

B Wayne Bequette

List of Publications by Year in descending order

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Version: 2024-02-01

110
papers

4,442
citations

109137

35
h-index

110170

64
g-index

111
all docs

111
docs citations

111
times ranked

2337
citing authors

#	ARTICLE	IF	CITATIONS
1	A Glycemia Risk Index (GRI) of Hypoglycemia and Hyperglycemia for Continuous Glucose Monitoring Validated by Clinician Ratings. Journal of Diabetes Science and Technology, 2023, 17, 1226-1242.	1.3	69
2	A New Meal Absorption Model for Artificial Pancreas Systems. Journal of Diabetes Science and Technology, 2022, 16, 40-51.	1.3	5
3	Spectral Graph Theoretic analysis of process systems: an application to distillation columns. Computers and Chemical Engineering, 2022, 161, 107748.	2.0	3
4	Diabetes Technology Meeting 2021. Journal of Diabetes Science and Technology, 2022, , 193229682210902.	1.3	2
5	A graph signal processing-based multiple model Kalman filter (GSP-MMKF) tool for predictive analytics: An air separation unit process application. Journal of Advanced Manufacturing and Processing, 2022, 4, .	1.4	2
6	Optimization-based control using input convex neural networks. Computers and Chemical Engineering, 2021, 144, 107143.	2.0	9
7	Human-in-the-Loop Insulin Dosing. Journal of Diabetes Science and Technology, 2021, 15, 699-704.	1.3	10
8	Automated Insulin Dosing for Type 1 Diabetes. , 2021, , 95-105.		0
9	Fault Tolerant Strategies for Automated Insulin Delivery Considering the Human Component: Current and Future Perspectives. Journal of Diabetes Science and Technology, 2021, 15, 1224-1231.	1.3	4
10	Diabetes Technology Meeting 2020. Journal of Diabetes Science and Technology, 2021, 15, 916-960.	1.3	1
11	A Hybrid Automata Approach for Monitoring the Patient in the Loop in Artificial Pancreas Systems. Sensors, 2021, 21, 7117.	2.1	3
12	Process Systems Engineering and the Human-in-The-Loop: The Smart Control Room. Industrial & Engineering Chemistry Research, 2020, 59, 2422-2429.	1.8	11
13	Hybrid Modeling in the Era of Smart Manufacturing. Computers and Chemical Engineering, 2020, 140, 106874.	2.0	44
14	Automated Insulin Dosing for Type 1 Diabetes. , 2020, , 1-11.		0
15	<i>110th Anniversary:</i> Commentary: The Smart Human in Smart Manufacturing. Industrial & Engineering Chemistry Research, 2019, 58, 19317-19321.	1.8	8
16	A Framework for the Control Room of the Future: Human-in-the-loop MPC. IFAC-PapersOnLine, 2019, 51, 252-257.	0.5	3
17	Models, Devices, Properties, and Verification of Artificial Pancreas Systems. Computational Biology, 2019, , 93-131.	0.1	6
18	Process control practice and education: Past, present and future. Computers and Chemical Engineering, 2019, 128, 538-556.	2.0	24

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19	Sensor-based detection and estimation of meal carbohydrates for people with diabetes. Biomedical Signal Processing and Control, 2019, 48, 12-25.	3.5	19
20	Fully Closed-Loop Multiple Model Probabilistic Predictive Controller Artificial Pancreas Performance in Adolescents and Adults in a Supervised Hotel Setting. Diabetes Technology and Therapeutics, 2018, 20, 335-343.	2.4	64
21	Real-Time Detection of Infusion Site Failures in a Closed-Loop Artificial Pancreas. Journal of Diabetes Science and Technology, 2018, 12, 599-607.	1.3	21
22	An automated meal detector and bolus calculator in combination with closed-loop blood glucose control. IFAC-PapersOnLine, 2018, 51, 168-173.	0.5	2
23	Using Cognitive Computing for the Control Room of the Future. Computer Aided Chemical Engineering, 2018, 44, 649-654.	0.3	3
24	Innovations in Process Control Education: A Flipped Classroom/Studio Approach. Computer Aided Chemical Engineering, 2018, 44, 63-70.	0.3	0
25	Wearable Device Based Activity Recognition and Prediction for Improved Feedforward Control. , 2018, , .		14
26	Predictive Hyperglycemia and Hypoglycemia Minimization: In-Home Evaluation of Safety, Feasibility, and Efficacy in Overnight Glucose Control in Type 1 Diabetes. Diabetes Care, 2017, 40, 359-366.	4.3	20
27	Application of Zone Model Predictive Control Artificial Pancreas During Extended Use of Infusion Set and Sensor: A Randomized Crossover-Controlled Home-Use Trial. Diabetes Care, 2017, 40, 1096-1102.	4.3	46
28	A Review of Safety and Hazards Associated With the Artificial Pancreas. IEEE Reviews in Biomedical Engineering, 2017, 10, 44-62.	13.1	28
29	Closed-Loop Control Without Meal Announcement in Type 1 Diabetes. Diabetes Technology and Therapeutics, 2017, 19, 527-532.	2.4	87
30	Continuous Glucose Monitoring Enables the Detection of Losses in Infusion Set Actuation (LISAs). Sensors, 2017, 17, 161.	2.1	21
31	Algorithms for a Single Hormone Closed-Loop Artificial Pancreas: Challenges Pertinent to Chemical Process Operations and Control. Processes, 2016, 4, 39.	1.3	4
32	Hypo- and Hyperglycemic Alarms. Journal of Diabetes Science and Technology, 2015, 9, 1126-1137.	1.3	25
33	A differential simulator using past clinical trial data to run simulated clinical trials. , 2015, , .		6
34	Predictive Low-Glucose Insulin Suspension Reduces Duration of Nocturnal Hypoglycemia in Children Without Increasing Ketosis. Diabetes Care, 2015, 38, 1197-1204.	4.3	129
35	Inpatient Trial of an Artificial Pancreas Based on Multiple Model Probabilistic Predictive Control with Repeated Large Unannounced Meals. Diabetes Technology and Therapeutics, 2014, 16, 728-734.	2.4	48
36	A Model of Glucose-Insulin-Pramlintide Pharmacokinetics and Pharmacodynamics in Type I Diabetes. Journal of Diabetes Science and Technology, 2014, 8, 529-542.	1.3	7

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37	A Novel Method to Detect Pressure-Induced Sensor Attenuations (PISA) in an Artificial Pancreas. Journal of Diabetes Science and Technology, 2014, 8, 1091-1096.	1.3	64
38	Control in Physiology and Medicine. , 2014, , 13-44.		1
39	Fault Detection and Safety in Closed-Loop Artificial Pancreas Systems. Journal of Diabetes Science and Technology, 2014, 8, 1204-1214.	1.3	39
40	Intensive insulin therapy for critically ill subjects based on direct data-driven model predictive control. Journal of Process Control, 2014, 24, 493-503.	1.7	12
41	The Impact of Accelerometer and Heart Rate Data on Hypoglycemia Mitigation in Type 1 Diabetes. Journal of Diabetes Science and Technology, 2014, 8, 64-69.	1.3	42
42	A Randomized Trial of a Home System to Reduce Nocturnal Hypoglycemia in Type 1 Diabetes. Diabetes Care, 2014, 37, 1885-1891.	4.3	141
43	Sensitivity Analysis of a Predictive Pump Suspension System to Treat People with Type 1 Diabetes. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 243-248.	0.4	1
44	Hypoglycemia Prevention Using Low Glucose Suspend Systems. Lecture Notes in Bioengineering, 2014, , 73-89.	0.3	7
45	Design and Control of an Elevated-Pressure Air Separations Unit for IGCC Power Plants in a Process Simulator Environment. Industrial & Engineering Chemistry Research, 2013, 52, 3178-3191.	1.8	29
46	Outpatient Safety Assessment of an In-Home Predictive Low-Glucose Suspend System with Type 1 Diabetes Subjects at Elevated Risk of Nocturnal Hypoglycemia. Diabetes Technology and Therapeutics, 2013, 15, 622-627.	2.4	89
47	Algorithms for a Closed-Loop Artificial Pancreas: The Case for Model Predictive Control. Journal of Diabetes Science and Technology, 2013, 7, 1632-1643.	1.3	88
48	Detecting sensor and insulin infusion set anomalies in an artificial pancreas. , 2013, , .		9
49	Dynamic Maximization of Oxygen Yield in an Elevated-Pressure Air Separation Unit using Multiple Model Predictive Control. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 196-202.	0.4	7
50	Pilot Study of a Prototype Minimally Invasive Intradermal Continuous Glucose Monitor. Journal of Diabetes Science and Technology, 2012, 6, 1454-1463.	1.3	2
51	Inpatient Studies of a Kalman-Filter-Based Predictive Pump Shutoff Algorithm. Journal of Diabetes Science and Technology, 2012, 6, 1142-1147.	1.3	53
52	Challenges and recent progress in the development of a closed-loop artificial pancreas. Annual Reviews in Control, 2012, 36, 255-266.	4.4	155
53	Extended multiple model prediction with application to blood glucose regulation. Journal of Process Control, 2012, 22, 1422-1432.	1.7	66
54	A habituating blood glucose control strategy for the critically ill. Journal of Process Control, 2012, 22, 1411-1421.	1.7	7

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55	Anticipatory Behavior in Blood Glucose Control: Using Meal Prior Probabilities to Prepare for Future Meal Disturbances. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 3771-3776.	0.4	2
56	Mean Glucose Slope " Principal Component Analysis Classification to Detect Insulin Infusion Set Failure. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 14127-14132.	0.4	3
57	Multivariate statistical analysis to detect insulin infusion set failure. , 2011, , .		7
58	A Closed-Loop Artificial Pancreas Based on Risk Management. Journal of Diabetes Science and Technology, 2011, 5, 368-379.	1.3	70
59	A Controlled Study of the Effectiveness of an Adaptive Closed-Loop Algorithm to Minimize Corticosteroid-Induced Stress Hyperglycemia in Type 1 Diabetes. Journal of Diabetes Science and Technology, 2011, 5, 1312-1326.	1.3	34
60	Continuous Glucose Monitoring: Real-Time Algorithms for Calibration, Filtering, and Alarms. Journal of Diabetes Science and Technology, 2010, 4, 404-418.	1.3	217
61	Real-Time Hypoglycemia Prediction Suite Using Continuous Glucose Monitoring. Diabetes Care, 2010, 33, 1249-1254.	4.3	120
62	Prevention of Nocturnal Hypoglycemia Using Predictive Alarm Algorithms and Insulin Pump Suspension. Diabetes Care, 2010, 33, 1013-1017.	4.3	152
63	Process design and control studies of an elevated-pressure air separations unit for IGCC power plants. , 2010, , .		8
64	Multiple Model Predictive Control Strategy for Disturbance Rejection. Industrial & Engineering Chemistry Research, 2010, 49, 7983-7989.	1.8	30
65	Preface to the Edgar Special Issue. Industrial & Engineering Chemistry Research, 2010, 49, 7701-7703.	1.8	0
66	An augmented multiple model strategy for disturbance estimation and control. , 2009, , .		0
67	<i>In Silico</i> Preclinical Trials: Methodology and Engineering Guide to Closed-Loop Control in Type 1 Diabetes Mellitus. Journal of Diabetes Science and Technology, 2009, 3, 269-282.	1.3	70
68	Glucose Clamp Algorithms and Insulin Time-Action Profiles. Journal of Diabetes Science and Technology, 2009, 3, 1005-1013.	1.3	34
69	A systematic methodology for the evaluation of alternative thermochemical cycles for hydrogen production. International Journal of Hydrogen Energy, 2009, 34, 4146-4154.	3.8	23
70	A Closed-Loop Artificial Pancreas Using Model Predictive Control and a Sliding Meal Size Estimator. Journal of Diabetes Science and Technology, 2009, 3, 1082-1090.	1.3	116
71	A Hybrid Model Framework for the Optimization of Preparative Chromatographic Processes. Biotechnology Progress, 2008, 20, 162-178.	1.3	34
72	Detection of a Meal Using Continuous Glucose Monitoring. Diabetes Care, 2008, 31, 295-300.	4.3	118

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73	Improved nonlinear predictive control performance using recurrent neural networks. , 2008, , .		1
74	A Closed-loop Artificial Pancreas based on MPC: human-friendly identification and automatic meal disturbance rejection. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 4252-4257.	0.4	11
75	Hypoglycemia Detection and Prediction Using Continuous Glucose Monitoringâ€”A Study on Hypoglycemic Clamp Data. Journal of Diabetes Science and Technology, 2007, 1, 624-629.	1.3	75
76	Analysis of Algorithms for Intensive Care Unit Blood Glucose Control. Journal of Diabetes Science and Technology, 2007, 1, 813-824.	1.3	23
77	Multiple Model Predictive Control: A State Estimation based Approach. Proceedings of the American Control Conference, 2007, , .	0.0	15
78	Nonâ€”Linear Model Predictive Control: A Personal Retrospective. Canadian Journal of Chemical Engineering, 2007, 85, 408-415.	0.9	38
79	A tutorial on biomedical process control. Journal of Process Control, 2007, 17, 571-572.	1.7	38
80	Discussion on: â€œA Stacked Model Structure for Off-Line Parameter Variation Estimation in Multi-equilibria Nonlinear Systemsâ€• European Journal of Control, 2006, 12, 365-367.	1.6	0
81	Computationally Efficient Neural Predictive Control Based on a Feedforward Architecture. Industrial & Engineering Chemistry Research, 2006, 45, 8575-8582.	1.8	18
82	Hydrogen and sustainable fuels. IEEE Control Systems, 2006, 26, 84-92.	1.0	1
83	Renovating the undergraduate process control course. Computers and Chemical Engineering, 2006, 30, 1749-1762.	2.0	32
84	A Dual-Rate Kalman Filter for Continuous Glucose Monitoring. , 2006, 2006, 63-6.		41
85	A Critical Assessment of Algorithms and Challenges in the Development of a Closed-Loop Artificial Pancreas. Diabetes Technology and Therapeutics, 2005, 7, 28-47.	2.4	245
86	Hypoglycemia Prediction and Detection Using Optimal Estimation. Diabetes Technology and Therapeutics, 2005, 7, 3-14.	2.4	82
87	Multiobjective optimization strategies for linear gradient chromatography. AIChE Journal, 2005, 51, 511-525.	1.8	26
88	Editorial: Symposium on Algorithms for Continuous Glucose Monitoring and Control. Diabetes Technology and Therapeutics, 2005, 7, 1-2.	2.4	1
89	"Intelligent Dosing System": Need for Design and Analysis Based on Control Theory. Diabetes Technology and Therapeutics, 2004, 6, 868-873.	2.4	5
90	Experimental studies on multiple-model predictive control for automated regulation of hemodynamic variables. IEEE Transactions on Biomedical Engineering, 2003, 50, 277-288.	2.5	91

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91	Evolutionary operation and control of chromatographic processes. <i>AIChE Journal</i> , 2003, 49, 82-95.	1.8	17
92	Relay Autotuning of Cascade-Controlled Open-Loop Unstable Reactors. <i>Industrial & Engineering Chemistry Research</i> , 2003, 42, 4488-4494.	1.8	15
93	Product property and production rate control of styrene polymerization. <i>Journal of Process Control</i> , 2002, 12, 353-372.	1.7	117
94	Optimization of ion-exchange displacement separations. <i>Journal of Chromatography A</i> , 2000, 876, 51-62.	1.8	29
95	Simultaneous Regulation of Hemodynamic and Anesthetic States: A Simulation Study. <i>Annals of Biomedical Engineering</i> , 2000, 28, 71-84.	1.3	23
96	Control of a Nonsquare Drug Infusion System: A Simulation Study. <i>Biotechnology Progress</i> , 1999, 15, 556-564.	1.3	8
97	Computer applications in process dynamics and control courses. <i>Computer Applications in Engineering Education</i> , 1998, 6, 193-200.	2.2	3
98	State-Space versus Input/Output Representations for Cascade Control of Unstable Systems. <i>Industrial & Engineering Chemistry Research</i> , 1997, 36, 2271-2278.	1.8	32
99	Nonlinear model-predictive control: Closed-loop stability analysis. <i>AIChE Journal</i> , 1996, 42, 3388-3402.	1.8	36
100	Issues in the Design of a Multirate Model-Based Controller for a Nonlinear Drug Infusion System. <i>Biotechnology Progress</i> , 1995, 11, 318-332.	1.3	39
101	Impact of process design on the multiplicity behavior of a jacketed exothermic CSTR. <i>AIChE Journal</i> , 1995, 41, 135-147.	1.8	89
102	Multirate Model Predictive Control of Unconstrained Single Input-Single Output Processes. , 1992, , .		5
103	Control of Nonlinear Nonminimum-Phase Processes. , 1992, , .		1
104	A comparison of nonlinear control techniques for continuous stirred tank reactors. <i>Chemical Engineering Science</i> , 1992, 47, 2553-2558.	1.9	15
105	Nonlinear control of chemical processes: a review. <i>Industrial & Engineering Chemistry Research</i> , 1991, 30, 1391-1413.	1.8	490
106	Nonlinear predictive control using multi-rate sampling. <i>Canadian Journal of Chemical Engineering</i> , 1991, 69, 136-143.	0.9	52
107	Nonlinear predictive control of uncertain processes: Application to a CSTR. <i>AIChE Journal</i> , 1991, 37, 1711-1723.	1.8	86
108	Implementation Issues in Nonlinear Predictive Control. , 1991, , .		4

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109	Process Identification using Nonlinear Programming Techniques. , 1990, , .		13
110	Impact of model uncertainty descriptions for high-purity distillation control. AIChE Journal, 1988, 34, 1996-2004.	1.8	27