

# Umut A Gurkan

## List of Publications by Year in descending order

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117  
papers

5,382  
citations

81900

39  
h-index

88630

70  
g-index

126  
all docs

126  
docs citations

126  
times ranked

7446  
citing authors

#	ARTICLE	IF	CITATIONS
1	Towards access for all: 1st Working Group Report for the Global Gene Therapy Initiative (GCTI). Gene Therapy, 2023, 30, 216-221.	4.5	6
2	Size and density measurements of single sickle red blood cells using microfluidic magnetic levitation. Lab on A Chip, 2022, 22, 683-696.	6.0	16
3	Point-of-Care Microchip Electrophoresis Test for Glycosylated Hemoglobin. , 2022, , .		1
4	<scp>Antithrombinâ€“mitigates thrombinâ€“mediated endothelial cell contraction and sickle red blood cell adhesion in microscale flow. British Journal of Haematology, 2022, 198, 893-902.	2.5	3
5	Standardized microfluidic assessment of red blood cellâ€“mediated microcapillary occlusion: Association with clinical phenotype and hydroxyurea responsiveness in sickle cell disease. Microcirculation, 2021, 28, e12662.	1.8	21
6	Emerging point-of-care technologies for anemia detection. Lab on A Chip, 2021, 21, 1843-1865.	6.0	22
7	Microfluidic electrical impedance assessment of red blood cell-mediated microvascular occlusion. Lab on A Chip, 2021, 21, 1036-1048.	6.0	25
8	Quantifying the influences of radiation therapy on deformability of human red blood cells by dual-beam optical tweezers. RSC Advances, 2021, 11, 15519-15527.	3.6	16
9	Point-of-care microchip electrophoresis for integrated anemia and hemoglobin variant testing. Lab on A Chip, 2021, 21, 3863-3875.	6.0	18
10	Biophysical and rheological biomarkers of red blood cell physiology and pathophysiology. Current Opinion in Hematology, 2021, 28, 138-149.	2.5	15
11	Blood Flow Velocimetry in a Microchannel During Coagulation Using Particle Image Velocimetry and Wavelet-Based Optical Flow Velocimetry. Journal of Biomechanical Engineering, 2021, 143, .	1.3	13
12	Poloxamer 188 vs Placebo for Painful Vaso-occlusive Episodes in Children and Adults With Sickle Cell Disease. JAMA - Journal of the American Medical Association, 2021, 326, 975.	7.4	0
13	A retrospective case study of successful translational research: Gazelle Hb variant point-of-care diagnostic device for sickle cell disease. Journal of Clinical and Translational Science, 2021, 5, e207.	0.6	4
14	Dynamic pH and Thermal Analysis of Paper-Based Microchip Electrophoresis. Micromachines, 2021, 12, 1433.	2.9	7
15	Integrating deep learning with microfluidics for biophysical classification of sickle red blood cells adhered to laminin. PLoS Computational Biology, 2021, 17, e1008946.	3.2	14
16	Whole blood viscosity and red blood cell adhesion: Potential biomarkers for targeted and curative therapies in sickle cell disease. American Journal of Hematology, 2020, 95, 1246-1256.	4.1	42
17	Red blood cell adhesion to ICAM-1 is mediated by fibrinogen and is associated with right-to-left shunts in sickle cell disease. Blood Advances, 2020, 4, 3688-3698.	5.2	28
18	Hydrogen gas sensing using aluminum doped ZnO metasurfaces. Nanoscale Advances, 2020, 2, 3452-3459.	4.6	11

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19	Leukocyte adhesion to P-selectin and the inhibitory role of Crizanlizumab in sickle cell disease: A standardized microfluidic assessment. <i>Blood Cells, Molecules, and Diseases</i> , 2020, 83, 102424.	1.4	35
20	Paper-based microchip electrophoresis for point-of-care hemoglobin testing. <i>Analyst</i> , The, 2020, 145, 2525-2542.	3.5	39
21	Inhibition of Band 3 tyrosine phosphorylation: a new mechanism for treatment of sickle cell disease. <i>British Journal of Haematology</i> , 2020, 190, 599-609.	2.5	46
22	Microfluidic assessment of red blood cell mediated microvascular occlusion. <i>Lab on A Chip</i> , 2020, 20, 2086-2099.	6.0	46
23	Assessment of Red Blood Cell-Mediated Microvascular Occlusion in Sickle Cell Disease By a Novel Electrical Impedance-Based Microfluidic Device. <i>Blood</i> , 2020, 136, 10-10.	1.4	2
24	Contribution of Red Blood Cell Derived Extracellular Vesicles to Sickle Red Blood Cell Adhesion Discerned Using an Endothelialized Microfluidic Assay. <i>Blood</i> , 2020, 136, 13-14.	1.4	1
25	Computer Vision and Deep Learning Assisted Microchip Electrophoresis for Integrated Anemia and Sickle Cell Disease Screening. <i>Blood</i> , 2020, 136, 46-47.	1.4	3
26	Ultrathin-film optical coating for angle-independent remote hydrogen sensing. <i>Measurement Science and Technology</i> , 2020, 31, 115201.	2.6	6
27	Priapism, hemoglobin desaturation, and red blood cell adhesion in men with sickle cell anemia. <i>Blood Cells, Molecules, and Diseases</i> , 2019, 79, 102350.	1.4	16
28	Hydrogen Sensing Using Thin-Film Perfect Light Absorber. <i>ACS Photonics</i> , 2019, 6, 1889-1894.	6.6	25
29	Mercury leads to abnormal red blood cell adhesion to laminin mediated by membrane sulfatides. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 2019, 1861, 1162-1171.	2.6	12
30	Integrated Point-of-Care Device for Anemia Detection and Hemoglobin Variant Identification. , 2019, , .		6
31	Integrated Anemia Detection and Hemoglobin Variant Identification Using Point-of-Care Microchip Electrophoresis. <i>Blood</i> , 2019, 134, 378-378.	1.4	7
32	International Multi-Site Clinical Validation of Point-of-Care Microchip Electrophoresis Test for Hemoglobin Variant Identification. <i>Blood</i> , 2019, 134, 3373-3373.	1.4	5
33	Advancing Healthcare Outcomes for Sickle Cell Disease in Nigeria Using Mobile Health Tools. <i>Blood</i> , 2019, 134, 2173-2173.	1.4	3
34	A monolithic Lagrangian meshfree scheme for Fluid-Structure Interaction problems within the OTM framework. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018, 337, 198-219.	6.6	12
35	Shear dependent red blood cell adhesion in microscale flow. <i>Integrative Biology (United Kingdom)</i> , 2018, 10, 194-206.	1.3	30
36	Live Demonstration: HemeChip - A Portable Microchip Electrophoresis Technology for Point-of-Care Sickle Cell Disease Screening. , 2018, , .		0

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37	Biomimetic post-capillary venule expansions for leukocyte adhesion studies. Scientific Reports, 2018, 8, 9328.	3.3	11
38	Assessment of whole blood coagulation with a microfluidic dielectric sensor. Journal of Thrombosis and Haemostasis, 2018, 16, 2050-2056.	3.8	18
39	Red blood cell adhesion to heme-activated endothelial cells reflects clinical phenotype in sickle cell disease. American Journal of Hematology, 2018, 93, 1050-1060.	4.1	36
40	Factor XII and uPAR upregulate neutrophil functions to influence wound healing. Journal of Clinical Investigation, 2018, 128, 944-959.	8.2	103
41	Clinical Testing of Hemechip in Nigeria for Point-of-Care Screening of Sickle Cell Disease. Blood, 2018, 132, 1095-1095.	1.4	20
42	Heterogeneous Hypoxia-Mediated Neutrophil and Red Blood Cell Adhesion to E-Selectin in Microscale Flow. Blood, 2018, 132, 3671-3671.	1.4	4
43	Red Blood Cell Adhesion Is Increased in the Young Adult Population with Sickle Cell Disease. Blood, 2018, 132, 2387-2387.	1.4	0
44	Hypoxia Enhanced Red Cell Adhesion in Vitro May Identify Patients at Risk for Vasculopathy. Blood, 2018, 132, 3672-3672.	1.4	1
45	Hyperbolic metamaterials-based plasmonic biosensor for fluid biopsy with single molecule sensitivity. EPJ Applied Metamaterials, 2017, 4, 1.	1.5	39
46	Hypoxia-Enhanced adhesion of red blood cells in microscale flow. Microcirculation, 2017, 24, e12374.	1.8	40
47	Microfluidic processing of synovial fluid for cytological analysis. Biomedical Microdevices, 2017, 19, 20.	2.8	6
48	ClotChip: A Microfluidic Dielectric Sensor for Point-of-Care Assessment of Hemostasis. IEEE Transactions on Biomedical Circuits and Systems, 2017, 11, 1459-1469.	4.0	36
49	Organismal engineering: Toward a robotic taxonomic key for devices using organic materials. Science Robotics, 2017, 2, .	17.6	61
50	A low-cost, mass-producible point-of-care platform for diagnosing hemoglobin disorders. , 2017, , .		6
51	Monitoring blood coagulation using a surface-functionalized microfluidic dielectric sensor. , 2017, , .		0
52	3D-Printed Biohybrid Robots Powered by Neuromuscular Tissue Circuits from Aplysia californica. Lecture Notes in Computer Science, 2017, , 475-486.	1.3	12
53	Adhesion of Sickle RBCs to Heme-Activated Endothelial Cells Correlates with Patient Clinical Phenotypes. Blood, 2017, 130, 959-959.	1.4	2
54	3-D Microwell Array System for Culturing Virus Infected Tumor Cells. Scientific Reports, 2016, 6, 39144.	3.3	21

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55	Sickle cell disease biochip: a functional red blood cell adhesion assay for monitoring sickle cell disease. Translational Research, 2016, 173, 74-91.e8.	5.0	66
56	Enhancing the Angular Sensitivity of Plasmonic Sensors Using Hyperbolic Metamaterials. Advanced Optical Materials, 2016, 4, 1767-1772.	7.3	69
57	A PMMA microfluidic dielectric sensor for blood coagulation monitoring at the point-of-care. , 2016, 2016, 291-294.		4
58	A multiband perfect absorber based on hyperbolic metamaterials. Scientific Reports, 2016, 6, 26272.	3.3	77
59	Emerging point-of-care technologies for sickle cell disease screening and monitoring. Expert Review of Medical Devices, 2016, 13, 1073-1093.	2.8	49
60	Anisotropically Stiff 3D Micropillar Niche Induces Extraordinary Cell Alignment and Elongation. Advanced Healthcare Materials, 2016, 5, 1884-1892.	7.6	23
61	Extreme sensitivity biosensing platform based on hyperbolic metamaterials. Nature Materials, 2016, 15, 621-627.	27.5	609
62	Dynamic deformability of sickle red blood cells in microphysiological flow. Technology, 2016, 04, 71-79.	1.4	54
63	Hypoxia Responsiveness in RBCs from Patients with Sickle Cell Disease Associates with a More Severe Clinical Phenotype. Blood, 2016, 128, 3643-3643.	1.4	2
64	A Miniaturized Microfluidic Dielectric Sensor for Point-of-Care Assessment of Blood Coagulation. Blood, 2016, 128, 3754-3754.	1.4	1
65	Three-Dimensional Printing Based Hybrid Manufacturing of Microfluidic Devices. Journal of Nanotechnology in Engineering and Medicine, 2015, 6, .	0.8	33
66	Monitoring time course of human whole blood coagulation using a microfluidic dielectric sensor with a 3D capacitive structure. , 2015, 2015, 5904-7.		17
67	An RF/microwave microfluidic sensor for miniaturized dielectric spectroscopy based on sensor transmission characteristics. , 2015, , .		7
68	Functional Maintenance of Differentiated Embryoid Bodies in Microfluidic Systems: A Platform for Personalized Medicine. Stem Cells Translational Medicine, 2015, 4, 261-268.	3.3	16
69	Paper and Flexible Substrates as Materials for Biosensing Platforms to Detect Multiple Biotargets. Scientific Reports, 2015, 5, 8719.	3.3	148
70	Micro- and nanodevices integrated with biomolecular probes. Biotechnology Advances, 2015, 33, 1727-1743.	11.7	24
71	Point-of-Care Screening for Sickle Cell Disease By a Mobile Micro-Electrophoresis Platform. Blood, 2015, 126, 3379-3379.	1.4	16
72	An RF/microwave microfluidic sensor based on a 3D capacitive structure with a floating electrode for miniaturized dielectric spectroscopy. , 2014, , .		4

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73	Use of commercial off-the-shelf digital cameras for scientific data acquisition and scene-specific color calibration. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2014, 31, 312.	1.5	82
74	Bioâ€Inspired Cryoâ€Ink Preserves Red Blood Cell Phenotype and Function During Nanoliter Vitrification. Advanced Materials, 2014, 26, 5815-5822.	21.0	39
75	Engineering Anisotropic Biomimetic Fibrocartilage Microenvironment by Bioprinting Mesenchymal Stem Cells in Nanoliter Gel Droplets. Molecular Pharmaceutics, 2014, 11, 2151-2159.	4.6	155
76	Evaluation of Epithelial Chimerism After Bone Marrow Mesenchymal Stromal Cell Infusion in Intestinal Transplant Patients. Transplantation Proceedings, 2014, 46, 2125-2132.	0.6	6
77	Micro and Nano-Scale Technologies for Cell Mechanics. Nanobiomedicine, 2014, 1, 5.	5.7	33
78	Heterogeneous Red Blood Cell Adhesion and Deformability in Sickle Cell Disease. Scientific Reports, 2014, 4, 7173.	3.3	99
79	Micro-a-fluidics ELISA for Rapid CD4 Cell Count at the Point-of-Care. Scientific Reports, 2014, 4, 3796.	3.3	85
80	SCD-Biochip: A Functional Assay for Red Cell Adhesion in Sickle Cell Disease. Blood, 2014, 124, 4053-4053.	1.4	5
81	Simple Precision Creation of Digitally Specified, Spatially Heterogeneous, Engineered Tissue Architectures. Advanced Materials, 2013, 25, 1192-1198.	21.0	67
82	Manipulating biological agents and cells in micro-scale volumes for applications in medicine. Chemical Society Reviews, 2013, 42, 5788.	38.1	100
83	Nanoplasmonic Quantitative Detection of Intact Viruses from Unprocessed Whole Blood. ACS Nano, 2013, 7, 4733-4745.	14.6	158
84	Exhaustion of Racing Sperm in Natureâ€Mimicking Microfluidic Channels During Sorting. Small, 2013, 9, 3374-3384.	10.0	96
85	Flow induces epithelial-mesenchymal transition, cellular heterogeneity and biomarker modulation in 3D ovarian cancer nodules. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E1974-83.	7.1	184
86	Paramagnetic Levitational Assembly of Hydrogels. Advanced Materials, 2013, 25, 1137-1143.	21.0	77
87	Nanoliter droplet vitrification for oocyte cryopreservation. Nanomedicine, 2012, 7, 553-564.	3.3	26
88	Immune and Inflammatory Pathways are Involved in Inherent Bone Marrow Ossification. Clinical Orthopaedics and Related Research, 2012, 470, 2528-2540.	1.5	5
89	Portable microfluidic chip for detection of Escherichia coli in produce and blood. International Journal of Nanomedicine, 2012, 7, 2591.	6.7	72
90	Efficient on-chip isolation of HIV subtypes. Lab on A Chip, 2012, 12, 1508.	6.0	73

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91	Smart Interface Materials Integrated with Microfluidics for On-Demand Local Capture and Release of Cells. Advanced Healthcare Materials, 2012, 1, 661-668.	7.6	48
92	Emerging Technologies for Assembly of Microscale Hydrogels. Advanced Healthcare Materials, 2012, 1, 149-158.	7.6	83
93	Release of Magnetic Nanoparticles from Cell-Encapsulating Biodegradable Nanobiomaterials. ACS Nano, 2012, 6, 6640-6649.	14.6	74
94	Prediction and control of number of cells in microdroplets by stochastic modeling. Lab on A Chip, 2012, 12, 4884.	6.0	17
95	Lensless imaging for simultaneous microfluidic sperm monitoring and sorting. Lab on A Chip, 2011, 11, 2535.	6.0	80
96	Microengineering methods for cell-based microarrays and high-throughput drug-screening applications. Biofabrication, 2011, 3, 034101.	7.1	89
97	Ossifying Bone Marrow Explant Culture as a Three-Dimensional Mechanoresponsive In Vitro Model of Osteogenesis. Tissue Engineering - Part A, 2011, 17, 417-428.	3.1	15
98	Enumeration of CD4+ T-Cells Using a Portable Microchip Count Platform in Tanzanian HIV-Infected Patients. PLoS ONE, 2011, 6, e21409.	2.5	74
99	The assembly of cell-encapsulating microscale hydrogels using acoustic waves. Biomaterials, 2011, 32, 7847-7855.	11.4	123
100	Statistical Modeling of Single Target Cell Encapsulation. PLoS ONE, 2011, 6, e21580.	2.5	44
101	Controlled viable release of selectively captured label-free cells in microchannels. Lab on A Chip, 2011, 11, 3979.	6.0	55
102	Miniaturized lensless imaging systems for cell and microorganism visualization in point-of-care testing. Biotechnology Journal, 2011, 6, 138-149.	3.5	84
103	Editorial: Scaffold-free cell-based approaches in biomedicine and biotechnology. Biotechnology Journal, 2011, 6, 1426-1427.	3.5	0
104	A Scaffold-Free Multicellular Three-Dimensional In Vitro Model of Osteogenesis. Calcified Tissue International, 2011, 88, 388-401.	3.1	18
105	Three-Dimensional Magnetic Assembly of Microscale Hydrogels. Advanced Materials, 2011, 23, 4254-4260.	21.0	213
106	Transport of a soft cargo on a nanoscale ratchet. Applied Physics Letters, 2011, 99, 063703.	3.3	37
107	Embryonic stem cell bioprinting for uniform and controlled size embryoid body formation. Biomicrofluidics, 2011, 5, 022207.	2.4	85
108	Automated and Adaptable Quantification of Cellular Alignment from Microscopic Images for Tissue Engineering Applications. Tissue Engineering - Part C: Methods, 2011, 17, 641-649.	2.1	48

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109	Emerging technologies in medical applications of minimum volume vitrification. Nanomedicine, 2011, 6, 1115-1129.	3.3	51
110	Living Bacterial Sacrificial Porogens to Engineer Decellularized Porous Scaffolds. PLoS ONE, 2011, 6, e19344.	2.5	23
111	Comparison of morphology, orientation, and migration of tendon derived fibroblasts and bone marrow stromal cells on electrochemically aligned collagen constructs. Journal of Biomedical Materials Research - Part A, 2010, 94A, 1070-1079.	4.0	37
112	The Sequential Production Profiles of Growth Factors and their Relations to Bone Volume in Ossifying Bone Marrow Explants. Tissue Engineering - Part A, 2010, 16, 2295-2306.	3.1	26
113	Mechanical Stimulation Enhances the Production of BMP-2 in Ossifying Rat Bone Marrow Organ Cultures. , 2009, , .		0
114	The Mechanical Environment of Bone Marrow: A Review. Annals of Biomedical Engineering, 2008, 36, 1978-1991.	2.5	254
115	An electrochemical fabrication process for the assembly of anisotropically oriented collagen bundles. Biomaterials, 2008, 29, 3278-3288.	11.4	224
116	An Implantable Magnetoelastic Sensor System for Wireless Physiological Sensing of Viscosity. , 2007, , .		1
117	State Estimator Design for Multicomponent Batch Distillation Columns. Chemical Engineering Research and Design, 2005, 83, 433-444.	5.6	8