

Michael Harasek

List of Publications by Year in descending order

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111
papers

2,079
citations

257450

24
h-index

276875

41
g-index

119
all docs

119
docs citations

119
times ranked

2462
citing authors

#	ARTICLE	IF	CITATIONS
1	Review on available biogas upgrading technologies and innovations towards advanced solutions. <i>Journal of Cleaner Production</i> , 2017, 161, 1329-1337.	9.3	248
2	Membrane biogas upgrading processes for the production of natural gas substitute. <i>Separation and Purification Technology</i> , 2010, 74, 83-92.	7.9	206
3	Design, simulation and application of a new micromixing device for time resolved infrared spectroscopy of chemical reactions in solution. <i>Lab on A Chip</i> , 2001, 1, 16.	6.0	108
4	Evaluation of alkali resistant nanofiltration membranes for the separation of hemicellulose from concentrated alkaline process liquors. <i>Desalination</i> , 2006, 192, 303-314.	8.2	78
5	Experimental analysis of membrane and pressure swing adsorption (PSA) for the hydrogen separation from natural gas. <i>Journal of Cleaner Production</i> , 2017, 167, 896-907.	9.3	73
6	Every Breath You Take: Non-invasive Real-Time Oxygen Biosensing in Two- and Three-Dimensional Microfluidic Cell Models. <i>Frontiers in Physiology</i> , 2018, 9, 815.	2.8	66
7	CFD simulation of straight and slightly swirling turbulent free jets using different RANS-turbulence models. <i>Applied Thermal Engineering</i> , 2015, 89, 1117-1126.	6.0	53
8	NOx formation in natural gas combustion—a new simplified reaction scheme for CFD calculations. <i>Fuel</i> , 2006, 85, 513-523.	6.4	46
9	A Microfluidic Multisize Spheroid Array for Multiparametric Screening of Anticancer Drugs and Blood—Brain Barrier Transport Properties. <i>Advanced Science</i> , 2021, 8, e2004856.	11.2	46
10	Time-Resolved FT-IR Spectroscopy of Chemical Reactions in Solution by Fast Diffusion-Based Mixing in a Micromachined Flow Cell. <i>Applied Spectroscopy</i> , 2001, 55, 241-251.	2.2	45
11	Numerical algorithm for modelling multicomponent multipermeator systems. <i>Journal of Membrane Science</i> , 2009, 344, 258-265.	8.2	40
12	A new methanation and membrane based power-to-gas process for the direct integration of raw biogas — Feasibility and comparison. <i>Energy</i> , 2018, 146, 34-46.	8.8	40
13	Engineering of three-dimensional pre-vascular networks within fibrin hydrogel constructs by microfluidic control over reciprocal cell signaling. <i>Biomicrofluidics</i> , 2018, 12, 042216.	2.4	39
14	Nanofiltration as key technology for the separation of LA and AA. <i>Journal of Membrane Science</i> , 2012, 389, 389-398.	8.2	36
15	Membrane modeling using CFD: Combined evaluation of mass transfer and geometrical influences in 1D and 3D. <i>Journal of Membrane Science</i> , 2018, 563, 199-209.	8.2	35
16	Fly Ash from Municipal Solid Waste Incineration as a Potential Thermochemical Energy Storage Material. <i>Energy & Fuels</i> , 2019, 33, 5810-5819.	5.1	33
17	Production of Micro- and Nanoscale Lignin from Wheat Straw Using Different Precipitation Setups. <i>Molecules</i> , 2018, 23, 633.	3.8	32
18	Comparison of the combustion characteristics and kinetic study of coal, municipal solid waste, and refuse-derived fuel: Model-fitting methods. <i>Energy Science and Engineering</i> , 2019, 7, 2646-2657.	4.0	30

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19	Combining in-situ X-ray diffraction with thermogravimetry and differential scanning calorimetry – An investigation of Co ₃ O ₄ , MnO ₂ and PbO ₂ for thermochemical energy storage. <i>Solar Energy</i> , 2017, 153, 11-24.	6.1	29
20	Simulation of Membrane Gas Separation Process Using Aspen Plus® V8.6. <i>Chemical Product and Process Modeling</i> , 2016, 11, 67-72.	0.9	28
21	Process simulation and CFD calculations for the development of an innovative baled biomass-fired combustion chamber. <i>Applied Thermal Engineering</i> , 2007, 27, 1138-1143.	6.0	27
22	Chemical-oxidative scrubbing for the removal of hydrogen sulphide from raw biogas: potentials and economics. <i>Water Science and Technology</i> , 2012, 66, 1354-1360.	2.5	27
23	Probing cycle stability and reversibility in thermochemical energy storage – CaC ₂ O ₄ ·H ₂ O as perfect match?. <i>Applied Energy</i> , 2017, 187, 1-9.	10.1	27
24	The Eddy Dissipation Concept – Analysis of Different Fine Structure Treatments for Classical Combustion. <i>Energies</i> , 2018, 11, 1902.	3.1	27
25	Boric Acid: A High Potential Candidate for Thermochemical Energy Storage. <i>Energies</i> , 2019, 12, 1086.	3.1	25
26	Computational fluid dynamic simulation of a solid biomass combustor: modelling approaches. <i>Clean Technologies and Environmental Policy</i> , 2008, 10, 165-174.	4.1	22
27	Impact of Partial Pressure, Conversion, and Temperature on the Oxidation Reaction Kinetics of Cu ₂ O to CuO in Thermochemical Energy Storage. <i>Energies</i> , 2019, 12, 508.	3.1	22
28	Efficient extraction of hydrogen transported as co-stream in the natural gas grid – The importance of process design. <i>Applied Energy</i> , 2019, 233-234, 747-763.	10.1	21
29	Transient simulation and modeling of photovoltaic-PEM water electrolysis. <i>Energy Sources, Part A: Recovery, Utilization and Environmental Effects</i> , 2020, 42, 1097-1107.	2.3	21
30	Development of Honeycomb Methanation Catalyst and Its Application in Power to Gas Systems. <i>Energies</i> , 2018, 11, 1679.	3.1	20
31	The multistep decomposition of boric acid. <i>Energy Science and Engineering</i> , 2020, 8, 1650-1666.	4.0	20
32	Membrane-based enthalpy exchangers for coincident sensible and latent heat recovery. <i>Energy Conversion and Management</i> , 2022, 253, 115144.	9.2	20
33	Towards biochemical reaction monitoring using FT-IR synchrotron radiation. <i>Analyst</i> , 2006, 131, 489.	3.5	19
34	Cycle Stability and Hydration Behavior of Magnesium Oxide and Its Dependence on the Precursor-Related Particle Morphology. <i>Nanomaterials</i> , 2018, 8, 795.	4.1	19
35	An extension of the NPK method to include the pressure dependency of solid state reactions. <i>Thermochimica Acta</i> , 2017, 654, 168-178.	2.7	18
36	Flow-through Picoliter Dispenser: A New Approach for Solvent Elimination in FT-IR Spectroscopy. <i>Applied Spectroscopy</i> , 2002, 56, 902-908.	2.2	17

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37	Biogas desulfurization and biogas upgrading using a hybrid membrane system – modeling study. <i>Water Science and Technology</i> , 2013, 67, 326-332.	2.5	17
38	Effect of particle contact point treatment on the CFD simulation of the heat transfer in packed beds. <i>Chemical Engineering Research and Design</i> , 2021, 165, 242-253.	5.6	17
39	Highly selective TFAA-cleavage of tertiary 2,4-dimethoxybenzylamines and its use in the synthesis of secondary amines. <i>Tetrahedron</i> , 1991, 47, 4591-4602.	1.9	16
40	CFD-simulation of mass transfer effects in gas and vapour permeation modules. <i>Desalination</i> , 2002, 146, 237-241.	8.2	15
41	Membrane gas permeation in the upgrading of renewable hydrogen from biomass steam gasification gases. <i>Applied Thermal Engineering</i> , 2012, 43, 134-140.	6.0	15
42	Tuning the performance of MgO for thermochemical energy storage by dehydration – From fundamentals to phase impurities. <i>Applied Energy</i> , 2019, 253, 113562.	10.1	15
43	Characteristic Chemical Time Scales for Reactive Flow Modeling. <i>Combustion Science and Technology</i> , 2021, 193, 2807-2832.	2.3	15
44	Energy saving in sugar manufacturing through the integration of environmental friendly new membrane processes for thin juice pre-concentration. <i>Applied Thermal Engineering</i> , 2012, 43, 128-133.	6.0	14
45	Determination of mixing quality in biogas plant digesters using tracer tests and computational fluid dynamics. <i>Acta Universitatis Agriculturae Et Silviculturae Mendelianae Brunensis</i> , 2013, 61, 1269-1278.	0.4	13
46	Cost efficient CFD simulations: Proper selection of domain partitioning strategies. <i>Computer Physics Communications</i> , 2017, 219, 121-134.	7.5	12
47	Calcium Doping Facilitates Water Dissociation in Magnesium Oxide. <i>Advanced Sustainable Systems</i> , 2018, 2, 1700096.	5.3	12
48	Investigation on the influence of membrane selectivity on the performance of mobile biogas upgrading plants by process simulation. <i>Journal of Cleaner Production</i> , 2019, 231, 43-53.	9.3	12
49	Influence of particle residence time distribution on the biomass pyrolysis in a rotary kiln. <i>Journal of Analytical and Applied Pyrolysis</i> , 2021, 158, 105171.	5.5	12
50	Improvement of a Combustion Unit Based on a Grate Furnace for Granular Dry Solid Biofuels Using CFD Methods. <i>Heat Transfer Engineering</i> , 2010, 31, 774-781.	1.9	11
51	Validation of Turbulence Models for an Automotive SCR System with Laser Doppler Anemometry Measurements. , 0, , .		11
52	An Unreacted Shrinking Core Model Serves for Predicting Combustion Rates of Organic Additives in Clay Bricks. <i>Energy & Fuels</i> , 2020, 34, 16679-16692.	5.1	11
53	Influence of hemicellulose aggregate and gel layer formation on flux and retention during nanofiltration of alkaline solutions. <i>Desalination</i> , 2005, 175, 121-134.	8.2	9
54	Medium-temperature thermochemical energy storage with transition metal ammoniates – A systematic material comparison. <i>Applied Energy</i> , 2021, 285, 116470.	10.1	9

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55	Animal blood in translational research: How to adjust animal blood viscosity to the human standard. <i>Physiological Reports</i> , 2021, 9, e14880.	1.7	9
56	Pressure effects on the carbonation of MeO (Me ²⁺ =Co, Mn, Pb, Zn) for thermochemical energy storage. <i>Applied Energy</i> , 2019, 252, 113451.	10.1	8
57	Magnesium oxide from natural magnesite samples as thermochemical energy storage material. <i>Energy Procedia</i> , 2019, 158, 4861-4869.	1.8	8
58	A knowledge based system to support the process selection during waste water treatment. <i>Resources, Conservation and Recycling</i> , 2003, 37, 205-215.	10.8	7
59	Computation of Global and Local Mass Transfer in Hollow Fiber Membrane Modules. <i>Sustainability</i> , 2020, 12, 2207.	3.2	7
60	Enhanced mid-infrared multi-bounce ATR spectroscopy for online detection of hydrogen peroxide using a supercontinuum laser. <i>Optics Express</i> , 2018, 26, 12169-12179.	3.4	7
61	Designing Better Membrane Modules Using CFD. <i>Chemical Product and Process Modeling</i> , 2016, 11, 57-66.	0.9	6
62	The purification of fermentatively produced hydrogen using membrane technology: a simulation based on small-scale pilot plant results. <i>Clean Technologies and Environmental Policy</i> , 2016, 18, 315-322.	4.1	6
63	Comparing Fly Ash Samples from Different Types of Incinerators for Their Potential as Storage Materials for Thermochemical Energy and CO ₂ . <i>Materials</i> , 2019, 12, 3358.	2.9	6
64	Suitability of pulverised coal testing facilities for blast furnace applications. <i>Ironmaking and Steelmaking</i> , 2020, 47, 574-585.	2.1	6
65	Evaluation of Nanofiltration Membranes for Pure Lactic Acid Permeability. <i>Membranes</i> , 2022, 12, 302.	3.0	6
66	Enhancement of an object-oriented power plant simulator by seawater desalination topics. <i>Desalination</i> , 2003, 156, 355-360.	8.2	5
67	Suitable CO ₂ Solubility Models for Determination of the CO ₂ Removal Performance of Oxygenators. <i>Bioengineering</i> , 2021, 8, 33.	3.5	5
68	Microstructured Hollow Fiber Membranes: Potential Fiber Shapes for Extracorporeal Membrane Oxygenators. <i>Membranes</i> , 2021, 11, 374.	3.0	5
69	Online Raman monitoring of the phase transition of magnesium sulphite hydrate. <i>Chemical Engineering and Processing: Process Intensification</i> , 2005, 44, 471-475.	3.6	4
70	Photoacoustic Monitoring of CO ₂ in Biogas Matrix using a Quantum Cascade Laser. , 2006, , .		4
71	A nonchromatographic process for purification of secretory immunoglobulins from caprine whey. <i>Biotechnology Progress</i> , 2017, 33, 642-653.	2.6	4
72	Low-temperature carbonatization of metal oxides. <i>Energy Procedia</i> , 2019, 158, 4870-4881.	1.8	4

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73	CuSO ₄ /[Cu(NH ₃) ₄]SO ₄ -Composite Thermochemical Energy Storage Materials. <i>Nanomaterials</i> , 2020, 10, 2485.	4.1	4
74	Estimation Methods for Viscosity, Flow Rate and Pressure from Pump-Motor Assembly Parameters. <i>Sensors</i> , 2020, 20, 1451.	3.8	4
75	Co-Combustion Studies of Low-Rank Coal and Refuse-Derived Fuel: Performance and Reaction Kinetics. <i>Energies</i> , 2021, 14, 3796.	3.1	4
76	Modeling the effective thermal conductivity of hollow bricks at high temperatures. <i>Construction and Building Materials</i> , 2021, 309, 125066.	7.2	4
77	Reduced Model Describing Efficient Extraction of Hydrogen Transported as Co-Stream in the Natural Gas Grid. <i>Computer Aided Chemical Engineering</i> , 2018, 43, 1383-1388.	0.5	3
78	The Potential Use of Fly Ash from the Pulp and Paper Industry as Thermochemical Energy and CO ₂ Storage Material. <i>Energies</i> , 2021, 14, 3348.	3.1	3
79	Assessment of Graphical Methods for Determination of the Limiting Current Density in Complex Electrolysis-Feed Solutions. <i>Membranes</i> , 2022, 12, 241.	3.0	3
80	Numerical and experimental study of heterogeneous reactions involving carbonaceous compounds in clay brick firing. <i>Construction and Building Materials</i> , 2022, 327, 126744.	7.2	3
81	Residence Time Distribution of Non-Spherical Particles in a Continuous Rotary Drum. <i>Processes</i> , 2022, 10, 1069.	2.8	3
82	CFD-Simulation of Preparative Chromatographic Columns: Effect of the Distributor and the Column Design on the Separation Performance. <i>Chemie-Ingenieur-Technik</i> , 2001, 73, 639-639.	0.8	2
83	Processing and simulation of few nm thick high- ϵ_r dielectric films. <i>Microelectronic Engineering</i> , 2006, 83, 1571-1572.	2.4	2
84	Non-parametric dynamical estimation of blood flow rate, pressure difference and viscosity for a miniaturized blood pump. <i>International Journal of Artificial Organs</i> , 2021, , 039139882110067.	1.4	2
85	Considerations on Temperature Dependent Effective Diffusion and Permeability of Natural Clays. <i>Materials</i> , 2021, 14, 4942.	2.9	2
86	Solubility Data of Potential Salts in the MgO-CaO-SO ₂ -H ₂ O-O ₂ System for Process Modeling. <i>Processes</i> , 2021, 9, 50.	2.8	2
87	Enhanced kinetic model identification for gas-solid reactions through Computational Fluid Dynamics. <i>Chemical Engineering Journal</i> , 2022, 430, 132850.	12.7	2
88	Dataset for the simulated biomass pyrolysis in rotary kilns with varying particle residence time distributions. <i>Data in Brief</i> , 2021, 39, 107603.	1.0	2
89	Air-to-Air Heat and Moisture Recovery in a Plate-Frame Exchanger Using Composite and Asymmetric Membranes. <i>Membranes</i> , 2022, 12, 484.	3.0	2
90	Titanium-Pillared Clay: Preparation Optimization, Characterization, and Artificial Neural Network Modeling. <i>Materials</i> , 2022, 15, 4502.	2.9	2

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91	Simulation and optimization of the reactive absorption of HF/HNO ₃ during pickling acid regeneration. Computer Aided Chemical Engineering, 2000, 8, 919-924.	0.5	1
92	CFD methods for the reduction of reactive gas emission from a paper laminating machine. Journal of Hazardous Materials, 2007, 144, 687-691.	12.4	1
93	Membrane Gas Permeation in the Production of Renewable Gaseous Fuels. Procedia Engineering, 2012, 44, 1342.	1.2	1
94	CFD modelling of organosolv lignin extraction in packed beds. Computer Aided Chemical Engineering, 2018, 43, 1583-1588.	0.5	1
95	Design and simulation of gas burner ejectors. Carbon Resources Conversion, 2021, 4, 28-35.	5.9	1
96	Non-isothermal effectiveness factors in thermo-chemical char conversion. Carbon Resources Conversion, 2021, 4, 47-54.	5.9	1
97	Water as a Blood Model for Determination of CO ₂ Removal Performance of Membrane Oxygenators. Membranes, 2021, 11, 356.	3.0	1
98	Importance of considering interstitial fluid effects in the kinetic theory of granular flow for raceway formation prediction. Chemical Engineering Science, 2022, 247, 117026.	3.8	1
99	Computational Fluid Dynamics and Experimental Analysis of Blood Gas Transport in a Hollow Fiber Module. IFMBE Proceedings, 2020, , 1453-1458.	0.3	1
100	Heat Transfer Models for Dense Pulverized Particle Jets. Processes, 2022, 10, 238.	2.8	1
101	Beet Sugar Pulp-Press Water Treatment: A Comparison of Nanofiltration and Reverse Osmosis Processes. Procedia Engineering, 2012, 44, 634.	1.2	0
102	Ultrafiltration as Pre-Treatment Technology at the Green Biorefinery Upper Austria. Procedia Engineering, 2012, 44, 1337-1339.	1.2	0
103	Collocation Method for the Modeling of Membrane Gas Permeation Systems. International Journal of Nonlinear Sciences and Numerical Simulation, 2014, 15, .	1.0	0
104	Collocation Method for the Modeling of Membrane Gas Permeation Systems. International Journal of Nonlinear Sciences and Numerical Simulation, 2015, 16, 141-149.	1.0	0
105	Simultaneous Laser Doppler Velocimetry and stand-off Raman spectroscopy as a novel tool to assess flow characteristics of process streams. Chemical Engineering Journal, 2018, 334, 123-133.	12.7	0
106	Thermochemical Energy Storage: Calcium Doping Facilitates Water Dissociation in Magnesium Oxide (Adv. Sustainable Syst. 1/2018). Advanced Sustainable Systems, 2018, 2, 1870004.	5.3	0
107	Computational fluid dynamics analysis of char conversion in Sandia's pressurized entrained flow reactor. Review of Scientific Instruments, 2020, 91, 074103.	1.3	0
108	Ethyl lactate production by reactive distillation – optimization of reaction kinetics and energy efficiency. Open Research Europe, 0, 1, 82.	2.0	0

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109	Ethyl lactate production by reactive distillation – optimization of reaction kinetics and energy efficiency. Open Research Europe, 0, 1, 82.	2.0	0
110	APPLICATION OF PERVAPORATION FOR THE IN-SITU RECOVERY OF GREEN SOLVENTS AND BIOFUELS FROM ABE FERMENTATION. Environmental Engineering and Management Journal, 2019, 18, 1711-1719.	0.6	0
111	Dataset for the Heat-Up and Heat Transfer towards Single Particles and Synthetic Particle Clusters from Particle-Resolved CFD Simulations. Data, 2022, 7, 23.	2.3	0