Scott Banta

List of Publications by Year in descending order

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100	3,738	126858	143943
papers	citations	33 h-index	57 g-index

105	105	105	4690
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Substrate channelling as an approach to cascade reactions. Nature Chemistry, 2016, 8, 299-309.	6.6	514
2	Engineering of Glucose Oxidase for Direct Electron Transfer via Site-Specific Gold Nanoparticle Conjugation. Journal of the American Chemical Society, 2011, 133, 19262-19265.	6.6	238
3	Protein Engineering in the Development of Functional Hydrogels. Annual Review of Biomedical Engineering, 2010, 12, 167-186.	5.7	135
4	Engineering enzyme microenvironments for enhanced biocatalysis. Chemical Society Reviews, 2018, 47, 5177-5186.	18.7	120
5	Oxygen-reducing enzyme cathodes produced from SLAC, a small laccase from Streptomyces coelicolor. Biosensors and Bioelectronics, 2008, 23, 1229-1235.	5.3	109
6	Functional assembly of a multi-enzyme methanol oxidation cascade on a surface-displayed trifunctional scaffold for enhanced NADH production. Chemical Communications, 2013, 49, 3766.	2.2	90
7	Metabolic Engineering: Advances in Modeling and Intervention in Health and Disease. Annual Review of Biomedical Engineering, 2003, 5, 349-381.	5.7	89
8	Design and application of stimulus-responsive peptide systems. Protein Engineering, Design and Selection, 2007, 20, 155-161.	1.0	89
9	Enzymatic biofuel cells utilizing a biomimetic cofactor. Chemical Communications, 2012, 48, 1898.	2.2	85
10	Complete Oxidation of Methanol in Biobattery Devices Using a Hydrogel Created from Three Modified Dehydrogenases. Angewandte Chemie - International Edition, 2013, 52, 1437-1440.	7.2	84
11	Development of a Troponin I Biosensor Using a Peptide Obtained through Phage Display. Analytical Chemistry, 2010, 82, 8235-8243.	3.2	78
12	Replacing Antibodies: Engineering New Binding Proteins. Annual Review of Biomedical Engineering, 2013, 15, 93-113.	5.7	78
13	Direct Evidence for Metabolon Formation and Substrate Channeling in Recombinant TCA Cycle Enzymes. ACS Chemical Biology, 2016, 11, 2847-2853.	1.6	75
14	Bioelectrocatalytic hydrogels from electron-conducting metallopolypeptides coassembled with bifunctional enzymatic building blocks. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 15275-15280.	3.3	66
15	High affinity peptides for the recognition of the heart disease biomarker troponin I identified using phage display. Biotechnology and Bioengineering, 2010, 105, 678-686.	1.7	64
16	Bioactive Proteinaceous Hydrogels from Designed Bifunctional Building Blocks. Biomacromolecules, 2007, 8, 2990-2994.	2.6	62
17	Detection of the Superoxide Radical Anion Using Various Alkanethiol Monolayers and Immobilized Cytochrome c. Analytical Chemistry, 2008, 80, 9622-9629.	3.2	61
18	A dual enzyme electrochemical assay for the detection of organophosphorus compounds using organophosphorus hydrolase and horseradish peroxidase. Sensors and Actuators B: Chemical, 2011, 158, 353-360.	4.0	56

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19	Optimizing an Artificial Metabolic Pathway:Â Engineering the Cofactor Specificity ofCorynebacterium2,5-Diketo-d-gluconic Acid Reductase for Use in Vitamin C Biosynthesisâ€. Biochemistry, 2002, 41, 6226-6236.	1.2	53
20	Reversibility of the Adsorption of Lysozyme on Silica. Langmuir, 2011, 27, 11873-11882.	1.6	52
21	Alteration of the specificity of the cofactor-binding pocket of Corynebacterium 2,5-diketo-D-gluconic acid reductase A. Protein Engineering, Design and Selection, 2002, 15, 131-140.	1.0	51
22	A Chimeric Fusion Protein Engineered with Disparate Functionalitiesâ€"Enzymatic Activity and Selfâ€“assembly. Journal of Molecular Biology, 2009, 392, 129-142.	2.0	51
23	Broadening the cofactor specificity of a thermostable alcohol dehydrogenase using rational protein design introduces novel kinetic transient behavior. Biotechnology and Bioengineering, 2010, 107, 763-774.	1.7	51
24	Catalytic biomaterials: engineering organophosphate hydrolase to form self-assembling enzymatic hydrogels. Protein Engineering, Design and Selection, 2010, 23, 559-566.	1.0	48
25	Calcium-Induced Folding of a Beta Roll Motif Requires C-Terminal Entropic Stabilization. Journal of Molecular Biology, 2010, 400, 244-256.	2.0	47
26	Engineering the ironâ€oxidizing chemolithoautotroph Acidithiobacillus ferrooxidans for biochemical production. Biotechnology and Bioengineering, 2016, 113, 189-197.	1.7	46
27	Rapid Development of New Protein Biosensors Utilizing Peptides Obtained via Phage Display. PLoS ONE, 2011, 6, e24948.	1.1	45
28	Engineering of an Environmentally Responsive Beta Roll Peptide for Use As a Calcium-Dependent Cross-Linking Domain for Peptide Hydrogel Formation. Biomacromolecules, 2012, 13, 1758-1764.	2.6	45
29	A FRET-Based Method for Probing the Conformational Behavior of an Intrinsically Disordered Repeat Domain fromBordetella pertussisAdenylate Cyclase. Biochemistry, 2009, 48, 11273-11282.	1.2	44
30	Engineering Protein and Peptide Building Blocks for Nanotechnology. Journal of Nanoscience and Nanotechnology, 2007, 7, 387-401.	0.9	43
31	Biomass Production from Electricity Using Ammonia as an Electron Carrier in a Reverse Microbial Fuel Cell. PLoS ONE, 2012, 7, e44846.	1.1	42
32	Evolution of intrahepatic carbon, nitrogen, and energy metabolism in a D-galactosamine-induced rat liver failure model. Metabolic Engineering, 2005, 7, 88-103.	3.6	40
33	An Unusual Cell Penetrating Peptide Identified Using a Plasmid Display-Based Functional Selection Platform. ACS Chemical Biology, 2011, 6, 484-491.	1.6	36
34	Contribution of gene expression to metabolic fluxes in hypermetabolic livers induced through burn injury and cecal ligation and puncture in rats. Biotechnology and Bioengineering, 2007, 97, 118-137.	1.7	34
35	Paper based biofuel cells: Incorporating enzymatic cascades for ethanol and methanol oxidation. International Journal of Hydrogen Energy, 2015, 40, 14661-14666.	3.8	33
36	Metals and minerals as a biotechnology feedstock: engineering biomining microbiology for bioenergy applications. Current Opinion in Biotechnology, 2017, 45, 144-155.	3.3	33

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37	Metabolic control analysis of an enzymatic biofuel cell. Biotechnology and Bioengineering, 2009, 102, 1624-1635.	1.7	32
38	TAT Is Not Capable of Transcellular Delivery Across an Intact Endothelial Monolayer In Vitro. Annals of Biomedical Engineering, 2011, 39, 394-401.	1.3	29
39	Improving the Performance of Methanol Biofuel Cells Utilizing an Enzyme Cascade Bioanode with DNA-Bridged Substrate Channeling. ACS Energy Letters, 2017, 2, 1435-1438.	8.8	28
40	Genetic engineering of the acidophilic chemolithoautotroph Acidithiobacillus ferrooxidans. Trends in Biotechnology, 2022, 40, 677-692.	4.9	28
41	Periplasmic expression of carbonic anhydrase in Escherichia coli: A new biocatalyst for CO₂ hydration. Biotechnology and Bioengineering, 2013, 110, 1865-1873.	1.7	27
42	Effects of Dehydroepiandrosterone Administration on Rat Hepatic Metabolism Following Thermal Injury. Journal of Surgical Research, 2005, 127, 93-105.	0.8	25
43	TATâ€mediated intracellular protein delivery to primary brain cells is dependent on glycosaminoglycan expression. Biotechnology and Bioengineering, 2009, 104, 10-19.	1.7	25
44	Modular exchange of substrate-binding loops alters both substrate and cofactor specificity in a member of the aldo-keto reductase superfamily. Protein Engineering, Design and Selection, 2013, 26, 181-186.	1.0	25
45	Extreme makeover: Engineering the activity of a thermostable alcohol dehydrogenase (AdhD) from Pyrococcus furiosus. Biotechnology Journal, 2016, 11, 1483-1497.	1.8	24
46	Transposase-Mediated Chromosomal Integration of Exogenous Genes in Acidithiobacillus ferrooxidans. Applied and Environmental Microbiology, 2018, 84, .	1.4	24
47	Structural alteration of cofactor specificity in Corynebacterium 2,5-diketo-D-gluconic acid reductase. Protein Science, 2004, 13, 504-512.	3.1	23
48	Microenvironmental effects can masquerade as substrate channelling in cascade biocatalysis. Current Opinion in Biotechnology, 2022, 73, 233-239.	3.3	23
49	Doubling the Cross-Linking Interface of a Rationally Designed Beta Roll Peptide for Calcium-Dependent Proteinaceous Hydrogel Formation. Biomacromolecules, 2014, 15, 3617-3624.	2.6	21
50	Addition of citrate to Acidithiobacillus ferrooxidans cultures enables precipitateâ€free growth at elevated pH and reduces ferric inhibition. Biotechnology and Bioengineering, 2014, 111, 1940-1948.	1.7	21
51	Development of reactor configurations for an electrofuels platform utilizing genetically modified iron oxidizing bacteria for the reduction of CO2 to biochemicals. Journal of Biotechnology, 2017, 245, 21-27.	1.9	21
52	Characterization of endogenous promoters for control of recombinant gene expression in Acidithiobacillus ferrooxidans. Biotechnology and Applied Biochemistry, 2017, 64, 793-802.	1.4	21
53	Increased delivery of TAT across an endothelial monolayer following ischemic injury. Neuroscience Letters, 2010, 486, 1-4.	1.0	20
54	Mathematical Modeling of in vitro Enzymatic Production of 2-Keto-L-gulonic Acid Using NAD(H) or NADP(H) as Cofactors. Metabolic Engineering, 2002, 4, 273-284.	3.6	19

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55	Characterization of the 4D5Flu singleâ€chain antibody with a stimulusâ€responsive elastinâ€like peptide linker: A potential reporter of peptide linker conformation. Protein Science, 2008, 17, 527-536.	3.1	18
56	Creation of a formate: malate oxidoreductase by fusion of dehydrogenase enzymes with PEGylated cofactor swing arms. Protein Engineering, Design and Selection, 2018, 31, 103-108.	1.0	18
57	Enhanced microbial corrosion of stainless steel by Acidithiobacillus ferrooxidans through the manipulation of substrate oxidation and overexpression of rus. Biotechnology and Bioengineering, 2020, 117, 3475-3485.	1.7	18
58	Enhancing isobutyric acid production from engineered Acidithiobacillus ferrooxidans cells via media optimization. Biotechnology and Bioengineering, 2016, 113, 790-796.	1.7	16
59	Bifunctional chimeric fusion proteins engineered for DNA delivery: Optimization of the protein to DNA ratio. Biochimica Et Biophysica Acta - General Subjects, 2009, 1790, 198-207.	1.1	15
60	Monitoring the conformational changes of an intrinsically disordered peptide using a quartz crystal microbalance. Protein Science, 2011, 20, 925-930.	3.1	15
61	A designed, phase changing RTX-based peptide for efficient bioseparations. BioTechniques, 2013, 54, 197-206.	0.8	14
62	Microbially Influenced Corrosion of Stainless Steel by Acidithiobacillus ferrooxidans Supplemented with Pyrite: Importance of Thiosulfate. Applied and Environmental Microbiology, 2019, 85, .	1.4	14
63	Dispersion of sulfur creates a valuable new growth medium formulation that enables earlier sulfur oxidation in relation to iron oxidation in Acidithiobacillus ferrooxidans cultures. Biotechnology and Bioengineering, 2021, 118, 3225-3238.	1.7	14
64	Quantitative effects of thermal injury and insulin on the metabolism of the skeletal muscle using the perfused rat hindquarter preparation. Biotechnology and Bioengineering, 2004, 88, 613-629.	1.7	13
65	Engineering the cofactor specificity of an alcohol dehydrogenase via single mutations or insertions distal to the 2â€²-phosphate group of NADP(H). Protein Engineering, Design and Selection, 2017, 30, 373-380.	1.0	13
66	Catalysis of Thermostable Alcohol Dehydrogenase Improved by Engineering the Microenvironment through Fusion with Supercharged Proteins. ChemBioChem, 2019, 20, 1827-1837.	1.3	13
67	The importance and future of biochemical engineering. Biotechnology and Bioengineering, 2020, 117, 2305-2318.	1.7	13
68	Rearranging and concatenating a native RTX domain to understand sequence modularity. Protein Engineering, Design and Selection, 2013, 26, 171-180.	1.0	12
69	Catch and Release: Engineered Allosterically Regulated Î²-Roll Peptides Enable On/Off Biomolecular Recognition. ACS Synthetic Biology, 2017, 6, 1732-1741.	1.9	12
70	Engineering <scp>A</scp>cidithiobacillus ferrooxidans growth media for enhanced electrochemical processing. AICHE Journal, 2014, 60, 4008-4013.	1.8	11
71	Insertion of a Calcium-Responsive Î²-Roll Domain into a Thermostable Alcohol Dehydrogenase Enables Tunable Control over Cofactor Selectivity. ACS Catalysis, 2018, 8, 1602-1613.	5.5	11
72	Constraining the Impact of Bacteria on the Aqueous Atmospheric Chemistry of Small Organic Compounds. ACS Earth and Space Chemistry, 2019, 3, 1485-1491.	1.2	11

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73	Computational structure prediction provides a plausible mechanism for electron transfer by the outer membrane protein Cyc2 from Acidithiobacillus ferrooxidans. Protein Science, 2021, 30, 1640-1652.	3.1	11
74	Glutathione Synthetase Overexpression in Acidithiobacillus ferrooxidans Improves Halotolerance of Iron Oxidation. Applied and Environmental Microbiology, 2021, 87, e0151821.	1.4	10
75	Verification of a Novel NADH-Binding Motif: Combinatorial Mutagenesis of Three Amino Acids in the Cofactor-Binding Pocket of Corynebacterium 2,5-Diketo-D-Gluconic Acid Reductase. Journal of Molecular Evolution, 2002, 55, 623-631.	0.8	9
76	Conditional Network Assembly and Targeted Protein Retention via Environmentally Responsive, Engineered Î²-Roll Peptides. Biomacromolecules, 2017, 18, 2139-2145.	2.6	9
77	Pushing the limits of automatic computational protein design: design, expression, and characterization of a large synthetic protein based on a fungal laccase scaffold. Systems and Synthetic Biology, 2011, 5, 45-58.	1.0	8
78	Attenuation of Astrocyte Activation by TAT-Mediated Delivery of a Peptide JNK Inhibitor. Journal of Neurotrauma, 2011, 28, 1219-1228.	1.7	8
79	Effect of thermal stability on protein adsorption to silica using homologous aldoâ€keto reductases. Protein Science, 2012, 21, 1113-1125.	3.1	8
80	Genetic Manipulation of Outer Membrane Permeability: Generating Porous Heterogeneous Catalyst Analogs in Escherichia coli. ACS Synthetic Biology, 2014, 3, 848-854.	1.9	8
81	Designed protein aggregates entrapping carbon nanotubes for bioelectrochemical oxygen reduction. Biotechnology and Bioengineering, 2016, 113, 2321-2327.	1.7	8
82	Block V RTX Domain of Adenylate Cyclase from Bordetella pertussis: A Conformationally Dynamic Scaffold for Protein Engineering Applications. Toxins, 2017, 9, 289.	1.5	8
83	Kinetic and transport effects on enzymatic biocatalysis resulting from the PEGylation of cofactors. AICHE Journal, 2018, 64, 12-17.	1.8	8
84	Multimerization of an Alcohol Dehydrogenase by Fusion to a Designed Self-Assembling Protein Results in Enhanced Bioelectrocatalytic Operational Stability. ACS Applied Materials & Interfaces, 2019, 11, 20022-20028.	4.0	7
85	Engineering of a redox protein for DNA-directed assembly. Chemical Communications, 2011, 47, 7464.	2.2	6
86	A plasmid display platform for the selection of peptides exhibiting a functional cellâ€penetrating phenotype. Biotechnology Progress, 2010, 26, 1796-1800.	1.3	5
87	Surface display of small peptides onEscherichia colifor enhanced calcite precipitation rates. Biopolymers, 2014, 102, 191-196.	1.2	5
88	Functional interfaces for biomimetic energy harvesting: CNTs-DNA matrix for enzyme assembly. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 612-620.	0.5	5
89	Theory-Based Development of Performance Metrics for Comparing Multireactant Enzymes. ACS Catalysis, 2020, 10, 1123-1132.	5.5	5
90	Engineering Polyhistidine Tags on Surface Proteins of Acidithiobacillus ferrooxidans: Impact of Localization on the Binding and Recovery of Divalent Metal Cations. ACS Applied Materials & Interfaces, 2022, 14, 10125-10133.	4.0	5

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91	An automated method for measuring the operational stability of biocatalysts with carbonic anhydrase activity. Biochemical Engineering Journal, 2014, 82, 48-52.	1.8	4
92	Enzyme colocalization in protein-based hydrogels. Methods in Enzymology, 2019, 617, 265-285.	0.4	3
93	Impact of Anode on Product Formation During the Electrochemical Reduction of Chalcopyrite. Jom, 2020, 72, 3818-3825.	0.9	3
94	NAD(H)â€PEG Swing Arms Improve Both the Activities and Stabilities of Modularlyâ€Assembled Transhydrogenases Designed with Predictable Selectivities. ChemBioChem, 2021, , .	1.3	3
95	Development of a bacteriophage-based system for the selection of structured peptides. Analytical Biochemistry, 2009, 388, 122-127.	1.1	2
96	Calcium-Dependent RTX Domains in the Development of Protein Hydrogels. Gels, 2019, 5, 10.	2.1	2
97	Engineered Biomolecular Recognition of RDX by Using a Thermostable Alcohol Dehydrogenase as a Protein Scaffold. ChemBioChem, 2018, 19, 247-255.	1.3	1
98	Engineering of functional proteinaceous hydrogels for biotechnology applications. , 2014, , .		0
99	Editorial overview: Energy biotechnology. Current Opinion in Biotechnology, 2017, 45, v-viii.	3.3	0
100	Markov State Study of Electrostatic Channeling within the Tricarboxylic Acid Cycle Supercomplex. ACS Nanoscience Au, 2022, 2, 414-421.	2.0	0