Ilenia Battiato

List of Publications by Year
in descending order

51 papers	1,347 citations	331670 21 h-index	345221 36 g-index
52 all docs	52 docs citations	52 times ranked	1074 citing authors

#	Article	IF	Citations
1	Applicability regimes for macroscopic models of reactive transport in porous media. Journal of Contaminant Hydrology, 2011, 120-121, 18-26.	3.3	163
2	On breakdown of macroscopic models of mixing-controlled heterogeneous reactions in porous media. Advances in Water Resources, 2009, 32, 1664-1673.	3.8	133
3	Hybrid models of reactive transport in porous and fractured media. Advances in Water Resources, 2011, 34, 1140-1150.	3.8	119
4	An Analysis Platform for Multiscale Hydrogeologic Modeling with Emphasis on Hybrid Multiscale Methods. Ground Water, 2015, 53, 38-56.	1.3	62
5	Theory and Applications of Macroscale Models in Porous Media. Transport in Porous Media, 2019, 130, 5-76.	2.6	58
6	Homogenizability conditions for multicomponent reactive transport. Advances in Water Resources, 2013, 62, 254-265.	3.8	54
7	On Veracity of Macroscopic Lithium-Ion Battery Models. Journal of the Electrochemical Society, 2015, 162, A1940-A1951.	2.9	52
8	Dispersion controlled by permeable surfaces: surface properties and scaling. Journal of Fluid Mechanics, 2016, 801, 13-42.	3.4	38
9	Elastic Response of Carbon Nanotube Forests to Aerodynamic Stresses. Physical Review Letters, 2010, 105, 144504.	7.8	37
10	Vertical dispersion in vegetated shear flows. Water Resources Research, 2016, 52, 8066-8080.	4.2	37
11	Universal scaling-law for flow resistance over canopies with complex morphology. Scientific Reports, 2018, 8, 4430.	3.3	36
12	The Impact of Poreâ€Scale Flow Regimes on Upscaling of Immiscible Twoâ€Phase Flow in Porous Media. Water Resources Research, 2018, 54, 6683-6707.	4.2	36
13	Concentration polarization over reverse osmosis membranes with engineered surface features. Journal of Membrane Science, 2021, 617, 118199.	8.2	36
14	Singleâ€parameter model of vegetated aquatic flows. Water Resources Research, 2014, 50, 6358-6369.	4.2	35
15	Physics-based hybrid method for multiscale transport in porous media. Journal of Computational Physics, 2017, 344, 320-338.	3.8	31
16	Self-similarity in coupled Brinkman/Navierâ€“Stokes flows. Journal of Fluid Mechanics, 2012, 699, 94-114.	3.4	30
17	Hydrodynamic dispersion in thin channels with micro-structured porous walls. Physics of Fluids, 2018, 30, .	4.0	30
18	Relative Permeability Scaling From Poreâ€Scale Flow Regimes. Water Resources Research, 2019, 55, 3215-3233.	4.2	25

#	Article	IF	Citations
19	Chemical and Reactive Transport Processes Associated with Hydraulic Fracturing of Unconventional Oil/Gas Shales. Chemical Reviews, 2022, 122, 9198-9263.	47.7	25
20	Modeling variability in porescale multiphase flow experiments. Advances in Water Resources, 2017, 105, 29-38.	3.8	24
21	Sequential Homogenization of Reactive Transport in Polydisperse Porous Media. Multiscale Modeling and Simulation, 2016, 14, 1301-1318.	1.6	23
22	Striving to translate shale physics across ten orders of magnitude: What have we learned?. Earth-Science Reviews, 2021, 223, 103848.	9.1	21
23	Bistability of buoyancy-driven exchange flows in vertical tubes. Journal of Fluid Mechanics, 2018, 850, 525-550.	3.4	20
24	Rough or wiggly? Membrane topology and morphology for fouling control. Journal of Fluid Mechanics, 2019, 862, 753-780.	3.4	20
25	High order ghost-cell immersed boundary method for generalized boundary conditions. International Journal of Heat and Mass Transfer, 2019, 137, 585-598.	4.8	19
26	Suitability of 2D modelling to evaluate flow properties in 3D porous media. Transport in Porous Media, 2020, 134, 315-329.	2.6	18
27	Planning the process parameters for the direct metal deposition of functionally graded parts based on mathematical models. Journal of Manufacturing Processes, 2018, 31, 56-71.	5.9	15
28	A reduced complexity model for dynamic similarity in obstructed shear flows. Geophysical Research Letters, 2013, 40, 3888-3892.	4.0	13
29	A Mathematical Model-Based Optimization Method for Direct Metal Deposition of Multimaterials. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2017, 139, .	2.2	13
30	Effective medium theory for drag-reducing micro-patterned surfaces in turbulent flows. European Physical Journal E, 2014, 37, 19.	1.6	12
31	Design of injection nozzle in direct metal deposition (DMD) manufacturing of thin-walled structures based on 3D models. International Journal of Advanced Manufacturing Technology, 2017, 91, 605-616.	3.0	11
32	Macroscale transport in channel-matrix systems via integral transforms. Physical Review Fluids, 2021, 6, .	2.5	11
33	Multi-Scale Microfluidics for Transport in Shale Fabric. Energies, 2021, 14, 21.	3.1	11
34	Dynamic Modeling of Fouling in Reverse Osmosis Membranes. Membranes, 2021, 11, 349.	3.0	10
35	Multiscale modeling approach to determine effective lithium-ion transport properties. , 2017, , .		9
36	Scaling of two-phase water-steam relative permeability and thermal fluxes in porous media. International Journal of Multiphase Flow, 2020, 129, 103257.	3.4	8

#	Article	IF	Citations
37	Patchâ€Based Multiscale Algorithm for Flow and Reactive Transport in Fractureâ€Microcrack Systems in Shales. Water Resources Research, 2020, 56, e2019WR025960.	4.2	7
38	Upscaling and Automation: Pushing the Boundaries of Multiscale Modeling through Symbolic Computing. Transport in Porous Media, 2021, 140, 313-349.	2.6	7
39	A Data-Driven Multiscale Framework to Estimate Effective Properties of Lithium-Ion Batteries from Microstructure Images. Transport in Porous Media, 2020, 134, 173-194.	2.6	6
40	Impact of Pore-Scale Characteristics on Immiscible Fluid Displacement. Geofluids, 2020, 2020, 1-10.	0.7	6
41	Temperature-dependent multiscale-dynamics in Lithium-ion battery electrochemical models. , 2015, , .		5
42	Downscalingâ€Based Segmentation for Unresolved Images of Highly Heterogeneous Granular Porous Samples. Water Resources Research, 2018, 54, 2871-2890.	4.2	5
43	Upscaling Reactive Transport and Clogging in Shale Microcracks by Deep Learning. Water Resources Research, 2021, 57, e2020WR029125.	4.2	5
44	Taylor drop in a closed vertical pipe. Journal of Fluid Mechanics, 2020, 902, .	3.4	4
45	Ï„-SIMPLE Algorithm for the closure problem in homogenization of stokes flows. Advances in Water Resources, 2020, 144, 103712.	3.8	2
46	Flow-induced shear instabilities of cohesive granulates. Physical Review E, 2012, 86, 031301.	2.1	1
47	Preliminary Investigation of Provability of Li-Ion Macroscale Models Subject to Capacity Fade. , 2016, , .		1
48	Role of glycocalyx in attenuation of shear stress on endothelial cells: From in vivo experiments to microfluidic circuits. , 2017, , .		1
49	Contribution of Pore-Scale Approach to Macroscale Geofluids Modelling in Porous Media. Geofluids, 2019, 2019, 1-4.	0.7	1
50	Module-Fluidics: Building Blocks for Spatio-Temporal Microenvironment Control. Micromachines, 2022, 13, 774.	2.9	1
51	Design of Injection Nozzle in Direct Metal Deposition (DMD) Manufacturing of Thin-Walled Structures Based on 3D Models. , 2016, , .		0