Stefano Cerbelli

List of Publications by Year
in descending order

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49 papers	1,011 citations	430754 18 h-index	454834 30 g-index
49 all docs	49 docs citations	49 times ranked	697 citing authors

#	Article	IF	Citations
1	Fractional diffusion equation and relaxation in complex viscoelastic materials. Physica A: Statistical Mechanics and Its Applications, 1992, 191, 449-453.	1.2	157
2	Acid reducing leaching of cathodic powder from spent lithium ion batteries: Glucose oxidative pathways and particle area evolution. Journal of Industrial and Engineering Chemistry, 2014, 20, 3201-3207.	2.9	107
3	The intermaterial area density generated by time- and spatially periodic 2D chaotic flows. Chemical Engineering Science, 2000, 55, 1497-1508.	1.9	51
4	The geometry of mixing in time-periodic chaotic flows. I. Asymptotic directionality in physically realizable flows and global invariant properties. Physica D: Nonlinear Phenomena, 1999, 132, 298-324.	1.3	48
5	ADE approach to predicting dispersion of heavy particles in wall-bounded turbulence. International Journal of Multiphase Flow, 2001, 27, 1861-1879.	1.6	42
6	Universality and imaginary potentials in advectionâ€“diffusion equations in closed flows. Journal of Fluid Mechanics, 2004, 513, 221-237.	1.4	42
7	Eigenvalueâ€“eigenfunction analysis of infinitely fast reactions and micromixing regimes in regular and chaotic bounded flows. Chemical Engineering Science, 2004, 59, 2125-2144.	1.9	41
8	Spectral Properties and Transport Mechanisms of Partially Chaotic Bounded Flows in the Presence of Diffusion. Physical Review Letters, 2004, 92, 114101.	2.9	36
9	A spectral approach to reaction/diffusion kinetics in chaotic flows. Computers and Chemical Engineering, 2002, 26, 125-139.	2.0	34
10	An equilibrium theory for catalytic steam reforming in membrane reactors. Chemical Engineering Science, 2017, 160, 291-303.	1.9	34
11	Transport-reaction-permeation regimes in catalytic membrane reactors for hydrogen production. The steam reforming of methane as a case study. Chemical Engineering Science, 2017, 162, 88-103.	1.9	29
12	Analytic expression for the short-time rate of growth of the intermaterial contact perimeter in two-dimensional chaotic flows and Hamiltonian systems. Physical Review E, 1998, 58, 447-458.	0.8	27
13	Convection-Dominated Dispersion Regime in Wide-Bore Chromatography: A Transport-Based Approach To Assess the Occurrence of Slip Flows in Microchannels. Analytical Chemistry, 2009, 81, 8009-8014.	3.2	25
14	Quantifying dispersion of finite-sized particles in deterministic lateral displacement microflow separators through Brennerâ€™s macrotransport paradigm. Microfluidics and Nanofluidics, 2013, 15, 431-449.	1.0	23
15	Laminar dispersion at low and high Peclet numbers in finite-length patterned microtubes. Physics of Fluids, 2017, 29, .	1.6	23
16	Taming axial dispersion in hydrodynamic chromatography columns through wall patterning. Physics of Fluids, 2018, 30, .	1.6	21
17	Enhanced diffusion regimes in bounded chaotic flows. Physics Letters, Section A: General, Atomic and Solid State Physics, 2003, 312, 355-362.	0.9	20
18	The evolution of material lines curvature in deterministic chaotic flows. Chemical Engineering Science, 2000, 55, 363-371.	1.9	18

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19	Modeling Fixed Bed Membrane Reactors for Hydrogen Production through Steam Reforming Reactions: A Critical Analysis. Membranes, 2018, 8, 34.	1.4	18
20	Effective dispersion and separation resolution in continuous particle fractionation. Microfluidics and Nanofluidics, 2015, 19, 1035-1046.	1.0	17
21	Non-uniform stationary measure properties of chaotic area-preserving dynamical systems. Physica A: Statistical Mechanics and Its Applications, 1998, 254, 451-465.	1.2	15
22	Modelling and optimization of hydrogen yield in membrane steam reforming reactors. Canadian Journal of Chemical Engineering, 2017, 95, 1676-1682.	0.9	15
23	Prediction and quantification of micromixing intensities in laminar flows. AICHE Journal, 2002, 48, 686-700.	1.8	14
24	Separation of polydisperse particle mixtures by deterministic lateral displacement. The impact of particle diffusivity on separation efficiency. Asia-Pacific Journal of Chemical Engineering, 2012, 7, S356.	0.8	14
25	The geometry of mixing in 2-d time-periodic chaotic flows. Chemical Engineering Science, 2000, 55, 381-389.	1.9	11
26	Structural modelling for the dissolution of non-porous ores: dissolution with sporulation. Chemical Engineering Journal, 2004, 99, 89-104.	6.6	11
27	Inertia-driven enhancement of mixing efficiency in microfluidic cross-junctions: a combined Eulerian/Lagrangian approach. Microfluidics and Nanofluidics, 2018, 22, 1.	1.0	10
28	Brownian Sieving Effect for Boosting the Performance of Microcapillary Hydrodynamic Chromatography. Proof of Concept. Analytical Chemistry, 2021, 93, 6808-6816.	3.2	10
29	EXTERIOR ALGEBRA-BASED ALGORITHMS TO ESTIMATE LIAPUNOV SPECTRA AND STRETCHING STATISTICS IN HIGH-DIMENSIONAL AND DISTRIBUTED SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2002, 12, 353-368.	0.7	8
30	Critical dispersion of advecting-diffusing tracers in periodic landscapes of hard-wall symmetric potentials. Physical Review E, 2013, 87, 060102.	0.8	8
31	Combining Electrostatic, Hindrance and Diffusive Effects for Predicting Particle Transport and Separation Efficiency in Deterministic Lateral Displacement Microfluidic Devices. Biosensors, 2020, 10, 126.	2.3	8
32	Taming Taylor-Aris dispersion through chaotic advection. Journal of Chromatography A, 2022, 1673, 463110.	1.8	8
33	Tracer Dispersion in Stirred Tank Reactors: Asymptotic Properties and Mixing Characterization. Canadian Journal of Chemical Engineering, 2002, 80, 580-590.	0.9	7
34	Comparison between one- and two-way coupling approaches for estimating effective transport properties of suspended particles undergoing Brownian sieving hydrodynamic chromatography. Physics of Fluids, 2022, 34, .	1.6	7
35	On the estimate of mixing length in interdigital micromixers. Chemical Engineering Journal, 2008, 138, 523-537.	6.6	6
36	Singular eigenvalue limit of advection-diffusion operators and properties of the strange eigenfunctions in globally chaotic flows. European Physical Journal: Special Topics, 2017, 226, 2247-2262.	1.2	6

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37	Deactivation-induced dynamics of the reaction front in a fixed-bed catalytic membrane reactor: Methane cracking as a case study. International Journal of Hydrogen Energy, 2021, 46, 20159-20170.	3.8	6
38	Brownian sieving enhancement of microcapillary hydrodynamic chromatography. Analysis of the separation performance based on Brennerâ€™s macro-transport theory. Journal of Chromatography A, 2021, 1659, 462652.	1.8	6
39	On the Three-Dimensional Structure of the Flow through Deterministic Lateral Displacement Devices and Its Effects on Particle Separation. Processes, 2019, 7, 498.	1.3	5
40	Space-time resolution of size-dispersed suspensions in Deterministic Lateral Displacement microfluidic devices. European Physical Journal: Special Topics, 2019, 228, 5-23.	1.2	5
41	Invariant properties of a class of exactly solvable mixing transformations â€“ A measure-theoretical approach to model the evolution of material lines advected by chaotic flows. Chaos, Solitons and Fractals, 2000, 11, 607-630.	2.5	4
42	Câˆ’ž-Interpolation of Discrete Fields on Regular and Irregular Grids. Journal of Computational Physics, 2002, 176, 145-169.	1.9	4
43	50-Fold Reduction of Separation Time in Open-Channel Hydrodynamic Chromatography via Lateral Vortices. Analytical Chemistry, 2022, 94, 9872-9879.	3.2	4
44	Closed-form solution of abrasion and abrasionâ€“dissolution kinetic models. Chemical Engineering Journal, 2003, 94, 127-137.	6.6	3
45	The sporulation model for manganiferous ore dissolution. Chemical Engineering Science, 2004, 59, 5107-5112.	1.9	2
46	A geometric approach for predicting vertical stationary profiles of weakly inertial advecting-diffusing particles in closed incompressible flows. International Journal of Multiphase Flow, 2004, 30, 675-696.	1.6	1
47	Invariant structures and multifractal measures in 2d mixing systems. , 2005, , 141-155.		0
48	The impact of chaotic advection on the microstructure of polymerâ€modified bitumen. AICHE Journal, 2014, 60, 1870-1879.	1.8	0
49	Comment on â€œA novel numerical modeling paradigm for bio particle tracing in non inertial microfluidic devicesâ€•by Ebadi et al., Microsystem Technologies (2019) https://doi.org/10.1007/s00542-018-4275-6. Microsystem Technologies, 2020, 26, 1187-1190.	1.2	0