

Rashid Bashir

List of Publications by Year in descending order

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127
papers

6,450
citations

61984

43
h-index

74163

75
g-index

143
all docs

143
docs citations

143
times ranked

8734
citing authors

#	ARTICLE	IF	CITATIONS
1	Three-dimensionally printed biological machines powered by skeletal muscle. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 10125-10130.	7.1	357
2	Biohybrid actuators for robotics: A review of devices actuated by living cells. Science Robotics, 2017, 2, .	17.6	334
3	Rapid isothermal amplification and portable detection system for SARS-CoV-2. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 22727-22735.	7.1	314
4	Ultrasensitive detection of nucleic acids using deformed graphene channel field effect biosensors. Nature Communications, 2020, 11, 1543.	12.8	251
5	Optogenetic skeletal muscle-powered adaptive biological machines. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 3497-3502.	7.1	234
6	Development of Miniaturized Walking Biological Machines. Scientific Reports, 2012, 2, 857.	3.3	197
7	Patterning the differentiation of C2C12 skeletal myoblasts. Integrative Biology (United Kingdom), 2011, 3, 897.	1.3	164
8	3D printing for preoperative planning and surgical training: a review. Biomedical Microdevices, 2018, 20, 65.	2.8	145
9	Biodegradable Thin Metal Foils and Spinâ€On Glass Materials for Transient Electronics. Advanced Functional Materials, 2015, 25, 1789-1797.	14.9	135
10	Detection and Quantification of Methylation in DNA using Solid-State Nanopores. Scientific Reports, 2013, 3, 1389.	3.3	131
11	Microfluidic CD4 ⁺ and CD8 ⁺ T Lymphocyte Counters for Point-of-Care HIV Diagnostics Using Whole Blood. Science Translational Medicine, 2013, 5, 214ra170.	12.4	128
12	Silicon Nanowires with High-k Hafnium Oxide Dielectrics for Sensitive Detection of Small Nucleic Acid Oligomers. ACS Nano, 2012, 6, 6150-6164.	14.6	123
13	Highâ€Resolution Projection Microstereolithography for Patterning of Neovasculature. Advanced Healthcare Materials, 2016, 5, 610-619.	7.6	117
14	A point-of-care microfluidic biochip for quantification of CD64 expression from whole blood for sepsis stratification. Nature Communications, 2017, 8, 15949.	12.8	115
15	COVID-19 Point-of-Care Diagnostics: Present and Future. ACS Nano, 2021, 15, 7899-7906.	14.6	115
16	Hands-free smartphone-based diagnostics for simultaneous detection of Zika, Chikungunya, and Dengue at point-of-care. Biomedical Microdevices, 2017, 19, 73.	2.8	114
17	Stereolithographyâ€Based Hydrogel Microenvironments to Examine Cellular Interactions. Advanced Functional Materials, 2011, 21, 3642-3651.	14.9	112
18	Perspective: The promise of multi-cellular engineered living systems. APL Bioengineering, 2018, 2, 040901.	6.2	110

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19	Neuromuscular actuation of biohybrid motile bots. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 19841-19847.	7.1	108
20	Smartphone-based multiplex 30-minute nucleic acid test of live virus from nasal swab extract. Lab on A Chip, 2020, 20, 1621-1627.	6.0	108
21	Electrochemistry at the Edge of a Single Graphene Layer in a Nanopore. ACS Nano, 2013, 7, 834-843.	14.6	105
22	Slowing DNA Transport Using Graphene's DNA Interactions. Advanced Functional Materials, 2015, 25, 936-946.	14.9	102
23	Point-of-care sensors for the management of sepsis. Nature Biomedical Engineering, 2018, 2, 640-648.	22.5	100
24	Biodegradable Monocrystalline Silicon Photovoltaic Microcells as Power Supplies for Transient Biomedical Implants. Advanced Energy Materials, 2018, 8, 1703035.	19.5	98
25	Creating Living Cellular Machines. Annals of Biomedical Engineering, 2014, 42, 445-459.	2.5	92
26	Utilization and control of bioactuators across multiple length scales. Lab on A Chip, 2014, 14, 653-670.	6.0	90
27	A modular approach to the design, fabrication, and characterization of muscle-powered biological machines. Nature Protocols, 2017, 12, 519-533.	12.0	82
28	Smartphone-Imaged HIV-1 Reverse-Transcription Loop-Mediated Isothermal Amplification (RT-LAMP) on a Chip from Whole Blood. Engineering, 2015, 1, 324-335.	6.7	80
29	Nanopore-Based Assay for Detection of Methylation in Double-Stranded DNA Fragments. ACS Nano, 2015, 9, 290-300.	14.6	73
30	Electron beam induced local crystallization of HfO ₂ nanopores for biosensing applications. Nanoscale, 2013, 5, 10887.	5.6	69
31	Mobile Platform for Multiplexed Detection and Differentiation of Disease-Specific Nucleic Acid Sequences, Using Microfluidic Loop-Mediated Isothermal Amplification and Smartphone Detection. Analytical Chemistry, 2017, 89, 11219-11226.	6.5	68
32	How far cardiac cells can see each other mechanically. Soft Matter, 2011, 7, 6151.	2.7	67
33	Monolayer MoS ₂ Nanoribbon Transistors Fabricated by Scanning Probe Lithography. Nano Letters, 2019, 19, 2092-2098.	9.1	64
34	Damage, Healing, and Remodeling in Optogenetic Skeletal Muscle Bioactuators. Advanced Healthcare Materials, 2017, 6, 1700030.	7.6	63
35	A microfabricated electrical differential counter for the selective enumeration of CD4+ T lymphocytes. Lab on A Chip, 2011, 11, 1437.	6.0	62
36	Simulation and Fabrication of Stronger, Larger, and Faster Walking Biohybrid Machines. Advanced Functional Materials, 2018, 28, 1801145.	14.9	61

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37	Resonant MEMS Mass Sensors for Measurement of Microdroplet Evaporation. <i>Journal of Microelectromechanical Systems</i> , 2012, 21, 702-711.	2.5	60
38	Ultrasensitive Detection of Dopamine, IL-6 and SARS-CoV-2 Proteins on Crumpled Graphene FET Biosensor. <i>Advanced Materials Technologies</i> , 2021, 6, 2100712.	5.8	60
39	Combining Biomarkers with EMR Data to Identify Patients in Different Phases of Sepsis. <i>Scientific Reports</i> , 2017, 7, 10800.	3.3	59
40	A 3D-printed platform for modular neuromuscular motor units. <i>Microsystems and Nanoengineering</i> , 2017, 3, 17015.	7.0	55
41	Biomimicry, Biofabrication, and Biohybrid Systems: The Emergence and Evolution of Biological Design. <i>Advanced Healthcare Materials</i> , 2017, 6, 1700496.	7.6	49
42	Flow metering characterization within an electrical cell counting microfluidic device. <i>Lab on A Chip</i> , 2014, 14, 1469.	6.0	45
43	3D Printed Stem-Cell-Laden, Microchanneled Hydrogel Patch for the Enhanced Release of Cell-Secreting Factors and Treatment of Myocardial Infarctions. <i>ACS Biomaterials Science and Engineering</i> , 2017, 3, 1980-1987.	5.2	44
44	On-chip parallel detection of foodborne pathogens using loop-mediated isothermal amplification. <i>Biomedical Microdevices</i> , 2013, 15, 821-830.	2.8	43
45	Graphene-Based Patterning and Differentiation of C2C12 Myoblasts. <i>Advanced Healthcare Materials</i> , 2014, 3, 995-1000.	7.6	43
46	A microfluidic biochip for complete blood cell counts at the point-of-care. <i>Technology</i> , 2015, 03, 201-213.	1.4	43
47	Detection of SARS-CoV-2 Virus Amplification Using a Crumpled Graphene Field-Effect Transistor Biosensor. <i>ACS Sensors</i> , 2021, 6, 4461-4470.	7.8	42
48	Microfluidic differential immunocapture biochip for specific leukocyte counting. <i>Nature Protocols</i> , 2016, 11, 714-726.	12.0	39
49	High Sensitivity Graphene Field Effect Transistor-Based Detection of DNA Amplification. <i>Advanced Functional Materials</i> , 2020, 30, 2001031.	14.9	39
50	Development of 3D neuromuscular bioactuators. <i>APL Bioengineering</i> , 2020, 4, 016107.	6.2	39
51	Label-free SARS-CoV-2 detection and classification using phase imaging with computational specificity. <i>Light: Science and Applications</i> , 2021, 10, 176.	16.6	37
52	Detection of methylation on dsDNA using nanopores in a MoS ₂ membrane. <i>Nanoscale</i> , 2017, 9, 14836-14845.	5.6	34
53	Three-dimensional microscale hanging drop arrays with geometric control for drug screening and live tissue imaging. <i>Science Advances</i> , 2021, 7, .	10.3	34
54	Interaction variability shapes succession of synthetic microbial ecosystems. <i>Nature Communications</i> , 2020, 11, 309.	12.8	33

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55	Coincidence detection of heterogeneous cell populations from whole blood with coplanar electrodes in a microfluidic impedance cytometer. <i>Lab on A Chip</i> , 2014, 14, 4370-4381.	6.0	32
56	Compliant 3D frameworks instrumented with strain sensors for characterization of millimeter-scale engineered muscle tissues. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	30
57	Integration of Graphene Electrodes with 3D Skeletal Muscle Tissue Models. <i>Advanced Healthcare Materials</i> , 2020, 9, e1901137.	7.6	28
58	Directed cell growth and alignment on protein-patterned 3D hydrogels with stereolithography. <i>Virtual and Physical Prototyping</i> , 2012, 7, 219-228.	10.4	26
59	A microfluidic biochip platform for electrical quantification of proteins. <i>Lab on A Chip</i> , 2018, 18, 1461-1470.	6.0	26
60	Engineering geometrical 3-dimensional untethered in vitro neural tissue mimic. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 25932-25940.	7.1	26
61	Emergency ventilator for COVID-19. <i>PLoS ONE</i> , 2020, 15, e0244963.	2.5	26
62	Long-Term Cryopreservation and Revival of Tissue-Engineered Skeletal Muscle. <i>Tissue Engineering - Part A</i> , 2019, 25, 1023-1036.	3.1	25
63	Microfluidic point-of-care device for detection of early strains and B.1.1.7 variant of SARS-CoV-2 virus. <i>Lab on A Chip</i> , 2022, 22, 1297-1309.	6.0	25
64	Nanoscale thickness double-gated field effect silicon sensors for sensitive pH detection in fluid. <i>Applied Physics Letters</i> , 2008, 92, 193904.	3.3	24
65	Pixelated spatial gene expression analysis from tissue. <i>Nature Communications</i> , 2018, 9, 202.	12.8	24
66	Smartphone-imaged microfluidic biochip for measuring CD64 expression from whole blood. <i>Analyst, The</i> , 2019, 144, 3925-3935.	3.5	23
67	Localized Dielectric Loss Heating in Dielectrophoresis Devices. <i>Scientific Reports</i> , 2019, 9, 18977.	3.3	23
68	Mechanical Characterization and Shape Optimization of Fascicle-Like 3D Skeletal Muscle Tissues Contracted with Electrical and Optical Stimuli. <i>Tissue Engineering - Part A</i> , 2015, 21, 1848-1858.	3.1	21
69	Biaxial Dielectrophoresis Force Spectroscopy: A Stoichiometric Approach for Examining Intermolecular Weak Binding Interactions. <i>ACS Nano</i> , 2016, 10, 4011-4019.	14.6	21
70	Investigating the Life Expectancy and Proteolytic Degradation of Engineered Skeletal Muscle Biological Machines. <i>Scientific Reports</i> , 2017, 7, 3775.	3.3	21
71	Smartphone clip-on instrument and microfluidic processor for rapid sample-to-answer detection of Zika virus in whole blood using spatial RT-LAMP. <i>Analyst, The</i> , 2022, 147, 3838-3853.	3.5	21
72	On-chip electrical detection of parallel loop-mediated isothermal amplification with DG-BioFETs for the detection of foodborne bacterial pathogens. <i>RSC Advances</i> , 2016, 6, 103872-103887.	3.6	20

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73	Engineering as a new frontier for translational medicine. <i>Science Translational Medicine</i> , 2015, 7, 281fs13.	12.4	19
74	Characterization of a 1024 Å— 1024 DG-BioFET platform. <i>Sensors and Actuators B: Chemical</i> , 2017, 250, 100-110.	7.8	19
75	Simultaneous time-varying viscosity, elasticity, and mass measurements of single adherent cancer cells across cell cycle. <i>Scientific Reports</i> , 2020, 10, 12803.	3.3	19
76	Emergence of functional neuromuscular junctions in an engineered, multicellular spinal cord-muscle bioactuator. <i>APL Bioengineering</i> , 2020, 4, 026104.	6.2	19
77	Reverse Transcription Loop-Mediated Isothermal Amplification Assay for Ultrasensitive Detection of SARS-CoV-2 in Saliva and Viral Transport Medium Clinical Samples. <i>Analytical Chemistry</i> , 2021, 93, 7797-7807.	6.5	19
78	Robust label-free microRNA detection using one million ISFET array. <i>Biomedical Microdevices</i> , 2018, 20, 45.	2.8	18
79	Onâ€Chip Electrical Monitoring of Realâ€Time â€œSoftâ€and â€œHardâ€Protein Corona Formation on Carbon Nanoparticles. <i>Small Methods</i> , 2020, 4, 2000099.	8.6	17
80	Principles for the design of multicellular engineered living systems. <i>APL Bioengineering</i> , 2022, 6, 010903.	6.2	17
81	Droplet Microfluidics with MALDI-MS Detection: The Effects of Oil Phases in GABA Analysis. <i>ACS Measurement Science Au</i> , 2021, 1, 147-156.	4.4	16
82	Computationally Assisted Design and Selection of Maneuverable Biological Walking Machines. <i>Advanced Intelligent Systems</i> , 2021, 3, 2000237.	6.1	15
83	Effect of Biointerfacing Linker Chemistries on the Sensitivity of Silicon Nanowires for Protein Detection. <i>Analytical Chemistry</i> , 2013, 85, 9493-9500.	6.5	14
84	Micro-Masonry of MEMS Sensors and Actuators. <i>Journal of Microelectromechanical Systems</i> , 2014, 23, 308-314.	2.5	14
85	Material-mediated proangiogenic factor release pattern modulates quality of regenerated blood vessels. <i>Journal of Controlled Release</i> , 2014, 196, 363-369.	9.9	13
86	Simultaneous electrical detection of IL-6 and PCT using a microfluidic biochip platform. <i>Biomedical Microdevices</i> , 2020, 22, 36.	2.8	13
87	Tip-Based Cleaning and Smoothing Improves Performance in Monolayer MoS ₂ Devices. <i>ACS Omega</i> , 2021, 6, 4013-4021.	3.5	13
88	Diagnostic and prognostic capabilities of a biomarker and EMRâ€based machine learning algorithm for sepsis. <i>Clinical and Translational Science</i> , 2021, 14, 1578-1589.	3.1	12
89	Portable Pathogen Diagnostics Using Microfluidic Cartridges Made from Continuous Liquid Interface Production Additive Manufacturing. <i>Analytical Chemistry</i> , 2021, 93, 10048-10055.	6.5	12
90	Design and integration of a problem-based biofabrication course into an undergraduate biomedical engineering curriculum. <i>Journal of Biological Engineering</i> , 2016, 10, 10.	4.7	11

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91	Rapid, multiplexed detection of biomolecules using electrically distinct hydrogel beads. Lab on A Chip, 2020, 20, 2274-2283.	6.0	11
92	Piezoresistive Microcantilevers From Ultrananocrystalline Diamond. Journal of Microelectromechanical Systems, 2010, 19, 1234-1242.	2.5	10
93	Tip-based nanofabrication of arbitrary shapes of graphene nanoribbons for device applications. RSC Advances, 2015, 5, 37006-37012.	3.6	10
94	Multivariate computational analysis of biosensor's data for improved CD64 quantification for sepsis diagnosis. Lab on A Chip, 2018, 18, 1231-1240.	6.0	10
95	Current understanding and emerging applications of 3D crumpling mediated 2D material-liquid interactions. Current Opinion in Solid State and Materials Science, 2020, 24, 100836.	11.5	10
96	Extracellular Microenvironmental Control for Organoid Assembly. Tissue Engineering - Part B: Reviews, 2022, 28, 1209-1222.	4.8	10
97	Localized heating and thermal characterization of high electrical resistivity silicon-on-insulator sensors using nematic liquid crystals. Applied Physics Letters, 2008, 93, 131908.	3.3	9
98	Preoperative vascular surgery model using a single polymer tough hydrogel with controllable elastic moduli. Soft Matter, 2020, 16, 8057-8068.	2.7	9
99	Overcoming the limitations of COVID-19 diagnostics with nanostructures, nucleic acid engineering, and additive manufacturing. Current Opinion in Solid State and Materials Science, 2022, 26, 100966.	11.5	9
100	Droplet-assisted electrospray phase separation using an integrated silicon microfluidic platform. Lab on A Chip, 2021, 22, 40-46.	6.0	9
101	Magnetophoretic-based microfluidic device for DNA Concentration. Biomedical Microdevices, 2016, 18, 28.	2.8	8
102	Modulating electrophysiology of motor neural networks via optogenetic stimulation during neurogenesis and synaptogenesis. Scientific Reports, 2020, 10, 12460.	3.3	8
103	MEMS-based resonant sensor with uniform mass sensitivity. , 2009, , .		7
104	Variable Membrane Dielectric Polarization Characteristic in Individual Live Cells. Journal of Physical Chemistry Letters, 2020, 11, 7197-7203.	4.6	7
105	Bioprinting: High-Resolution Projection Microstereolithography for Patterning of Neovasculature (Adv. Healthcare Mater. 5/2016). Advanced Healthcare Materials, 2016, 5, 622-622.	7.6	6
106	Effects of inlet/outlet configurations on the electrostatic capture of airborne nanoparticles and viruses. Measurement Science and Technology, 2008, 19, 065204.	2.6	5
107	Hydrodynamic loading and viscous damping of patterned perforations on microfabricated resonant structures. Applied Physics Letters, 2012, 100, .	3.3	5
108	A microfluidic technique to estimate antigen expression on particles. APL Bioengineering, 2017, 1, 016103.	6.2	4

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109	Detecting sepsis by observing neutrophil motility. <i>Nature Biomedical Engineering</i> , 2018, 2, 197-198.	22.5	4
110	Neuromuscular Junction Model Optimized for Electrical Platforms. <i>Tissue Engineering - Part C: Methods</i> , 2021, 27, 242-252.	2.1	4
111	Culture-free biphasic approach for sensitive detection of <i>Escherichia coli</i> O157:H7 from beef samples. <i>Biotechnology and Bioengineering</i> , 2021, 118, 4516-4529.	3.3	4
112	Spatial mapping of cancer tissues by OMICS technologies. <i>Biochimica Et Biophysica Acta: Reviews on Cancer</i> , 2022, 1877, 188663.	7.4	4
113	Hydrogel Microstructures: Characterization of Mass and Swelling of Hydrogel Microstructures using MEMS Resonant Mass Sensor Arrays (Small 16/2012). <i>Small</i> , 2012, 8, 2450-2450.	10.0	3
114	Microcantilevers track single-cell mass. <i>Nature Biotechnology</i> , 2016, 34, 1125-1126.	17.5	3
115	Empowering engineered muscle in biohybrid pump by extending connexin 43 duration with reduced graphene oxides. <i>Biomaterials</i> , 2022, 287, 121643.	11.4	3
116	Short-Segment Pedicle Fixation of Traumatic Low Lumbar Fractures (L3-L5). <i>Clinical Spine Surgery</i> , 2022, 35, E590-E595.	1.3	2
117	Graphene nanopores for nucleic acid analysis. , 2012, , .		1
118	Mobile biosensing using the sensing capabilities of smartphone cameras. , 2017, , .		1
119	Biomimetics: Simulation and Fabrication of Stronger, Larger, and Faster Walking Biohybrid Machines (Adv. Funct. Mater. 23/2018). <i>Advanced Functional Materials</i> , 2018, 28, 1870159.	14.9	1
120	Ultra-sensitive dielectrophoretic surface charge multiplex detection inside a micro-dielectrophoretic device. <i>Biosensors and Bioelectronics</i> , 2022, 210, 114235.	10.1	1
121	Research Highlights: Highlights from the latest articles in nanomedicine. <i>Nanomedicine</i> , 2013, 8, 1369-1371.	3.3	0
122	Hydrogels: In Situ Self-Folding Assembly of a Multi-Walled Hydrogel Tube for Uniaxial Sustained Molecular Release (Adv. Mater. 39/2013). <i>Advanced Materials</i> , 2013, 25, 5522-5522.	21.0	0
123	Transient Electronics: Biodegradable Thin Metal Foils and Spin-On Glass Materials for Transient Electronics (Adv. Funct. Mater. 12/2015). <i>Advanced Functional Materials</i> , 2015, 25, 1904-1904.	14.9	0
124	Neuron-Muscle Interfaces: Matrix Topography Regulates Synaptic Transmission at the Neuromuscular Junction (Adv. Sci. 6/2019). <i>Advanced Science</i> , 2019, 6, 1970032.	11.2	0
125	Conjugated Barcoded Particles for Multiplexed Biomarker Quantification with a Microfluidic Biochip. , 2019, , .		0
126	Computationally Assisted Design and Selection of Maneuverable Biological Walking Machines. <i>Advanced Intelligent Systems</i> , 2021, 3, 2170049.	6.1	0

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127	Back Cover Image, Volume 118, Number 11, November 2021. <i>Biotechnology and Bioengineering</i> , 2021, 118, ii.	3.3	0