Carlos Dorao

List of Publications by Year
in descending order

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109 papers	2,015 citations	257101 24 h-index	315357 38 g-index
114 all docs	114 docs citations	114 times ranked	1300 citing authors

#	Article	IF	Citations
1	The heat transfer coefficient similarity between binary and single component flow condensation inside plain pipes. International Journal of Heat and Mass Transfer, 2022, 186, 122450.	2.5	5
2	Toward Surfaces with Droplet Impact Robustness and Low Contact Angle Hysteresis. Advanced Materials Interfaces, 2022, 9, .	1.9	2
3	On the scaling of convective boiling heat transfer coefficient. International Journal of Heat and Mass Transfer, 2021, 164, 120589.	2.5	7
4	Droplet evaporation during dropwise condensation due to deposited volatile organic compounds. AIP Advances, 2021, 11, .	0.6	3
5	Does the Criteria of Instability Thresholds During Density Wave Oscillations Need to Be Redefined?. Springer Proceedings in Energy, 2021, , 45-54.	0.2	0
6	Anisotropic wetting and final shape of droplets impacting on micropillars with non-vertical lateral walls. AIP Advances, 2021, 11, 115319.	0.6	2
7	Reconsidering the influence of the mass flux during nucleate flow boiling in a horizontal heated pipe. AIP Advances, 2021, 11, .	0.6	0
8	A redefined energy functional to prevent mass loss in phase-field methods. AIP Advances, 2020, 10, .	0.6	5
9	The overlooked role of pressure oscillations on heat transfer deterioration during self-sustained flow oscillations. Applied Physics Letters, 2020, 117, 253701.	1.5	3
10	Conical micro-structures as a route for achieving super-repellency in surfaces with intrinsic hydrophobic properties. Applied Physics Letters, 2019, 115, 053703.	1.5	14
11	On the heat transfer deterioration during condensation of binary mixtures. Applied Physics Letters, 2019, 114, .	1.5	16
12	Law of resistance in two-phase flows inside pipes. Applied Physics Letters, 2019, 114, 173704.	1.5	9
13	Can Wicking Control Droplet Cooling?. Langmuir, 2019, 35, 6562-6570.	1.6	17
14	Water-Repellent Surfaces Consisting of Nanowires on Micropyramidal Structures. ACS Applied Nano Materials, 2019, 2, 7696-7704.	2.4	15
15	Simple and general correlation for heat transfer during flow condensation inside plain pipes. International Journal of Heat and Mass Transfer, 2018, 122, 290-305.	2.5	42
16	Wetting State Transitions over Hierarchical Conical Microstructures. Advanced Materials Interfaces, 2018, 5, 1701039.	1.9	9
17	Can the heat transfer coefficients for single-phase flow and for convective flow boiling be equivalent?. Applied Physics Letters, 2018, 112, .	1.5	16
18	Thermal two-phase flow with a phase-field method. International Journal of Multiphase Flow, 2018, 100, 77-85.	1.6	1

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19	Experimental validation of pressure drop models during flow boiling of R134a â€“ effect of flow acceleration and entrainment. MATEC Web of Conferences, 2018, 240, 03010.	0.1	0
20	Effect of the Pressure Drop Oscillation on the Local Heat Transfer Coefficient in a Heated Horizontal Pipe. , 2018, , .		0
21	Experimental Investigations On The Momentum Pressure Drop During Flow Boiling Of R134a. Journal of Physics: Conference Series, 2018, 1101, 012022.	0.3	0
22	Water droplet dynamics on a heated nanowire surface. Applied Physics Letters, 2018, 113, .	1.5	12
23	Can flow oscillations during flow boiling deteriorate the heat transfer coefficient?. Applied Physics Letters, 2018, 113, .	1.5	27
24	Experimental Study of Nucleate Flow Boiling to Convective Flow Boiling Transition in a Horizontal Heated Pipe. , 2018, , .		0
25	Water droplet impacting on overheated random Si nanowires. International Journal of Heat and Mass Transfer, 2018, 124, 307-318.	2.5	22
26	On the occurrence of superimposed density wave oscillations on pressure drop oscillations and the influence of a compressible volume. AIP Advances, 2018, 8, 075022.	0.6	15
27	Experimental study on the characteristics of pressure drop oscillations and their interaction with short-period oscillation in a horizontal tube. International Journal of Refrigeration, 2018, 91, 246-253.	1.8	16
28	Novel Approach for Modeling the Dynamics of Fiber Breakage in Polymer Matrix Composites during Capillary Extrusion. Advances in Polymer Technology, 2017, 36, 507-516.	0.8	0
29	Experimental investigations on adiabatic frictional pressure drops of R134a during flow in 5 mm diameter channel. Experimental Thermal and Fluid Science, 2017, 83, 78-87.	1.5	22
30	Dominant dimensionless groups controlling heat transfer coefficient during flow condensation inside pipes. International Journal of Heat and Mass Transfer, 2017, 112, 465-479.	2.5	21
31	Detailed experimental investigations on frictional pressure drop of R134a during flow boiling in 5â€‰mm diameter channel: The influence of acceleration pressure drop component. International Journal of Refrigeration, 2017, 82, 163-173.	1.8	13
32	Special Issue From International Workshop on New Understanding in Nanoscale/Microscale Phase Change Phenomena Held in Trondheim, Norway, June 12â€“16, 2016. Journal of Heat Transfer, 2017, 139, .	1.2	0
33	The least-squares spectral element method for phase-field models for isothermal fluid mixture. Computers and Mathematics With Applications, 2017, 74, 1981-1998.	1.4	6
34	The Leidenfrost Phenomenon on Sub-Micron Tapered Pillars. , 2017, , .		3
35	Experimental Study of Horizontal Flow Boiling Heat Transfer of R134a at a Saturation Temperature of 18.6â€‰Â°C. Journal of Heat Transfer, 2017, 139, .	1.2	12
36	Effect of heating profile on the characteristics of pressure drop oscillations. Chemical Engineering Science, 2017, 158, 453-461.	1.9	11

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37	Investigations on mixture preparation for two phase adiabatic pressure drop of R134a flowing in 5 mm diameter channel. Archives of Thermodynamics, 2017, 38, 101-118.	1.0	7
38	Numerical Solution of Coupled Cahn-Hilliard and Navier-Stokes System Using the Least-Squares Spectral Element Method. , 2016, , .		6
39	The Leidenfrost Phenomenon on Silicon Nanowires. , 2016, , .		3
40	Experimental study of the heat transfer coefficient deterioration during Density Wave Oscillations. Chemical Engineering Science, 2015, 132, 178-185.	1.9	24
41	Experimental and numerical study of two-phase pressure drop in downhole shut-in valve with Unified Comprehensive Model formulation. Journal of Natural Gas Science and Engineering, 2015, 23, 440-449.	2.1	6
42	Effect of inlet pressure and temperature on density wave oscillations in a horizontal channel. Chemical Engineering Science, 2015, 134, 767-773.	1.9	20
43	Modeling of annular-mist flow during mixtures boiling. Applied Thermal Engineering, 2015, 91, 463-470.	3.0	4
44	A numerical investigation of flow boiling of non-azeotropic and near-azeotropic binary mixtures. International Journal of Refrigeration, 2015, 49, 99-109.	1.8	6
45	Experimental and numerical study of single-phase pressure drop in downhole shut-in valve. Journal of Natural Gas Science and Engineering, 2015, 22, 214-226.	2.1	22
46	Experimental parametric study of the pressure drop characteristic curve in a horizontal boiling channel. Experimental Thermal and Fluid Science, 2014, 52, 318-327.	1.5	25
47	Experimental results on boiling heat transfer coefficient, frictional pressure drop and flow patterns for R134a at a saturation temperature of 34ÂÂ°C. International Journal of Refrigeration, 2014, 40, 317-327.	1.8	22
48	Experimental study of pressure drop oscillations in parallel horizontal channels. International Journal of Heat and Fluid Flow, 2014, 50, 126-133.	1.1	15
49	Numerical study of heat and mass transfer of binary mixtures condensation in mini-channels. International Communications in Heat and Mass Transfer, 2014, 58, 45-53.	2.9	15
50	Numerical Simulation of Evaporation Process of Two-Phase Flow in Small-Diameter Channels. Heat Transfer Engineering, 2014, 35, 440-451.	1.2	5
51	Controlling micro-sized droplet generation using electrical pulses for studying liquid-liquid systems. , 2014, , .		0
52	Experimental study of density wave oscillations in horizontal straight tube evaporator. , 2014, , .		2
53	Conceptual analysis of the precooling stage for LNG processes. Energy Conversion and Management, 2013, 66, 41-47.	4.4	40
54	Numerical analysis of pressure drop oscillations in parallel channels. International Journal of Multiphase Flow, 2013, 56, 15-24.	1.6	23

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55	Decision-making in the oil and gas projects based on game theory: Conceptual process design. Energy Conversion and Management, 2013, 66, 48-55.	4.4	39
56	On the conceptual design of pre-cooling stage of LNG plants using propane or an ethane/propane mixture. Energy Conversion and Management, 2013, 65, 140-146.	4.4	56
57	Least-Squares Spectral Method for the solution of a fractional advectionâ€“dispersion equation. Journal of Computational Physics, 2013, 232, 33-45.	1.9	35
58	On the influence of heat flux updating during pressure drop oscillations â€“ A numerical analysis. International Journal of Heat and Mass Transfer, 2013, 63, 31-40.	2.5	9
59	Two-Phase Flow Instabilities in Boiling and Condensing Systems. Journal of Power and Energy Systems, 2012, 6, 302-313.	0.5	6
60	Population Balance Model for Batch Gravity Separation of Crude Oil and Water Emulsions. Part II: Comparison to Experimental Crude Oil Separation Data. Journal of Dispersion Science and Technology, 2012, 33, 591-598.	1.3	24
61	Study of the influence of axial conduction in a boiling heated pipe. Chemical Engineering Research and Design, 2012, 90, 1141-1150.	2.7	6
62	Consensual decision-making model based on game theory for LNG processes. Energy Conversion and Management, 2012, 64, 387-396.	4.4	41
63	Review on pressure drop oscillations in boiling systems. Nuclear Engineering and Design, 2012, 250, 436-447.	0.8	49
64	Dispersion phenomena in gas liquid systems. Journal of Natural Gas Science and Engineering, 2012, 5, 25-30.	2.1	4
65	A Combined Multifluid-Population Balance Model for Vertical Gasâ˜'Liquid Bubble-Driven Flows Considering Bubble Column Operating Conditions. Industrial & Engineering Chemistry Research, 2011, 50, 1786-1798.	1.8	40
66	Decision-Making on Liquefied Natural Gas (LNG) projects using game theory. , 2011, , .		4
67	PARAMETRIC STUDY OF THE PRESSURE CHARACTERISTIC CURVE IN A BOILING CHANNEL. Computational Thermal Sciences, 2011, 3, 157-168.	0.5	7
68	Simulation of a natural circulation loop using a least squares hp-adaptive solver. Mathematics and Computers in Simulation, 2011, 81, 2517-2528.	2.4	6
69	The least squares spectral element method for the Cahnâ€“Hilliard equation. Applied Mathematical Modelling, 2011, 35, 797-806.	2.2	23
70	Model based on population balance for the simulation of bubble columns using methods of the least-square type. Chemical Engineering Science, 2011, 66, 3133-3144.	1.9	23
71	A review on heat exchanger thermal hydraulic models for cryogenic applications. Cryogenics, 2011, 51, 366-379.	0.9	102
72	Simulation of transients in natural gas pipelines. Journal of Natural Gas Science and Engineering, 2011, 3, 349-355.	2.1	43

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73	ICONE19-43568 MODELING OF DYNAMIC INSTABILITIES IN BOILING SYSTEMS. The Proceedings of the International Conference on Nuclear Engineering (ICONE), 2011, 2011.19, _ICONE1943-_ICONE1943.	0.0	2
74	Analysis of dynamic surfactant mass transfer and its relationship to the transient stabilization of coalescing liquidâ€“liquid dispersions. Journal of Colloid and Interface Science, 2010, 348, 479-490.	5.0	26
75	A study of the effect of flow maldistribution on heat transfer performance in evaporators. Nuclear Engineering and Design, 2010, 240, 3868-3877.	0.8	32
76	Influence of the plot area in an economical analysis for selecting small scale LNG technologies for remote gas production. Journal of Natural Gas Science and Engineering, 2010, 2, 302-309.	2.1	27
77	Solution of a Cattaneo-Maxwell diffusion model using a Spectral element least-squares method. Journal of Natural Gas Science and Engineering, 2010, 2, 253-258.	2.1	2
78	Dynamic simulation of Ledinegg instability. Journal of Natural Gas Science and Engineering, 2010, 2, 211-216.	2.1	23
79	Droplet size distribution after liquid entrainment in horizontal stratified two-phase three-field dispersed flow. Chemical Engineering Science, 2010, 65, 1407-1414.	1.9	7
80	Simulation of chemical reactors using the least-squares spectral element method. Chemical Engineering Science, 2010, 65, 5146-5159.	1.9	28
81	Liquid entrainmentâ€”Droplet size distribution for a low surface tension mixture. Chemical Engineering Science, 2010, 65, 5272-5284.	1.9	17
82	Liquid entrainment from a wetted wire exposed to a high gas flow rate in cross flow. Chemical Engineering Science, 2010, 65, 6397-6406.	1.9	3
83	Mass Conservative Solution of the Population Balance Equation Using the Least-Squares Spectral Element Method. Industrial & Engineering Chemistry Research, 2010, 49, 6204-6214.	1.8	7
84	Time-property least-squares spectral method for population balance equations. Journal of Mathematical Chemistry, 2009, 46, 770-780.	0.7	9
85	Identification of droplet breakage kernel for population balance modelling. Chemical Engineering Science, 2009, 64, 638-645.	1.9	29
86	Analysis of breakage kernels for population balance modelling. Chemical Engineering Science, 2009, 64, 501-508.	1.9	40
87	hp-Adaptive spectral element solver for reactor modeling. Chemical Engineering Science, 2009, 64, 904-911.	1.9	6
88	On the modelling of dropletâ€“film interaction considering entrainment, deposition and breakage processes. Chemical Engineering Science, 2009, 64, 1362-1371.	1.9	18
89	Macroscopic description of dropletâ€“film interaction for gasâ€“liquid systems. Applied Mathematical Modelling, 2009, 33, 3309-3318.	2.2	10
90	An improved flowsheet simulation approach for advanced CO2 absorption process design and optimization. Energy Procedia, 2009, 1, 4257-4264.	1.8	2

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91	Simulation of thermal disturbances with finite wave speeds using a high order method. Journal of Computational and Applied Mathematics, 2009, 231, 637-647.	1.1	19
92	Bubble Size Distribution for A Bubble Column Reactor Undergoing Forced Oscillations. Industrial & Engineering Chemistry Research, 2009, 48, 1786-1796.	1.8	17
93	On the Coupled Solution of a Combined Population Balance Model Using the Least-Squares Spectral Element Method. Industrial & Engineering Chemistry Research, 2009, 48, 7994-8006.	1.8	21
94	Solution of bubble number density with breakage and coalescence in a bubble column by Least-Squares Method. Progress in Computational Fluid Dynamics, 2009, 9, 436.	0.1	10
95	Spectral Element Method for the Simulation of Natural Gas Conversion Processes. , 2009, , .		0
96	A least-squares method with direct minimization for the solution of the breakageâ€“coalescence population balance equation. Mathematics and Computers in Simulation, 2008, 79, 716-727.	2.4	28
97	hp-adaptive least squares spectral element method for population balance equations. Applied Numerical Mathematics, 2008, 58, 563-576.	1.2	26
98	Prediction of the evolution of the dispersed phase in bubbly flow problems. Applied Mathematical Modelling, 2008, 32, 1813-1833.	2.2	21
99	Modeling of dropletâ€“droplet interaction phenomena in gasâ€“liquid systems for natural gas processing. Chemical Engineering Science, 2008, 63, 3585-3592.	1.9	2
100	Least-squares spectral method for solving advective population balance problems. Journal of Computational and Applied Mathematics, 2007, 201, 247-257.	1.1	24
101	Timeâ€“space-property least squares spectral method for population balance problems. Chemical Engineering Science, 2007, 62, 1323-1333.	1.9	25
102	Jacobi galerkin spectral method for cylindrical and spherical geometries. Chemical Engineering Science, 2007, 62, 6777-6783.	1.9	12
103	A parallel timeâ€“space least-squares spectral element solver for incompressible flow problems. Applied Mathematics and Computation, 2007, 185, 45-58.	1.4	20
104	Numerical calculation of the moments of the population balance equation. Journal of Computational and Applied Mathematics, 2006, 196, 619-633.	1.1	44
105	The quadrature method of moments and its relationship with the method of weighted residuals. Chemical Engineering Science, 2006, 61, 7795-7804.	1.9	17
106	A least squares method for the solution of population balance problems. Computers and Chemical Engineering, 2006, 30, 535-547.	2.0	65
107	Application of the least squares method for solving population balance problems in <mml:math altimg="si6.gif" display="inline" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevi. Chemical Engineering Science, 2006, 61, 7795-7804.	1.9	21
108	Modeling of Bubble Column Reactors:Â Progress and Limitations. Industrial & Engineering Chemistry Research, 2005, 44, 5107-5151.	1.8	247

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109	Modeling of Fractional Diffusion on a Catalytic Particle under Different Flow Conditions. Defect and Diffusion Forum, 0, 323-325, 121-126.	0.4	0