Elisa Franco

List of Publications by Year
in descending order

66 papers	2,568 citations	236925 25 h-index	214800 47 g-index
81 all docs	81 docs citations	81 times ranked	2382 citing authors

#	Article	IF	Citations
1	The challenges of modeling and forecasting the spread of COVID-19. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 16732-16738.	7.1	406
2	Timing molecular motion and production with a synthetic transcriptional clock. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, E784-93.	7.1	208
3	Diversity in the dynamical behaviour of a compartmentalized programmable biochemical oscillator. Nature Chemistry, 2014, 6, 295-302.	13.6	201
4	Autonomous dynamic control of DNA nanostructure self-assembly. Nature Chemistry, 2019, 11, 510-520.	13.6	178
5	Cooperative Constrained Control of Distributed Agents With Nonlinear Dynamics and Delayed Information Exchange: A Stabilizing Receding-Horizon Approach. IEEE Transactions on Automatic Control, 2008, 53, 324-338.	5.7	139
6	Dissipative DNA nanotechnology. Nature Chemistry, 2022, 14, 600-613.	13.6	72
7	Enzyme-Driven Assembly and Disassembly of Hybrid DNAâ€“RNA Nanotubes. Journal of the American Chemical Society, 2019, 141, 7831-7841.	13.7	70
8	pH-Controlled Assembly of DNA Tiles. Journal of the American Chemical Society, 2016, 138, 12735-12738.	13.7	68
9	The living interface between synthetic biology and biomaterial design. Nature Materials, 2022, 21, 390-397.	27.5	68
10	Structurally robust biological networks. BMC Systems Biology, 2011, 5, 74.	3.0	67
11	pH-Driven Reversible Self-Assembly of Micron-Scale DNA Scaffolds. Nano Letters, 2017, 17, 7283-7288.	9.1	65
12	Dynamically Reshaping Signaling Networks to Program Cell Fate via Genetic Controllers. Science, 2013, 341, 1235005.	12.6	63
13	RNA Fibers as Optimized Nanoscaffolds for siRNA Coordination and Reduced Immunological Recognition. Advanced Functional Materials, 2018, 28, 1805959.	14.9	57
14	Negative Autoregulation Matches Production and Demand in Synthetic Transcriptional Networks. ACS Synthetic Biology, 2014, 3, 589-599.	3.8	54
15	A Structural Classification of Candidate Oscillatory and Multistationary Biochemical Systems. Bulletin of Mathematical Biology, 2014, 76, 2542-2569.	1.9	46
16	Programmable RNA microstructures for coordinated delivery of siRNAs. Nanoscale, 2016, 8, 17542-17550.	5.6	45
17	Mathematical Modeling of RNA-Based Architectures for Closed Loop Control of Gene Expression. ACS Synthetic Biology, 2018, 7, 1219-1228.	3.8	42
18	Molecular Titration Promotes Oscillations and Bistability in Minimal Network Models with Monomeric Regulators. ACS Synthetic Biology, 2016, 5, 321-333.	3.8	40

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19	Dynamic Control of Aptamerâ€"Ligand Activity Using Strand Displacement Reactions. ACS Synthetic Biology, 2018, 7, 30-37.	3.8	40
20	Distinct timescales of RNA regulators enable the construction of a genetic pulse generator. Biotechnology and Bioengineering, 2019, 116, 1139-1151.	3.3	40
21	Geometry of unsteady fluid transport during fluidâ€"structure interactions. Journal of Fluid Mechanics, 2007, 589, 125-145.	3.4	39
22	Computing the structural influence matrix for biological systems. Journal of Mathematical Biology, 2016, 72, 1927-1958.	1.9	38
23	Dynamic self-assembly of compartmentalized DNA nanotubes. Nature Communications, 2021, 12, 3557.	12.8	35
24	Ultrasensitive molecular controllers for quasi-integral feedback. Cell Systems, 2021, 12, 272-288.e3.	6.2	33
25	Network-Decentralized Control Strategies for Stabilization. IEEE Transactions on Automatic Control, 2015, 60, 491-496.	5.7	31
26	Self-assembly of multi-stranded RNA motifs into lattices and tubular structures. Nucleic Acids Research, 2017, 45, 5449-5457.	14.5	28
27	RNA nanotechnology in synthetic biology. Current Opinion in Biotechnology, 2020, 63, 135-141.	6.6	28
28	An ultrasensitive biomolecular network for robust feedback control. IFAC-PapersOnLine, 2017, 50, 10950-10956.	0.9	24
29	Cell-Free Synthetic Biology Platform for Engineering Synthetic Biological Circuits and Systems. Methods and Protocols, 2019, 2, 39.	2.0	23
30	Spontaneous Reorganization of DNA-Based Polymers in Higher Ordered Structures Fueled by RNA. Journal of the American Chemical Society, 2021, 143, 20296-20301.	13.7	21
31	Compartmental flow control: Decentralization, robustness and optimality. Automatica, 2016, 64, 18-28.	5.0	20
32	A Robust Molecular Network Motif for Period-Doubling Devices. ACS Synthetic Biology, 2018, 7, 75-85.	3.8	19
33	Design of a molecular bistable system with RNA-mediated regulation. , 2014, , .		17
34	An analytical approach to bistable biological circuit discrimination using real algebraic geometry. Journal of the Royal Society Interface, 2015, 12, 20150288.	3.4	16
35	The Smallest Eigenvalue of the Generalized Laplacian Matrix, with Application to Network-Decentralized Estimation for Homogeneous Systems. IEEE Transactions on Network Science and Engineering, 2016, 3, 312-324.	6.4	15
36	T7 RNA polymerase non-specifically transcribes and induces disassembly of DNA nanostructures. Nucleic Acids Research, 2018, 46, 5332-5343.	14.5	15

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37	Structural conditions for oscillations and multistationarity in aggregate monotone systems. , 2015, , .		14
38	Homogeneous Time Constants Promote Oscillations in Negative Feedback Loops. ACS Synthetic Biology, 2018, 7, 1481-1487.	3.8	14
39	A universal method for sensitive and cell-free detection of CRISPR-associated nucleases. Chemical Science, 2019, 10, 2653-2662.	7.4	14
40	Practical differentiation using ultrasensitive molecular circuits. , 2019, , .		13
41	Stability analysis of an artificial biomolecular oscillator with non-cooperative regulatory interactions. Journal of Biological Dynamics, 2017, 11, 102-120.	1.7	11
42	Engineering DNA nanotubes for resilience in an E. coli TXTL system. Synthetic Biology, 2018, 3, ysy001.	2.2	11
43	Design and Characterization of RNA Nanotubes. ACS Nano, 2019, 13, 5214-5221.	14.6	11
44	Design of a molecular clock with RNA-mediated regulation. , 2014, , .		10
45	A self-regulating biomolecular comparator for processing oscillatory signals. Journal of the Royal Society Interface, 2015, 12, 20150586.	3.4	9
46	Sequestration and delays enable the synthesis of a molecular derivative operator. , 2020, , .		9
47	Building a Synthetic Transcriptional Oscillator. Methods in Molecular Biology, 2016, 1342, 185-199.	0.9	8
48	Structural properties of the MAPK pathway topologies in PC12 cells. Journal of Mathematical Biology, 2013, 67, 1633-1668.	1.9	7
49	A coarse-grained model captures the temporal evolution of DNA nanotube length distributions. Natural Computing, 2018, 17, 183-199.	3.0	6
50	An ultrasensitive motif for robust closed loop control of biomolecular systems. , 2017, , .		5
51	Design of a bistable network using the CRISPR/Cas system. , 2017, , .		5
52	Design and analysis of a biomolecular positive-feedback oscillator. , 2018, , .		5
53	Feedback Loops in Biological Networks. Methods in Molecular Biology, 2015, 1244, 193-214.	0.9	5
54	RNA Compensation: A Positive Feedback Insulation Strategy for RNA-Based Transcription Networks. ACS Synthetic Biology, 2022, 11, 1240-1250.	3.8	5

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55	A Coarse-Grained Model of DNA Nanotube Population Growth. Lecture Notes in Computer Science, 2016, , 135-147.	1.3	4
56	Biomolecular stabilisation near the unstable equilibrium of a biological system. , 2019, , .		4
57	Receding Horizon Control of a two-agent system with competitive objectives. , 2013, , .		3
58	Self-assembly of large RNA structures: learning from DNA nanotechnology. DNA and RNA Nanotechnology, 2016, 2, .	0.7	3
59	Negative feedback enables structurally signed steady-state influences in artificial biomolecular networks. , 2016, , .		2
60	Characterizing the length-dependence of DNA nanotube end-to-end joining rates. Molecular Systems Design and Engineering, 2020, 5, 544-558.	3.4	2
61	Analysis of a negative feedback biochemical oscillator. , 2012, , .		1
62	A minimal biomolecular frequency divider. , 2015, , .		1
63	Designing a self-regulating biomolecular comparator. , 2015, , .		0
64	Structural Properties of Biological and Ecological Systems. , 2021, , 2217-2225.		0
65	Structural Properties of Biological and Ecological Systems. , 2020, , 1-9.		0
66	Assembly of Nanostructures from Double-Crossover Tiles. Methods in Molecular Biology, 2022, 2433, 293-302.	0.9	0