Matthew Wook Chang

List of Publications by Citations

140 papers	5,692 citations	41 h-index	72 g-index
149 ext. papers	6,735 ext. citations	7.8 avg, IF	5.92 L-index

#	Paper	IF	Citations
140	A polycationic antimicrobial and biocompatible hydrogel with microbe membrane suctioning ability. *Nature Materials*, **2011**, 10, 149-56	27	588
139	Sharper and faster "nano darts" kill more bacteria: a study of antibacterial activity of individually dispersed pristine single-walled carbon nanotube. *ACS Nano*, **2009**, 3, 3891-902	16.7	420
138	Engineering microbes to sense and eradicate Pseudomonas aeruginosa, a human pathogen. *Molecular Systems Biology*, **2011**, 7, 521	12.2	245
137	Engineered probiotic Escherichia coli can eliminate and prevent Pseudomonas aeruginosa gut infection in animal models. *Nature Communications*, **2017**, 8, 15028	17.4	205
136	Hollow fiber membrane decorated with Ag/MWNTs: toward effective water disinfection and biofouling control. *ACS Nano*, **2011**, 5, 10033-40	16.7	193
135	A photopolymerized antimicrobial hydrogel coating derived from epsilon-poly-L-lysine. *Biomaterials* , **2011**, 32, 2704-12	15.6	173
134	Deposition of Silver Nanoparticles on Multiwalled Carbon Nanotubes Grafted with Hyperbranched Poly(amidoamine) and Their Antimicrobial Effects. *Journal of Physical Chemistry C*, **2008**, 112, 18754-18759	3.8	138
133	High potency and broad-spectrum antimicrobial peptides synthesized via ring-opening polymerization of alpha-aminoacid-N-carboxyanhydrides. *Biomacromolecules*, **2010**, 11, 60-7	6.9	125
132	Global transcriptome analysis of Staphylococcus aureus response to hydrogen peroxide. *Journal of Bacteriology*, **2006**, 188, 1648-59	3.5	120
131	Reprogramming microbes to be pathogen-seeking killers. *ACS Synthetic Biology*, **2014**, 3, 228-37	5.7	118
130	The Fungal Mycobiome and Its Interaction with Gut Bacteria in the Host. *International Journal of Molecular Sciences*, **2017**, 18,	6.3	117
129	Engineered commensal microbes for diet-mediated colorectal-cancer chemoprevention. *Nature Biomedical Engineering*, **2018**, 2, 27-37	19	106
128	Improvement of biomass properties by pretreatment with ionic liquids for bioconversion process. *Bioresource Technology*, **2012**, 111, 453-9	11	98
127	Microbiome engineering: Current applications and its future. *Biotechnology Journal*, **2017**, 12, 1600099	5.6	95
126	Covalent immobilization of nisin on multi-walled carbon nanotubes: superior antimicrobial and anti-biofilm properties. *Nanoscale*, **2011**, 3, 1874-80	7.7	92
125	Building a global alliance of biofoundries. *Nature Communications*, **2019**, 10, 2040	17.4	91
124	Antibacterial efficacy of inhalable levofloxacin-loaded polymeric nanoparticles against E. coli biofilm cells: the effect of antibiotic release profile. *Pharmaceutical Research*, **2010**, 27, 1597-609	4.5	91

123	Transporter engineering for improved tolerance against alkane biofuels in Saccharomyces cerevisiae. *Biotechnology for Biofuels*, **2013**, 6, 21	7.8	76
122	A Two-Layer Gene Circuit for Decoupling Cell Growth from Metabolite Production. *Cell Systems*, **2016**, 3, 133-143	10.6	70
121	Microbial tolerance engineering toward biochemical production: from lignocellulose to products. *Current Opinion in Biotechnology*, **2014**, 29, 99-106	11.4	70
120	Designer probiotics for the prevention and treatment of human diseases. *Current Opinion in Chemical Biology*, **2017**, 40, 8-16	9.7	67
119	Over-expression GbERF2 transcription factor in tobacco enhances brown spots disease resistance by activating expression of downstream genes. *Gene*, **2007**, 391, 80-90	3.8	65
118	The roles of lipid in anti-biofilm efficacy of lipid–polymer hybrid nanoparticles encapsulating antibiotics. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **2011**, 389, 158-165	5.1	64
117	Metabolic engineering of Saccharomyces cerevisiae for the overproduction of short branched-chain fatty acids. *Metabolic Engineering*, **2016**, 34, 36-43	9.7	61
116	Site specific immobilization of a potent antimicrobial peptide onto silicone catheters: evaluation against urinary tract infection pathogens. *Journal of Materials Chemistry B*, **2014**, 2, 1706-1716	7.3	60
115	Transcriptome response to alkane biofuels in Saccharomyces cerevisiae: identification of efflux pumps involved in alkane tolerance. *Biotechnology for Biofuels*, **2013**, 6, 95	7.8	60
114	Combinatorial metabolic engineering of Saccharomyces cerevisiae for terminal alkene production. *Metabolic Engineering*, **2015**, 31, 53-61	9.7	59
113	Ultra-Sensitive Serial Profiling of SARS-CoV-2 Antigens and Antibodies in Plasma to Understand Disease Progression in COVID-19 Patients with Severe Disease. *Clinical Chemistry*, **2020**, 66, 1562-1572	5.5	59
112	Comparative global transcription analysis of sodium hypochlorite, peracetic acid, and hydrogen peroxide on Pseudomonas aeruginosa. *Applied Microbiology and Biotechnology*, **2007**, 76, 1093-105	5.7	53
111	Engineering a riboswitch-based genetic platform for the self-directed evolution of acid-tolerant phenotypes. *Nature Communications*, **2017**, 8, 411	17.4	52
110	Novel short antibacterial and antifungal peptides with low cytotoxicity: Efficacy and action mechanisms. *Biochemical and Biophysical Research Communications*, **2010**, 398, 594-600	3.4	52
109	Antibacterial efficacy of inhalable antibiotic-encapsulated biodegradable polymeric nanoparticles against E. coli biofilm cells. *Journal of Biomedical Nanotechnology*, **2010**, 6, 391-403	4	51
108	Microbial engineering strategies to improve cell viability for biochemical production. *Biotechnology Advances*, **2013**, 31, 903-14	17.8	48
107	Hildebrand solubility parameters of ionic liquids: Effects of ionic liquid type, temperature and DMA fraction in ionic liquid. *Chemical Engineering Journal*, **2012**, 213, 356-362	14.7	47
106	A predicted S-type pyocin shows a bactericidal activity against clinical Pseudomonas aeruginosa isolates through membrane damage. *FEBS Letters*, **2010**, 584, 3354-8	3.8	47

105	Genome-scale metabolic modeling and in silico analysis of lipid accumulating yeast Candida tropicalis for dicarboxylic acid production. *Biotechnology and Bioengineering*, **2016**, 113, 1993-2004	4.9	45
104	Whole-cell biocatalytic and de novo production of alkanes from free fatty acids in Saccharomyces cerevisiae. *Biotechnology and Bioengineering*, **2017**, 114, 232-237	4.9	42
103	Synthetic genetic circuits for programmable biological functionalities. *Biotechnology Advances*, **2019**, 37, 107393	17.8	42
102	Toxicogenomic analysis of sodium hypochlorite antimicrobial mechanisms in Pseudomonas aeruginosa. *Applied Microbiology and Biotechnology*, **2007**, 74, 176-85	5.7	42
101	The imminent role of protein engineering in synthetic biology. *Biotechnology Advances*, **2012**, 30, 541-9	17.8	41
100	Production of Fatty Acid-derived valuable chemicals in synthetic microbes. *Frontiers in Bioengineering and Biotechnology*, **2014**, 2, 78	5.8	41
99	Bacterial XylRs and synthetic promoters function as genetically encoded xylose biosensors in Saccharomyces cerevisiae. *Biotechnology Journal*, **2015**, 10, 315-22	5.6	40
98	Encapsulation of Autoinducer Sensing Reporter Bacteria in Reinforced Alginate-Based Microbeads. *ACS Applied Materials & Interfaces*, **2017**, 9, 22321-22331	9.5	39
97	Reprogramming Probiotic Lactobacillus reuteri as a Biosensor for Staphylococcus aureus Derived AIP-I Detection. *ACS Synthetic Biology*, **2018**, 7, 1229-1237	5.7	38
96	Microscale Bioreactors for in situ characterization of GI epithelial cell physiology. *Scientific Reports*, **2017**, 7, 12515	4.9	36
95	Engineering probiotics for therapeutic applications: recent examples and translational outlook. *Current Opinion in Biotechnology*, **2020**, 65, 171-179	11.4	36
94	Development and characterization of AND-gate dynamic controllers with a modular synthetic GAL1 core promoter in Saccharomyces cerevisiae. *Biotechnology and Bioengineering*, **2014**, 111, 144-51	4.9	36
93	Cefalexin-immobilized multi-walled carbon nanotubes show strong antimicrobial and anti-adhesion properties. *Chemical Engineering Science*, **2012**, 84, 552-556	4.4	36
92	Sequence analysis of GDSL lipase gene family in Arabidopsis thaliana. *Pakistan Journal of Biological Sciences*, **2008**, 11, 763-7	0.8	36
91	Molecular characterization of polycyclic aromatic hydrocarbon (PAH)-degrading methanogenic communities. *Biotechnology Progress*, **2005**, 21, 682-8	2.8	35
90	Molecular cloning, expression profiling and functional analysis of a DXR gene encoding 1-deoxy-D-xylulose 5-phosphate reductoisomerase from Camptotheca acuminata. *Journal of Plant Physiology*, **2008**, 165, 203-13	3.6	35
89	Genetic Biosensor Design for Natural Product Biosynthesis in Microorganisms. *Trends in Biotechnology*, **2020**, 38, 797-810	15.1	34
88	Synthetic biology toolkits and applications in Saccharomyces cerevisiae. *Biotechnology Advances*, **2018**, 36, 1870-1881	17.8	34

87	The absence of the luxS gene increases swimming motility and flagella synthesis in Escherichia coli K12. *Biochemical and Biophysical Research Communications*, **2010**, 401, 521-6	3.4	34
86	Toxicogenomic response of Staphylococcus aureus to peracetic acid. *Environmental Science & Technology*, **2006**, 40, 5124-31	10.3	34
85	Metabolic engineering of Saccharomyces cerevisiae for production of fatty acid short- and branched-chain alkyl esters biodiesel. *Biotechnology for Biofuels*, **2015**, 8, 177	7.8	33
84	Microarray analysis of toxicogenomic effects of peracetic acid on Pseudomonas aeruginosa. *Environmental Science & Technology*, **2005**, 39, 5893-9	10.3	33
83	Evaluation of Metabolic and Synaptic Dysfunction Hypotheses of Alzheimer'S Disease (AD): A Meta-Analysis of CSF Markers. *Current Alzheimer Research*, **2018**, 15, 164-181	3	31
82	A platform of genetically engineered bacteria as vehicles for localized delivery of therapeutics: Toward applications for Crohn'S disease. *Bioengineering and Translational Medicine*, **2018**, 3, 209-221	14.8	30
81	Reprogrammable microbial cell-based therapeutics against antibiotic-resistant bacteria. *Drug Resistance Updates*, **2016**, 27, 59-71	23.2	28
80	Immunomodulation as Therapy for Fungal Infection: Are We Closer?. *Frontiers in Microbiology*, **2018**, 9, 1612	5.7	28
79	Bacterial FadR and synthetic promoters function as modular fatty acid sensor- regulators inSaccharomyces cerevisiae. *Engineering in Life Sciences*, **2013**, 13, 456-463	3.4	28
78	Synthetic Biology Toolkits for Metabolic Engineering of Cyanobacteria. *Biotechnology Journal*, **2019**, 14, e1800496	5.6	27
77	Identification and reconstitution of genetic regulatory networks for improved microbial tolerance to isooctane. *Molecular BioSystems*, **2012**, 8, 1350-8		27
76	Systems-level analysis of Escherichia coli response to silver nanoparticles: the roles of anaerobic respiration in microbial resistance. *Biochemical and Biophysical Research Communications*, **2012**, 424, 657-62	3.4	27
75	Molecular characterization of anaerobic microbial communities from benzene-degrading sediments under methanogenic conditions. *Biotechnology Progress*, **2005**, 21, 1789-94	2.8	27
74	Targeted Approaches for In Situ Gut Microbiome Manipulation. *Genes*, **2018**, 9,	4.2	26
73	Microarray analysis of toxicogenomic effects of triclosan on Staphylococcus aureus. *Applied Microbiology and Biotechnology*, **2008**, 78, 695-707	5.7	25
72	Isolation and characterization of an ERF-like gene from Gossypium barbadense. *Plant Science*, **2004**, 167, 1383-1389	5.3	25
71	Strain improvement and process development for biobutanol production. *Recent Patents on Biotechnology*, **2009**, 3, 202-10	2.2	23
70	Vaccinia-related kinase 1 is required for the maintenance of undifferentiated spermatogonia in mouse male germ cells. *PLoS ONE*, **2010**, 5, e15254	3.7	23

69	Engineering Saccharomyces cerevisiae to produce odd chain-length fatty alcohols. *Biotechnology and Bioengineering*, **2016**, 113, 842-51	4.9	23
68	Overexpression of GbERF confers alteration of ethylene-responsive gene expression and enhanced resistance to Pseudomonas syringae in transgenic tobacco. *Journal of Biosciences*, **2006**, 31, 255-63	2.3	22
67	Toxicogenomic response to chlorination includes induction of major virulence genes in Staphylococcus aureus. *Environmental Science & Technology*, **2007**, 41, 7570-5	10.3	21
66	A time-course transcriptome analysis of Escherichia coli with direct electrochemistry behavior in microbial fuel cells. *Chemical Communications*, **2009**, 6183-5	5.8	20
65	Engineering transcription factors to improve tolerance against alkane biofuels in Saccharomyces cerevisiae. *Biotechnology for Biofuels*, **2015**, 8, 231	7.8	16
64	Engineering Yarrowia lipolytica towards food waste bioremediation: Production of fatty acid ethyl esters from vegetable cooking oil. *Journal of Bioscience and Bioengineering*, **2020**, 129, 31-40	3.3	16
63	Engineering microbes for targeted strikes against human pathogens. *Cellular and Molecular Life Sciences*, **2018**, 75, 2719-2733	10.3	15
62	Tweak to Treat: Reprograming Bacteria for Cancer Treatment. *Trends in Cancer*, **2021**, 7, 447-464	12.5	15
61	Anhydrous polymer-based coating with sustainable controlled release functionality for facile, efficacious impregnation, and delivery of antimicrobial peptides. *Biotechnology and Bioengineering*, **2018**, 115, 2000-2012	4.9	14
60	Targeting FK506 binding proteins to fight malarial and bacterial infections: current advances and future perspectives. *Current Medicinal Chemistry*, **2011**, 18, 1874-89	4.3	14
59	Engineering commensal bacteria to rewire host-microbiome interactions. *Current Opinion in Biotechnology*, **2020**, 62, 116-122	11.4	13
58	One-pot approach for examining the DNA methylation patterns using an engineered methyl-probe. *Biosensors and Bioelectronics*, **2014**, 58, 333-7	11.8	12
57	Molecular characterization of surfactant-driven microbial community changes in anaerobic phenanthrene-degrading cultures under methanogenic conditions. *Biotechnology Letters*, **2008**, 30, 1595-601	3	12
56	Isolated Reporter Bacteria in Supramolecular Hydrogel Microwell Arrays. *Langmuir*, **2017**, 33, 7799-7809	4	11
55	Synthetic yeast genome reveals its versatility. *Nature*, **2018**, 557, 647-648	50.4	11
54	Oleosin fusion expression systems for the production of recombinant proteins. *Biologia (Poland)*, **2007**, 62, 119-123	1.5	11
53	Systems-level characterization and engineering of oxidative stress tolerance in Escherichia coli under anaerobic conditions. *Molecular BioSystems*, **2013**, 9, 285-95		10
52	Isolation of a novel lipase gene from Serratia liquefaciens S33 DB-1, functional expression in Pichia pastoris and its properties. *Molecular Biotechnology*, **2008**, 38, 99-107	3	10

51	Genetic Engineering of an Unconventional Yeast for Renewable Biofuel and Biochemical Production. *Journal of Visualized Experiments*, **2016**,	1.6	9
50	Autoinducer Sensing Microarrays by Reporter Bacteria Encapsulated in Hybrid Supramolecular-Polysaccharide Hydrogels. *Macromolecular Bioscience*, **2017**, 17, 1700176	5.5	9
49	Applying the design-build-test paradigm in microbiome engineering. *Current Opinion in Biotechnology*, **2017**, 48, 85-93	11.4	8
48	Toolkit Development for Cyanogenic and Gold Biorecovery Chassis. *ACS Synthetic Biology*, **2020**, 9, 953-961	5.7	8
47	Designing a synthetic genetic circuit that enables cell density-dependent auto-regulatory lysis for macromolecule release. *Chemical Engineering Science*, **2013**, 103, 29-35	4.4	8
46	Isolation and bioinformatics analyses of a COR413-like gene from Gossypium barbadense. *Acta Physiologiae Plantarum*, **2007**, 29, 1-9	2.6	8
45	An oleaginous yeast platform for renewable 1-butanol synthesis based on a heterologous CoA-dependent pathway and an endogenous pathway. *Microbial Cell Factories*, **2018**, 17, 166	6.4	8
44	Matrix-immobilized yeast for large-scale production of recombinant human lactoferrin. *MedChemComm*, **2015**, 6, 486-491	5	7
43	A predicted immunity protein confers resistance to pyocin S5 in a sensitive strain of Pseudomonas aeruginosa. *ChemBioChem*, **2013**, 14, 2444-6	3.8	7
42	iTRAQ-coupled two-dimensional liquid chromatography/tandem mass spectrometric analysis of protein profile in Escherichia coli incubated with human neutrophil peptide 1--potential in antimicrobial strategy. *Rapid Communications in Mass Spectrometry*, **2010**, 24, 2787-90	2.2	7
41	Meta-Omics- and Metabolic Modeling-Assisted Deciphering of Human Microbiota Metabolism. *Biotechnology Journal*, **2019**, 14, e1800445	5.6	6
40	Rewriting the Metabolic Blueprint: Advances in Pathway Diversification in Microorganisms. *Frontiers in Microbiology*, **2018**, 9, 155	5.7	6
39	Characterization of a quorum sensing device for synthetic biology design: Experimental and modeling validation. *Chemical Engineering Science*, **2013**, 103, 91-99	4.4	6
38	Analysis of Arabidopsis genes encoding putative class III lipases. *Journal of Plant Biochemistry and Biotechnology*, **2012**, 21, 261-267	1.6	5
37	The Divergent Immunomodulatory Effects of Short Chain Fatty Acids and Medium Chain Fatty Acids. *International Journal of Molecular Sciences*, **2021**, 22,	6.3	5
36	Development of a polymer-based antimicrobial coating for efficacious urinary catheter protection. *Biotechnology Notes*, **2021**, 2, 1-10	1.3	5
35	A simple and effective plating method to screen polycyclic aromatic hydrocarbon-degrading bacteria under various redox conditions. *Applied Microbiology and Biotechnology*, **2010**, 88, 291-7	5.7	4
34	Mechanism-Driven Metabolic Engineering for Bio-Based Production of Free -Lipoic Acid in Mitochondria. *Frontiers in Bioengineering and Biotechnology*, **2020**, 8, 965	5.8	3

33	Ectopic overexpression of a cotton plastidial Na transporter GhBASS5 impairs salt tolerance in Arabidopsis via increasing Na loading and accumulation. *Planta*, **2020**, 252, 41	4.7	3
32	Development of a Proline-Based Selection System for Reliable Genetic Engineering in Chinese Hamster Ovary Cells. *ACS Synthetic Biology*, **2020**, 9, 1864-1872	5.7	2
31	Analysis of the RNAi targeting FAD2 gene on oleic acid composition in transgenic plants of Brassica napus. *African Journal of Microbiology Research*, **2011**, 5, 817-822	0.5	2
30	Engineering an Alcohol-Forming Fatty Acyl-CoA Reductase for Aldehyde and Hydrocarbon Biosynthesis in. *Frontiers in Bioengineering and Biotechnology*, **2020**, 8, 585935	5.8	2
29	Future trends in synthetic biology in Asia. *Genetics & Genomics Next*, **2021**, 2, e10038	1.2	2
28	Heterologous expression of cyanobacterial gas vesicle proteins in Saccharomyces cerevisiae. *Biotechnology Journal*, **2021**, 16, e2100059	5.6	2
27	Phage-boosted chemotherapy. *Nature Biomedical Engineering*, **2019**, 3, 680-681	19	1
26	Isolation and characterization of a class III homeodomain-leucine zipper-like gene from Gossypium barbadense. *DNA Sequence*, **2006**, 17, 334-41		1
25	Synthetic biology: at the crossroads of genetic engineering and human therapeutics-a Keystone Symposia report. *Annals of the New York Academy of Sciences*, **2021**,	6.5	1
24	Therapeutic microbes for infectious disease. *Methods in Molecular Biology*, **2014**, 1151, 117-33	1.4	1
23	Synthetic Biology for Biofuels in Saccharomyces cerevisiae **2016**, 1-22		1
22	Synthetic Enzymology and the Fountain of Youth: Repurposing Biology for Longevity. *ACS Omega*, **2018**, 3, 11050-11061	3.9	1
21	Design and fabrication of field-deployable microbial biosensing devices.. *Current Opinion in Biotechnology*, **2022**, 76, 102731	11.4	1
20	Engineered microbial systems for advanced drug delivery. *Advanced Drug Delivery Reviews*, **2022**, 187, 114364	18.5	1
19	Potential use of microbial engineering in single-cell protein production. *Current Opinion in Biotechnology*, **2022**, 76, 102740	11.4	1
18	A novel synchronization approach using synthetic magnetic. *Synthetic and Systems Biotechnology*, **2019**, 4, 130-131	4.2	0
17	Biosynthesis of Commodity Chemicals From Oil Palm Empty Fruit Bunch Lignin. *Frontiers in Microbiology*, **2021**, 12, 663642	5.7	0
16	Engineered probiotics modulate the endocannabinoid system. *Biotechnology Notes*, **2021**, 2, 33-38	1.3	0

15	Living building blocks.. *Nature Materials*, **2022**, 21, 382-383	27	0
14	Transporter-Driven Engineering of a Genetic Biosensor for the Detection and Production of Short-Branched Chain Fatty Acids in .. *Frontiers in Bioengineering and Biotechnology*, **2022**, 10, 838732	5.8	0
13	Drug Targeting of the Human Microbiome **2017**, 191-214		
12	Synthetic Biology for Biofuels in Saccharomyces cerevisiae **2017**, 133-154		
11	Toxicogenomic Response of Staphylococcus aureus to Triclosan. *FASEB Journal*, **2008**, 22, 1023.1	0.9	
10	Synthetic Biology for Biofuels in Saccharomyces cerevisiae **2017**, 1-22		
9	Transcription Factor-Based Biosensors and Their Application in Microbiome Engineering **2022**, 277-304		
8	Maternal Microbiota as a Therapeutic Target **2022**, 233-275		
7	Fecal Microbiota Transplantation for Microbiome Modulation: A Clinical View **2022**, 219-232		
6	Microbiome Engineering for Metabolic Disorders **2022**, 47-91		
5	Biological Sensors for Microbiome Diagnostics **2022**, 155-194		
4	Diet-Based Microbiome Modulation: You are What You Eat **2022**, 1-46		
3	Modulating Residence Time and Biogeography of Engineered Probiotics **2022**, 121-136		
2	Principles, Tools, and Applications of Synthetic Consortia Toward Microbiome Engineering **2022**, 195-218		
1	Microbiome Engineering for Next-Generation Precision Agriculture **2022**, 137-153		