

Francis Mairret

List of Publications by Year in descending order

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67
papers

1,033
citations

516215

16
h-index

454577

30
g-index

67
all docs

67
docs citations

67
times ranked

1093
citing authors

#	ARTICLE	IF	CITATIONS
1	Modelling neutral lipid production by the microalga <i>Isochrysis aff. galbana</i> under nitrogen limitation. <i>Bioresource Technology</i> , 2011, 102, 142-149.	4.8	141
2	Instrumentation and control of anaerobic digestion processes: a review and some research challenges. <i>Reviews in Environmental Science and Biotechnology</i> , 2015, 14, 615-648.	3.9	118
3	Dynamical Allocation of Cellular Resources as an Optimal Control Problem: Novel Insights into Microbial Growth Strategies. <i>PLoS Computational Biology</i> , 2016, 12, e1004802.	1.5	84
4	Modeling anaerobic digestion of microalgae using ADM1. <i>Bioresource Technology</i> , 2011, 102, 6823-6829.	4.8	69
5	Modeling the temperature effect on the specific growth rate of phytoplankton: a review. <i>Reviews in Environmental Science and Biotechnology</i> , 2017, 16, 625-645.	3.9	48
6	Modelling of Microalgae Culture Systems with Applications to Control and Optimization. <i>Advances in Biochemical Engineering/Biotechnology</i> , 2015, 153, 59-87.	0.6	36
7	Theory of turbid microalgae cultures. <i>Journal of Theoretical Biology</i> , 2018, 456, 190-200.	0.8	36
8	Threeâ€reaction model for the anaerobic digestion of microalgae. <i>Biotechnology and Bioengineering</i> , 2012, 109, 415-425.	1.7	34
9	Optimizing microalgal production in raceway systems. <i>Biotechnology Progress</i> , 2013, 29, 543-552.	1.3	32
10	Getting the most out of it: Optimal experiments for parameter estimation of microalgae growth models. <i>Journal of Process Control</i> , 2014, 24, 991-1001.	1.7	27
11	Minimal time control of fed-batch bioreactor with product inhibition. <i>Bioprocess and Biosystems Engineering</i> , 2013, 36, 1485-1496.	1.7	23
12	How do microalgae perceive light in a high-rate pond? Towards more realistic Lagrangian experiments. <i>Royal Society Open Science</i> , 2018, 5, 180523.	1.1	22
13	How haptophytes microalgae mitigate vitamin B12 limitation. <i>Scientific Reports</i> , 2019, 9, 8417.	1.6	22
14	Modelling microalgae growth in nitrogen limited photobioreactor for estimating biomass, carbohydrate and neutral lipid productivities. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2011, 44, 10591-10596.	0.4	21
15	Optimal control of bacterial growth for the maximization of metabolite production. <i>Journal of Mathematical Biology</i> , 2019, 78, 985-1032.	0.8	20
16	A new approach to define optimized range of medium composition for enhancement of hairy root production in fed-batch process. <i>Bioprocess and Biosystems Engineering</i> , 2009, 32, 257-265.	1.7	16
17	Modeling and optimization of hairy root growth in fedâ€batch process. <i>Biotechnology Progress</i> , 2010, 26, 847-856.	1.3	16
18	Optimal Synthesis for the Minimum Time Control Problems of Fed-Batch Bioprocesses for Growth Functions with Two Maxima. <i>Journal of Optimization Theory and Applications</i> , 2013, 158, 521-553.	0.8	16

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19	Estimation of neutral lipid and carbohydrate quotas in microalgae using adaptive interval observers. <i>Bioprocess and Biosystems Engineering</i> , 2014, 37, 51-61.	1.7	15
20	Optimization of the separation of two species in a chemostat. <i>Automatica</i> , 2014, 50, 1243-1248.	3.0	15
21	Modelling the effect of temperature on phytoplankton growth across the global ocean. <i>IFAC-PapersOnLine</i> , 2015, 48, 228-233.	0.5	14
22	Optimal proteome allocation and the temperature dependence of microbial growth laws. <i>Npj Systems Biology and Applications</i> , 2021, 7, 14.	1.4	14
23	Adaptive control of light attenuation for optimizing microalgae production. <i>Journal of Process Control</i> , 2015, 30, 117-124.	1.7	13
24	A biomolecular proportional integral controller based on feedback regulations of protein level and activity. <i>Royal Society Open Science</i> , 2018, 5, 171966.	1.1	13
25	Optimal feedback strategies for bacterial growth with degradation, recycling, and effect of temperature. <i>Optimal Control Applications and Methods</i> , 2018, 39, 1084-1109.	1.3	12
26	Hybrid Control of a Bioreactor With Quantized Measurements. <i>IEEE Transactions on Automatic Control</i> , 2016, 61, 1385-1390.	3.6	11
27	Optimisation of strain selection in evolutionary continuous culture. <i>International Journal of Control</i> , 2017, 90, 2748-2759.	1.2	11
28	Maximizing microalgae productivity in a light-limited chemostat [†] [‡] This work was supported by the CONICYT doctoral grant (Carlos MartÁnez), and by the Phycover (ANR-14-CE04-0011) and IPL Algae in silico (INRIA) projects.. <i>IFAC-PapersOnLine</i> , 2018, 51, 735-740.	0.5	10
29	Maximizing microalgae productivity by shading outdoor cultures * [†] [‡] This work was supported by the CONICYT doctoral grant (Carlos MartÁnez), and by the Phycover (ANR-14-CE04-0011) and Purple Sun (ANR-13-BIME-0004) projects. F. Mairet is grateful to [†] [‡] FMJH Program Gaspard Monge in optimization and operation research. <i>IFAC-PapersOnLine</i> , 2017, 50, 8734-8739.	0.5	9
30	Interval observer with near optimal adaptation dynamics. Application to the estimation of lipid quota in microalgae. <i>International Journal of Robust and Nonlinear Control</i> , 2014, 24, 1142-1157.	2.1	8
31	Analysis of a periodic optimal control problem connected to microalgae anaerobic digestion. <i>Optimal Control Applications and Methods</i> , 2015, 36, 750-773.	1.3	8
32	Twelve quick tips for designing sound dynamical models for bioprocesses. <i>PLoS Computational Biology</i> , 2019, 15, e1007222.	1.5	8
33	Determining the limiting reaction in anaerobic digestion processes. How has this been tackled?. <i>Journal of Chemical Technology and Biotechnology</i> , 2012, 87, 1375-1378.	1.6	7
34	Coupling biological and radiative models to describe microalgal growth in a photobioreactor. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2010, 43, 168-173.	0.4	6
35	A Dynamic Model for Anaerobic Digestion of Microalgae*. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2011, 44, 5034-5039.	0.4	5
36	Adaptive control for optimizing microalgae production. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2013, 46, 297-302.	0.4	5

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37	Driving Species Competition in a Light-limited Chemostat. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 175-180.	0.4	5
38	The Photoinhibistat: Operating Microalgae Culture under Photoinhibition for Strain Selection**This work was supported by the French ANR Facteur 4 (ANR-12-BIME-0004) and Purple Sun (ANR-13-BIME-0004) projects.. IFAC-PapersOnLine, 2016, 49, 1068-1073.	0.5	5
39	Sharing Vitamin B12 between Bacteria and Microalgae Does Not Systematically Occur: Case Study of the Haptophyte <i>Tisochrysis lutea</i> . <i>Microorganisms</i> , 2022, 10, 1337.	1.6	5
40	Coupling framers to get enhanced interval observers. Application to growth rate estimation in a photobioreactor. , 2009, , .		4
41	Modelling thermal adaptation in microalgae: an adaptive dynamics point of view. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 4376-4381.	0.4	4
42	Cobalamin Scarcity Modifies Carbon Allocation and Impairs DMSP Production Through Methionine Metabolism in the Haptophyte Microalgae <i>Tisochrysis lutea</i> . <i>Frontiers in Marine Science</i> , 2020, 7, .	1.2	4
43	Interval observer-based estimator of specific growth rate in bioreactors. <i>Journal Europeen Des Systemes Automatisees</i> , 2010, 44, 493-507.	0.3	4
44	Optimal feeding strategy for the minimal time problem of a fed-batch bioreactor with mortality rate. <i>Optimal Control Applications and Methods</i> , 2015, 36, 77-92.	1.3	3
45	Robustness of bioprocess feedback control to biodiversity. <i>AIChE Journal</i> , 2017, 63, 2742-2750.	1.8	3
46	Dynamics and control of a periodically forced microalgae culture. IFAC-PapersOnLine, 2019, 52, 922-927.	0.5	3
47	A Physiologically Structured Equation to Consider Quota Heterogeneity in the Droop Model. IFAC-PapersOnLine, 2019, 52, 275-280.	0.5	3
48	Modeling and Analysis of an Absorption Column Connected to a Microalgae Culture. <i>SIAM Journal on Applied Mathematics</i> , 2020, 80, 772-791.	0.8	3
49	Dynamics of the periodically forced light-limited Droop model. <i>Journal of Differential Equations</i> , 2020, 269, 3890-3913.	1.1	3
50	Dynamical Analysis and Optimization of a Generalized Resource Allocation Model of Microbial Growth. <i>SIAM Journal on Applied Dynamical Systems</i> , 2022, 21, 137-165.	0.7	3
51	Robustness of Closed-Loop Control to Biodiversity: a Didactic Example. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 5321-5326.	0.4	2
52	Optimal resource allocation for bacterial growth with degradation * **This work was supported in part by the project RESET (Bioin-formatique, ANR-11-BINF-0005) and program LABEX SIGNALIFE (ANR-11-LABX-0028-01).. IFAC-PapersOnLine, 2017, 50, 9858-9863.	0.5	2
53	The promise of dawn: Microalgae photoacclimation as an optimal control problem of resource allocation. <i>Journal of Theoretical Biology</i> , 2021, 515, 110597.	0.8	2
54	Analysis of an optimal control problem connected to bioprocesses involving a saturated singular arc. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2015, 20, 39-58.	0.5	2

#	ARTICLE	IF	CITATIONS
55	Modelling lipid production in microalgae. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 493-498.	0.4	1
56	Estimation of lipid accumulation in microalgae with dynamic interval observers. , 2011, , .		1
57	Anaerobic Digestion of Microalgae: Identification for Optimization and Control. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 5052-5057.	0.4	1
58	Minimal time control of fed-batch bioreactor with product inhibition. , 2012, , .		1
59	Design of Optimal Experiments for Parameter Estimation of Microalgae Growth Models. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 315-320.	0.4	1
60	Optimization and control of bioconversion of polymeric substrate in the chemostat. AICHE Journal, 2017, 63, 4738-4747.	1.8	1
61	Reduction of a complex biotechnological process model using state-variable association method-Application to the anaerobic digestion of micro-algae. , 2017, , .		1
62	Quantifying the potential of microalgae to remove nutrients from wastewater. IFAC-PapersOnLine, 2019, 52, 287-292.	0.5	1
63	Adaptative interval observer with application to the estimation of biofuel production by microalgae. , 2012, , .		0
64	Driving microalgal production in raceway systems to near optimal productivities. , 2013, , .		0
65	Minimal time problem for a fed-batch bioreactor with a non admissible singular arc. , 2014, , .		0
66	Control of a Bioreactor with Quantized Measurements. Lecture Notes in Computer Science, 2014, , 47-62.	1.0	0
67	Parameter Estimation for Dynamic Resource Allocation in Microorganisms: A Bi-level Optimization Problem. IFAC-PapersOnLine, 2020, 53, 16814-16819.	0.5	0