Athanasios Mantalaris

List of Publications by Year
in descending order

88 papers	2,507 citations	236925 25 h-index	214800 47 g-index
95 all docs	95 docs citations	95 times ranked	3483 citing authors

#	Article	IF	Citations
1	More Than Meets the Eye in Bacterial Cellulose: Biosynthesis, Bioprocessing, and Applications in Advanced Fiber Composites. Macromolecular Bioscience, 2014, 14, 10-32.	4.1	316
2	The use of murine embryonic stem cells, alginate encapsulation, and rotary microgravity bioreactor in bone tissue engineering. Biomaterials, 2009, 30, 499-507.	11.4	182
3	Stem cell bioprocessing: fundamentals and principles. Journal of the Royal Society Interface, 2009, 6, 209-232.	3.4	160
4	Apoptosis: A mammalian cell bioprocessing perspective. Biotechnology Advances, 2019, 37, 459-475.	11.7	117
5	Nanocellulose enhanced interfaces in truly green unidirectional fibre reinforced composites. Composite Interfaces, 2007, 14, 753-762.	2.3	83
6	â€˜Closing the loopâ€™ in biological systems modeling â€” From the in silico to the in vitro. Automatica, 2011, 47, 1147-1155.	5.0	81
7	Long-term cytokine-free expansion of cord blood mononuclear cells in three-dimensional scaffolds. Biomaterials, 2011, 32, 9263-9270.	11.4	67
8	Integrated 3-Dimensional Expansion and Osteogenic Differentiation of Murine Embryonic Stem Cells. Tissue Engineering, 2007, 13, 2957-2970.	4.6	65
9	Engineering a mimicry of bone marrow tissue ex vivo. Journal of Bioscience and Bioengineering, 2005, 100, 28-35.	2.2	64
10	Systematic development of predictive mathematical models for animal cell cultures. Computers and Chemical Engineering, 2010, 34, 1192-1198.	3.8	63
11	Enhanced Derivation of Osteogenic Cells from Murine Embryonic Stem Cells After Treatment with HepG2- Conditioned Medium and Modulation of the Embryoid Body Formation Period: Application to Skeletal Tissue Engineering. Tissue Engineering, 2006, 12, 1381-1392.	4.6	56
12	Advanced control strategies for the multicolumn countercurrent solvent gradient purification process. AIChE Journal, 2016, 62, 2341-2357.	3.6	56
13	Oxidized alginate hydrogels with the GHK peptide enhance cord blood mesenchymal stem cell osteogenesis: A paradigm for metabolomics-based evaluation of biomaterial design. Acta Biomaterialia, 2019, 88, 224-240.	8.3	55
14	BIOPROCESS SYSTEMS ENGINEERING: TRANSFERRING TRADITIONAL PROCESS ENGINEERING PRINCIPLES TO INDUSTRIAL BIOTECHNOLOGY. Computational and Structural Biotechnology Journal, 2012, 3, e201210022.	4.1	50
15	Recombinant biosynthesis of bacterial cellulose in genetically modified Escherichia coli. Bioprocess and Biosystems Engineering, 2018, 41, 265-279.	3.4	50
16	Toward Global Parametric Estimability of a Large-Scale Kinetic Single-Cell Model for Mammalian Cell Cultures. Industrial & Engineering Chemistry Research, 2005, 44, 868-878.	3.7	47
17	Bone and cartilage regeneration with the use of umbilical cord mesenchymal stem cells. Expert Opinion on Biological Therapy, 2015, 15, 1541-1552.	3.1	46
18	Human embryonic and induced pluripotent stem cells maintain phenotype but alter their metabolism after exposure to ROCK inhibitor. Scientific Reports, 2017, 7, 42138.	3.3	46

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19	Current clinical evidence for the use of mesenchymal stem cells in articular cartilage repair. Expert Opinion on Biological Therapy, 2016, 16, 535-557.	3.1	42
20	Metabolomics Analysis of the Osteogenic Differentiation of Umbilical Cord Blood Mesenchymal Stem Cells Reveals Differential Sensitivity to Osteogenic Agents. Stem Cells and Development, 2017, 26, 723-733.	2.1	40
21	The regulatory logic of <i>mâ€‹</i>xylene biodegradation by <i>Pseudomonas putida</i> mtâ€2 exposed by dynamic modelling of the principal node <i>Ps/Pr</i> of the TOL plasmid. Environmental Microbiology, 2010, 12, 1705-1718.	3.8	38
22	A combined fluid dynamics, mass transport and cell growth model for a three-dimensional perfused biorector for tissue engineering of haematopoietic cells. Biochemical Engineering Journal, 2007, 35, 1-11.	3.6	35
23	A 3D bioinspired highly porous polymeric scaffolding system for<i>in vitro</i>simulation of pancreatic ductal adenocarcinoma. RSC Advances, 2018, 8, 20928-20940.	3.6	31
24	Investigational drugs for fracture healing: preclinical & clinical data. Expert Opinion on Investigational Drugs, 2016, 25, 585-596.	4.1	27
25	Designing a bio-inspired biomimetic in vitro system for the optimization of ex vivo studies of pancreatic cancer. Drug Discovery Today, 2017, 22, 690-701.	6.4	27
26	Advanced modelâ€based control strategies for the intensification of upstream and downstream processing in mAb production. Biotechnology Progress, 2017, 33, 966-988.	2.6	27
27	The incorporation of 70s bioactive glass to the osteogenic differentiation of murine embryonic stem cells in 3D bioreactors. Journal of Tissue Engineering and Regenerative Medicine, 2009, 3, 63-71.	2.7	26
28	Linking genes to microbial growth kineticsâ€"An integrated biochemical systems engineering approach. Metabolic Engineering, 2011, 13, 401-413.	7.0	26
29	A Real-Time Multi-Channel Monitoring System for Stem Cell Culture Process. IEEE Transactions on Biomedical Circuits and Systems, 2008, 2, 66-77.	4.0	25
30	Influence of culture pH on proliferation and cardiac differentiation of murine embryonic stem cells. Biochemical Engineering Journal, 2014, 90, 8-15.	3.6	25
31	Polyurethane scaffolds seeded with CD34+ cells maintain early stem cells whilst also facilitating prolonged egress of haematopoietic progenitors. Scientific Reports, 2016, 6, 32149.	3.3	25
32	Dynamic human erythropoiesis in a three-dimensional perfusion bone marrow biomimicry. Biomaterials, 2019, 188, 24-37.	11.4	25
33	Fibronectin stimulates the osteogenic differentiation of murine embryonic stem cells. Journal of Tissue Engineering and Regenerative Medicine, 2017, 11, 1929-1940.	2.7	24
34	RGDâ€functionalized polyurethane scaffolds promote umbilical cord blood mesenchymal stem cell expansion and osteogenic differentiation. Journal of Tissue Engineering and Regenerative Medicine, 2019, 13, 232-243.	2.7	22
35	<i>In Vitro</i>Direct Osteogenesis of Murine Embryonic Stem Cells Without Embryoid Body Formation. Stem Cells and Development, 2008, 17, 963-970.	2.1	21
36	Global superstructure optimisation of red blood cell production in a parallelised hollow fibre bioreactor. Computers and Chemical Engineering, 2014, 71, 532-553.	3.8	21

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37	Free Energy Predictions of Ligand Binding to an Î±-Helix Using Steered Molecular Dynamics and Umbrella Sampling Simulations. Journal of Chemical Information and Modeling, 2014, 54, 2093-2104.	5.4	19
38	Cyclin and DNA Distributed Cell Cycle Model for GS-NS0 Cells. PLoS Computational Biology, 2015, 11, e1004062.	3.2	18
39	Patientâ€Specific 3D Bioprinted Models of Developing Human Heart. Advanced Healthcare Materials, 2021, 10, e2001169.	7.6	18
40	Multiomics characterization of mesenchymal stromal cells cultured in monolayer and as aggregates. Biotechnology and Bioengineering, 2020, 117, 1761-1778.	3.3	18
41	A mathematical model of subpopulation kinetics for the deconvolution of leukaemia heterogeneity. Journal of the Royal Society Interface, 2015, 12, 20150276.	3.4	17
42	Increased PIP3 activity blocks nanoparticle mRNA delivery. Science Advances, 2020, 6, eaba5672.	10.3	16
43	Systematic Understanding of Recent Developments in Bacterial Cellulose Biosynthesis at Genetic, Bioprocess and Product Levels. International Journal of Molecular Sciences, 2021, 22, 7192.	4.1	16
44	A Quantitative Three-Dimensional Image Analysis Tool for Maximal Acquisition of Spatial Heterogeneity Data. Tissue Engineering - Part C: Methods, 2017, 23, 108-117.	2.1	15
45	Directing embryonic stem cell differentiation into osteogenic chondrogenic lineagein vitro. Biotechnology and Bioprocess Engineering, 2007, 12, 15-21.	2.6	14
46	Nanosensors for Regenerative Medicine. Journal of Biomedical Nanotechnology, 2014, 10, 2722-2746.	1.1	14
47	Energy-based culture medium design for biomanufacturing optimization: A case study in monoclonal antibody production by GS-NS0 cells. Metabolic Engineering, 2018, 47, 21-30.	7.0	14
48	A novel perfused rotary bioreactor for cardiomyogenesis of embryonic stem cells. Biotechnology Letters, 2014, 36, 947-960.	2.2	13
49	Stem cell biomanufacturing under uncertainty: A case study in optimizing red blood cell production. AICHE Journal, 2018, 64, 3011-3022.	3.6	13
50	Model-Based Dynamic Optimization of Monoclonal Antibodies Production in Semibatch Operationâ€"Use of Reformulation Techniques. Industrial & Engineering Chemistry Research, 2018, 57, 9915-9924.	3.7	13
51	Transcriptional kinetics of the cross-talk between the ortho -cleavage and TOL pathways of toluene biodegradation in Pseudomonas putida mt-2. Journal of Biotechnology, 2016, 228, 112-123.	3.8	12
52	The impact of succinate trace on pWW0 and ortho -cleavage pathway transcription in Pseudomonas putida mt-2 during toluene biodegradation. Bioresource Technology, 2017, 234, 397-405.	9.6	12
53	Optimal bioprocess design through a gene regulatory network â€" Growth kinetic hybrid model: Towards replacing Monod kinetics. Metabolic Engineering, 2018, 48, 129-137.	7.0	12
54	Comparison of human isogeneic Whartonâ€™s jelly MSCs and iPSC-derived MSCs reveals differentiation-dependent metabolic responses to IFNG stimulation. Cell Death and Disease, 2019, 10, 277.	6.3	12

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55	Ceramic Hollow Fibre Constructs for Continuous Perfusion and Cell Harvest from 3D Hematopoietic Organoids. Stem Cells International, 2018, 2018, 1-14.	2.5	11
56	Hydrodynamics and bioprocess considerations in designing bioreactors for cardiac tissue engineering. Journal of Regenerative Medicine & Tissue Engineering, 2012, 1, 4.	1.5	11
57	Osteogenic differentiation of bone marrow mesenchymal stem cells on chitosan/gelatin scaffolds: gene expression profile and mechanical analysis. Biomedical Materials (Bristol), 2020, 15, 064101.	3.3	10
58	Molecular and thermodynamic basis for EGCGâ€Keratin interactionâ€part II: Experimental investigation. AIChE Journal, 2013, 59, 4824-4827.	3.6	9
59	Molecular and thermodynamic basis for EGCGâ€Keratin interactionâ€part I: Molecular dynamics simulations. AIChE Journal, 2013, 59, 4816-4823.	3.6	9
60	A Study on Fe2+Ââ€“ Î±-Helical-Rich Keratin Complex Formation Using Isothermal Titration Calorimetry and Molecular Dynamics Simulation. Journal of Pharmaceutical Sciences, 2014, 103, 1224-1232.	3.3	8
61	New Approaches to Respiratory Assist: Bioengineering an Ambulatory, Miniaturized Bioartificial Lung. ASAIO Journal, 2019, 65, 422-429.	1.6	7
62	Immune reconstitution and clinical recovery following anti-CD28 antibody (TGN1412)-induced cytokine storm. Cancer Immunology, Immunotherapy, 2021, 70, 1127-1142.	4.2	7
63	Enhanced Hematopoietic Differentiation Toward Erythrocytes from Murine Embryonic Stem Cells with HepG2-Conditioned Medium. Stem Cells and Development, 2012, 21, 3152-3161.	2.1	6
64	A Predictive Mathematical Model of Cell Cycle, Metabolism, and Apoptosis of Monoclonal Antibodyâ€Producing GSâ€“NS0 Cells. Biotechnology Journal, 2019, 14, e1800573.	3.5	6
65	Capturing Mesenchymal Stem Cell Heterogeneity during Osteogenic Differentiation: An Experimentalâ€“Modeling Approach. Industrial & Engineering Chemistry Research, 2019, 58, 13900-13909.	3.7	6
66	Systematic experimental design for bioprocess characterization: Elucidating transient effects of multi-cytokine contributions on erythroid differentiation. Biotechnology and Bioprocess Engineering, 2012, 17, 218-226.	2.6	5
67	EnhancedIn vitro chondrogenic differentiation of murine embryonic stem cells. Biotechnology and Bioprocess Engineering, 2007, 12, 696-706.	2.6	4
68	Early Exposure of Murine Embryonic Stem Cells to Hematopoietic Cytokines Differentially Directs Definitive Erythropoiesis and Cardiomyogenesis in Alginate Hydrogel Three-Dimensional Cultures. Stem Cells and Development, 2014, 23, 2720-2729.	2.1	4
69	A Spatiotemporal Microenvironment Model to Improve Design of a Three-Dimensional Bioreactor for Red Cell Production. Tissue Engineering - Part A, 2021, , .	3.1	4
70	Biology Of Mixed Phenotype Acute Leukemia In Successful Long-Term Cytokine-Free Three-Dimensional (3D) Static and Perfused 3D Hollow-Fibre Bioreactor Culture. Blood, 2013, 122, 2603-2603.	1.4	4
71	The Use of Alginate Hydrogels for the Culture of Mesenchymal Stem Cells (MSCs): In Vitro and In Vivo Paradigms. , 0, , .		4
72	Linking Engineered Gene Circuit Kinetic Modeling to Cellulose Biosynthesis Prediction in <i>Escherichia coli</i>: Toward Bioprocessing of Microbial Cell Factories. Industrial & Engineering Chemistry Research, 2020, 59, 4659-4669.	3.7	3

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73	Development of a Novel Perfusion Rotating Wall Vessel Bioreactor with Ultrasound Stimulation for Mass-Production of Mineralized Tissue Constructs. Tissue Engineering and Regenerative Medicine, 2022, 19, 739-754.	3.7	3
74	A dual-parameter identification approach for data-based predictive modeling of hybrid gene regulatory network-growth kinetics in Pseudomonas putida mt-2. Bioprocess and Biosystems Engineering, 2020, 43, 1671-1688.	3.4	2
75	Cell Expansion, Cell Encapsulation, 3D Cultures. , 2008, , 503-515.		1
76	Mesoderm Lineage 3D Tissue Constructs Are Produced at Largeâ€Scale in a 3D Stem Cell Bioprocess. Biotechnology Journal, 2017, 12, 1600748.	3.5	1
77	Metabolism of Acute Myeloid Leukemia Cell Lines Alters with Passage in 2D Culture and Remains Stable in 3D. Blood, 2018, 132, 2787-2787.	1.4	1
78	In Vitro Differentiation of Embryonic Stem Cells into Hematopoietic Lineage: Towards Erythroid Progenitorâ€™s Production. Methods in Molecular Biology, 2015, 1341, 217-234.	0.9	0
79	Long-Term in Vitro Cytokine-Free and Serum-Free Culture of Human Cord Blood Mononuclear Cells in a Three-Dimensional Scaffold.. Blood, 2009, 114, 503-503.	1.4	0
80	A Novel, Three Dimensional (3D) Culture System for the Efficient, Single-Step Erythropoietic Differentiation of Mouse Embryonic Stem Cells (mESCs). Blood, 2010, 116, 2044-2044.	1.4	0
81	Long-Term, Cytokine-Free Ex Vivo Expansion of Human Cord Blood Mononuclear Cells Using a Novel Closed-Loop 3D Dual Hollow Fibre Perfused Bioreactor. Blood, 2010, 116, 828-828.	1.4	0
82	Effects of Single-Agent, Low Dose Exogenous Erythropoietin In a Long-Term In Vitro serum-Free 3D Culture of Human Cord Blood Mononuclear Cells for Directed Erythropoiesis. Blood, 2010, 116, 341-341.	1.4	0
83	Ex Vivo Three-Dimensional (3D) Functional biomimicry for the Long-Term Cytokine-Free Culture of Human Primary Acute Myeloid Leukemia (AML). Blood, 2012, 120, 4896-4896.	1.4	0
84	Physiologic Erythropoiesis with Enhanced Globin Switching and Endogenous Cytokine Production in a Long-Term Serum-free in Vitro human Bone Marrow Biomimicry. Blood, 2012, 120, 276-276.	1.4	0
85	Use of Mathematical Modelling Indicates That Patients Treated for Acute Myeloid Leukaemia (AML) Are Undertreated When Ideal Body Weight Is Used to Dose Chemotherapy. Blood, 2015, 126, 4522-4522.	1.4	0
86	Effect of Oxygen and 3D Microenvironment on Physiologic Erythropoiesis. Blood, 2015, 126, 3600-3600.	1.4	0
87	Early Erythroid Development Is Enhanced with Hypoxia and Terminal Maturation with Normoxia in a 3D Ex Vivo Physiologic Eythropoiesis Model. Blood, 2016, 128, 2453-2453.	1.4	0
88	Establishment of a Spontaneous Stromal Microenvironment from Cord Blood Supports Human Dynamic Erythropoietic Temporal Maturation in Long-Term Serum- and Cytokine-Free 3D Cultures and Reveals a Distinct CD44hi Population. Blood, 2019, 134, 2219-2219.	1.4	0