-Activated Chloride-Selective Membrane Current in Vascular Endothelial Cells. Circulation Research, 1999, 85, 820-828.	2.0	144
88	Computational study of the effect of geometric and flow parameters on the steady flow field at the rabbit aorto-celiac bifurcation. Biorheology, 1998, 35, 415-435.	1.2	18
89	Mechanisms of Shear Stress Transmission and Transduction in Endothelial Cells. Chest, 1998, 114, 58S-63S.	0.4	43
90	SPATIAL RELATIONSHIPS IN EARLY SIGNALING EVENTS OF FLOW-MEDIATED ENDOTHELIAL MECHANOTRANSDUCTION. Annual Review of Physiology, 1997, 59, 527-549.	5.6	293

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91	Microcinematographic Studies of Flow Patterns in the Excised Rabbit Aorta and its Major Branches. Biorheology, 1997, 34, 195-221.	1.2	28
92	Microcinematographic studies of flow patterns in the excised rabbit aorta and its major branches. Biorheology, 1997, 34, 195-221.	1.2	29
93	Role of Ion Channels in Cellular Mechanotransduction â€“ Lessons from the Vascular Endothelium. , 0, , 161-180.		3