Istvan Lagzi

List of Publications by Year
in descending order

126 papers	3,364 citations	172443 29 h-index	161844 54 g-index
130 all docs	130 docs citations	130 times ranked	3957 citing authors

#	ARTICLE	IF	CITATIONS
1	Green synthesis of gold nanoparticles by thermophilic filamentous fungi. Scientific Reports, 2018, 8, 3943.	3.3	261
2	Maze Solving by Chemotactic Droplets. Journal of the American Chemical Society, 2010, 132, 1198-1199.	13.7	254
3	Nanoseparations: Strategies for size and/or shape-selective purification of nanoparticles. Current Opinion in Colloid and Interface Science, 2011, 16, 135-148.	7.4	235
4	How and Why Nanoparticleâ€™s Curvature Regulates the Apparent p<i>K</i>_a of the Coating Ligands. Journal of the American Chemical Society, 2011, 133, 2192-2197.	13.7	208
5	Chromatography in a Single Metalâ˜'Organic Framework (MOF) Crystal. Journal of the American Chemical Society, 2010, 132, 16358-16361.	13.7	192
6	Nanoparticle Oscillations and Fronts. Angewandte Chemie - International Edition, 2010, 49, 8616-8619.	13.8	120
7	Dispersion modeling of air pollutants in the atmosphere: a review. Open Geosciences, 2014, 6, .	1.7	95
8	Pattern Formation in Precipitation Reactions: The Liesegang Phenomenon. Langmuir, 2020, 36, 481-497.	3.5	83
9	Liesegang Rings Engineered from Charged Nanoparticles. Journal of the American Chemical Society, 2010, 132, 58-60.	13.7	78
10	Bridging Interactions and Selective Nanoparticle Aggregation Mediated by Monovalent Cations. ACS Nano, 2011, 5, 530-536.	14.6	71
11	Self-division of giant vesicles driven by an internal enzymatic reaction. Chemical Science, 2020, 11, 3228-3235.	7.4	63
12	Vesicle-to-Micelle Oscillations and Spatial Patterns. Langmuir, 2010, 26, 13770-13772.	3.5	62
13	Pattern Formation and Self-Organization in a Simple Precipitation System. Langmuir, 2007, 23, 961-964.	3.5	60
14	Charged nanoparticles as supramolecular surfactants for controlling the growth and stabilityÂofÂmicrocrystals. Nature Materials, 2012, 11, 227-232.	27.5	59
15	Pattern Formation in Reactionâ˜'Diffusion Systems:Â Cellular Acidity Fronts. The Journal of Physical Chemistry, 1996, 100, 14837-14839.	2.9	57
16	Controlling and Engineering Precipitation Patterns. Langmuir, 2012, 28, 3350-3354.	3.5	56
17	A review of numerical models to predict the atmospheric dispersion of radionuclides. Journal of Environmental Radioactivity, 2018, 182, 20-33.	1.7	55
18	Pattern transition between periodic Liesegang pattern and crystal growth regime in reactionâ€“diffusion systems. Chemical Physics Letters, 2009, 468, 188-192.	2.6	54

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19	One-step green synthesis of gold nanoparticles by mesophilic filamentous fungi. Chemical Physics Letters, 2016, 645, 1-4.	2.6	52
20	Formation of Liesegang patterns in an electric field. Physical Chemistry Chemical Physics, 2002, 4, 1268-1270.	2.8	49
21	Probability of the Emergence of Helical Precipitation Patterns in the Wake of Reaction-Diffusion Fronts. Physical Review Letters, 2013, 110, 078303.	7.8	47
22	Air pollution modelling using a Graphics Processing Unit with CUDA. Computer Physics Communications, 2010, 181, 105-112.	7.5	41
23	Short and long term dispersion patterns of radionuclides in the atmosphere around the Fukushima Nuclear Power Plant. Journal of Environmental Radioactivity, 2011, 102, 1117-1121.	1.7	39
24	Interaction of Positively Charged Gold Nanoparticles with Cancer Cells Monitored by an in Situ Label-Free Optical Biosensor and Transmission Electron Microscopy. ACS Applied Materials & Interfaces, 2018, 10, 26841-26850.	8.0	39
25	Bistability and Hysteresis During Aggregation of Charged Nanoparticles. Journal of Physical Chemistry Letters, 2010, 1, 1459-1462.	4.6	38
26	Design of equidistant and revert type precipitation patterns in reactionâ€“diffusion systems. Physical Chemistry Chemical Physics, 2008, 10, 2368.	2.8	35
27	Maze Solving Using Fatty Acid Chemistry. Langmuir, 2014, 30, 9251-9255.	3.5	35
28	Chemically coded time-programmed self-assembly. Molecular Systems Design and Engineering, 2017, 2, 274-282.	3.4	35
29	Growth of Nanoparticles and Microparticles by Controlled Reaction-Diffusion Processes. Langmuir, 2015, 31, 1828-1834.	3.5	33
30	Simulation of the dispersion of nuclear contamination using an adaptive Eulerian grid model. Journal of Environmental Radioactivity, 2004, 75, 59-82.	1.7	32
31	Simulation of reactionâ€“diffusion processes in three dimensions using CUDA. Chemometrics and Intelligent Laboratory Systems, 2011, 108, 76-85.	3.5	30
32	Independence of Primary and Secondary Structures in Periodic Precipitation Patterns. Journal of Physical Chemistry Letters, 2011, 2, 345-349.	4.6	24
33	Maze solving using temperature-induced Marangoni flow. RSC Advances, 2015, 5, 48563-48568.	3.6	24
34	Predictability of the dispersion of Fukushima-derived radionuclides and their homogenization in the atmosphere. Scientific Reports, 2016, 6, 19915.	3.3	24
35	Simulation of a Crossover from the Precipitation Wave to Moving Liesegang Pattern Formation. Journal of Physical Chemistry A, 2005, 109, 730-733.	2.5	22
36	Simulation of Liesegang Patterns:Â Effect of Reversible Complex Formation of Precipitate. Journal of Physical Chemistry B, 2003, 107, 13750-13753.	2.6	19

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37	Modelling ozone fluxes over Hungary. Atmospheric Environment, 2004, 38, 6211-6222.	4.1	19
38	Mechanical Control of Periodic Precipitation in Stretchable Gels to Retrieve Information on Elastic Deformation and for the Complex Patterning of Matter. Advanced Materials, 2020, 32, e1905779.	21.0	19
39	Probing the mystery of Liesegang band formation: revealing the origin of self-organized dual-frequency micro and nanoparticle arrays. Soft Matter, 2016, 12, 8367-8374.	2.7	18
40	Stochastic description of precipitate pattern formation in an electric field. Physical Chemistry Chemical Physics, 2003, 5, 4144-4148.	2.8	17
41	Effect of geometry on the time law of Liesegang patterning. Chemical Physics Letters, 2004, 396, 97-101.	2.6	17
42	A new universal law for the Liesegang pattern formation. Journal of Chemical Physics, 2005, 122, 184707.	3.0	17
43	â€œNanoarmouredâ€•droplets of different shapes formed by interfacial self-assembly and crosslinking of metal nanoparticles. Nanoscale, 2010, 2, 2366.	5.6	17
44	Helices in the wake of precipitation fronts. Physical Review E, 2013, 88, 022141.	2.1	16
45	Sensitivity enhancement for mycotoxin determination by optical waveguide lightmode spectroscopy using gold nanoparticles of different size and origin. Food Chemistry, 2018, 267, 10-14.	8.2	16
46	Shape changes and budding of giant vesicles induced by an internal chemical trigger: an interplay between osmosis and pH change. Physical Chemistry Chemical Physics, 2021, 23, 4262-4270.	2.8	16
47	Self-organization of nanoparticles and molecules in periodic Liesegang-type structures. Science Advances, 2021, 7, .	10.3	16
48	Complex motion of precipitation bands. Chemical Physics Letters, 2007, 433, 286-291.	2.6	15
49	Chemical robotics â€" chemotactic drug carriers. Open Medicine (Poland), 2013, 8, 377-382.	1.3	15
50	Fatty acid droplet self-division driven by a chemical reaction. Physical Chemistry Chemical Physics, 2014, 16, 4639-4641.	2.8	15
51	Systematic Front Distortion and Presence of Consecutive Fronts in a Precipitation System. Journal of Physical Chemistry B, 2006, 110, 4535-4537.	2.6	14
52	Matalonâ€"Packter law for stretched helicoids formed in precipitation processes. Chemical Physics Letters, 2013, 577, 38-41.	2.6	14
53	Existence of a Precipitation Threshold in the Electrostatic Precipitation of Oppositely Charged Nanoparticles. Angewandte Chemie - International Edition, 2018, 57, 16062-16066.	13.8	14
54	Label-Free in Situ Optical Monitoring of the Adsorption of Oppositely Charged Metal Nanoparticles. Langmuir, 2014, 30, 13478-13482.	3.5	13

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55	Transition of Liesegang Precipitation Systems: Simulations with an Adaptive Grid PDE Method. Communications in Computational Physics, 2011, 10, 867-881.	1.7	12
56	Numerical simulations of atmospheric dispersion of iodine-131 by different models. PLoS ONE, 2017, 12, e0172312.	2.5	12
57	Periodic Precipitation of Zeolitic Imidazolate Frameworks in a Gelled Medium. Journal of Physical Chemistry C, 2022, 126, 9580-9586.	3.1	12
58	Simulation of Liesegang pattern formation using a discrete stochastic model. Chemical Physics Letters, 2003, 371, 321-326.	2.6	11
59	Modelling photochemical air pollutant formation in Hungary using an adaptive grid technique. International Journal of Environment and Pollution, 2009, 36, 44.	0.2	11
60	Electric field assisted motion of a mercury droplet. Scientific Reports, 2021, 11, 2753.	3.3	11
61	Shape Deformation, Budding and Division of Giant Vesicles and Artificial Cells: A Review. Life, 2022, 12, 841.	2.4	11
62	Rewritable and pHâ€Sensitive Micropatterns Based on Nanoparticle â€œInksâ€. Small, 2010, 6, 2114-2116.	10.0	10
63	Three-dimensional superdiffusive chemical waves in a precipitation system. Physical Chemistry Chemical Physics, 2014, 16, 24656-24660.	2.8	10
64	Self-Assembly of Charged Nanoparticles by an Autocatalytic Reaction Front. Langmuir, 2015, 31, 12019-12024.	3.5	10
65	The Liesegang eyes phenomenon. Chemical Physics Letters, 2005, 414, 384-388.	2.6	9
66	Chemical Waves in Heterogeneous Media. Journal of Physical Chemistry A, 2014, 118, 11678-11682.	2.5	9
67	Green synthesis and <i>in situ</i> immobilization of gold nanoparticles and their application for the reduction of <i>p</i>-nitrophenol in continuous-flow mode. RSC Advances, 2019, 9, 9193-9197.	3.6	9
68	Coupling traffic originated urban air pollution estimation with an atmospheric chemistry model. Urban Climate, 2021, 37, 100868.	5.7	9
69	Equidistant precipitate pattern formation behind a propagating chemical front. Chemical Physics Letters, 2003, 372, 831-835.	2.6	8
70	Targets, ripples and spirals in a precipitation system with anomalous dispersion. Physical Chemistry Chemical Physics, 2015, 17, 19806-19814.	2.8	8
71	Understanding the formation of aligned, linear arrays of Ag nanoparticles. RSC Advances, 2016, 6, 28388-28392.	3.6	8
72	Self-Assembly of Chiral Menthol Molecules from a Liquid Film into Ring-Banded Spherulites. Crystal Growth and Design, 2019, 19, 4063-4069.	3.0	8

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73	Chemical Resonance, Beats, and Frequency Locking in Forced Chemical Oscillatory Systems. Journal of Physical Chemistry Letters, 2020, 11, 3014-3019.	4.6	8
74	Chemical Tracking of Temperature by Concurrent Periodic Precipitation Pattern Formation in Polyacrylamide Gels. ACS Applied Materials & Interfaces, 2022, 14, 7252-7260.	8.0	8
75	Helicoidal precipitation patterns in silica and agarose gels. Chemical Physics Letters, 2014, 599, 159-162.	2.6	7
76	Regular Liesegang patterns and precipitation waves in an open system. Physical Chemistry Chemical Physics, 2005, 7, 3845.	2.8	6
77	Effect of the soil wetness state on the stomatal ozone fluxes over Hungary. International Journal of Environment and Pollution, 2009, 36, 180.	0.2	6
78	Control of precipitation patterns in two-dimensions by pH field. Chemical Physics Letters, 2011, 503, 231-234.	2.6	6
79	Inorganic salts direct the assembly of charged nanoparticles into composite nanoscopic spheres, plates, or needles. Faraday Discussions, 2012, 159, 201.	3.2	6
80	Self-division of a mineral oilâ€"fatty acid droplet. Chemical Physics Letters, 2015, 640, 1-4.	2.6	6
81	Self-assembly of like-charged nanoparticles into Voronoi diagrams. Physical Chemistry Chemical Physics, 2016, 18, 25735-25740.	2.8	6
82	From Masterâ€"Slave to Peer-to-Peer Coupling in Chemical Reaction Networks. Journal of Physical Chemistry A, 2017, 121, 3192-3198.	2.5	6
83	Spatiotemporal and Microscopic Analyses of Asymmetric Liesegang Bands: Diffusion-Limited Crystallization of Calcium Phosphate in a Hydrogel. Crystal Growth and Design, 2021, 21, 6119-6128.	3.0	6
84	Precipitate pattern formation in fluctuating media. Journal of Chemical Physics, 2004, 120, 1837-1840.	3.0	5
85	Dispersion of aerosol particles in the free atmosphere using ensemble forecasts. Nonlinear Processes in Geophysics, 2013, 20, 759-770.	1.3	5
86	Propagating Fronts and Morphological Instabilities in a Precipitation Reaction. Langmuir, 2014, 30, 5460-5465.	3.5	5
87	Time-Dependent Downscaling of PM2.5 Predictions from CAMS Air Quality Models to Urban Monitoring Sites in Budapest. Atmosphere, 2020, 11, 669.	2.3	5
88	Effect of the Membrane Composition of Giant Unilamellar Vesicles on Their Budding Probability: A Trade-Off between Elasticity and Preferred Area Difference. Life, 2021, 11, 634.	2.4	5
89	The Simulation of Photochemical Smog Episodes in Hungary and Central Europe Using Adaptive Gridding Models. Lecture Notes in Computer Science, 2001, , 67-76.	1.3	5
90	Reactionâ€"Diffusion Assisted Synthesis of Gold Nanoparticles: Route from the Spherical Nano-Sized Particles to Micrometer-Sized Plates. Journal of Physical Chemistry C, 2021, 125, 26116-26124.	3.1	5

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91	Inhibition of the urea-urease reaction by the components of the zeolite imidazole frameworks-8 and the formation of urease-zinc-imidazole hybrid compound. Reaction Kinetics, Mechanisms and Catalysis, 2022, 135, 15-28.	1.7	5
92	Synthesis of zeolitic imidazolate framework-8 and gold nanoparticles in a sustained out-of-equilibrium state. Scientific Reports, 2022, 12, 222.	3.3	5
93	Bioinspired Control of Calcium Phosphate Liesegang Patterns Using Anionic Polyelectrolytes. Langmuir, 2022, 38, 2515-2524.	3.5	5
94	Application of a chemical clock in material design: chemically programmed synthesis of zeolitic imidazole framework-8. Chemical Communications, 2022, 58, 5777-5780.	4.1	5
95	Polymorph Selection of Zeolitic Imidazolate Frameworks via Kinetic and Thermodynamic Control. Crystal Growth and Design, 2022, 22, 4268-4276.	3.0	5
96	Existence of a Precipitation Threshold in the Electrostatic Precipitation of Oppositely Charged Nanoparticles. Angewandte Chemie, 2018, 130, 16294-16298.	2.0	4
97	Autonomous Chemical Modulation and Unidirectional Coupling in Two Oscillatory Chemical Systems. Journal of Physical Chemistry A, 2019, 123, 1498-1504.	2.5	4
98	Nanocrystals Assembled by the Chemical Reaction of the Dispersion Solvent. Angewandte Chemie - International Edition, 2020, 59, 13086-13092.	13.8	4
99	Interfacial Mass Transfer in Trichloroethylene/Surfactants/ Water Systems: Implications for Remediation Strategies. Reactions, 2021, 2, 312-322.	2.1	4
100	Liesegang patterns: Complex formation of precipitate in an electric field. Pramana - Journal of Physics, 2005, 64, 291-298.	1.8	3
101	Design of non-autonomous pH oscillators and the existence of chemical beat phenomenon in a neutralization reaction. Scientific Reports, 2021, 11, 11011.	3.3	3
102	Phase separation mechanism for a unified understanding of dissipative pattern formation in a Liesegang system. Physical Chemistry Chemical Physics, 2022, 24, 2088-2094.	2.8	3
103	Reactionâ€“Diffusion Dynamics of pH Oscillators in Oscillatory Forced Open Spatial Reactors. ACS Omega, 2021, 6, 34367-34374.	3.5	3
104	Patterning Silver Nanowires by Inducing Transient Concentration Gradients in Reaction Mixtures. ACS Applied Materials & Interfaces, 2021, 13, 60462-60470.	8.0	3
105	Stabilization and destabilization effects of the electric field on stochastic precipitate pattern formation. Chemical Physics, 2004, 303, 151-155.	1.9	2
106	Oxidation of a water-soluble porphyrin complex by bromate. Reaction Kinetics and Catalysis Letters, 2008, 95, 135-142.	0.6	2
107	The width of Liesegang bands: A study using moving boundary model and simulation. Pramana - Journal of Physics, 2012, 78, 135-145.	1.8	2
108	Estimation of the dispersion of an accidental release of radionuclides and toxic materials based on weather type classification. Theoretical and Applied Climatology, 2012, 107, 375-387.	2.8	2

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109	Chemical-based Maze Solving Techniques. Current Physical Chemistry, 2015, 5, 29-36.	0.2	2
110	Solving Reaction-Diffusion and Advection Problems with Richardson Extrapolation. Journal of Chemistry, 2015, 2015, 1-9.	1.9	2
111	Eulerian and Lagrangian Approaches for Modelling of Air Quality. Mathematics in Industry, 2016, , 73-85.	0.3	2
112	pH mediated kinetics of assembly and disassembly of molecular and nanoscopic building blocks. Reaction Kinetics, Mechanisms and Catalysis, 2018, 123, 323-333.	1.7	2
113	Online coupled modeling of weather and air quality of Budapest using the WRF-Chem model. Idojaras, 2019, 123, 203-215.	0.4	2
114	Stochastic cellular automata modeling of excitable systems. Open Physics, 2007, 5, .	1.7	1
115	Development of a grid enabled chemistry application. International Journal of Computational Science and Engineering, 2009, 4, 195.	0.5	1
116	Shortest Path Finding in Mazes by Active and Passive Particles. Emergence, Complexity and Computation, 2018, , 401-408.	0.3	1
117	The Relevance of Inorganic Nonlinear Chemical Reactions for the Origin of Life Studies. Communications in Computer and Information Science, 2019, , 138-150.	0.5	1
118	Carbon Dioxide-Driven Coupling in a Two-Compartment System: Methyl Red Oscillator. Journal of Physical Chemistry A, 2020, 124, 10758-10764.	2.5	1
119	Stretchable Gels: Mechanical Control of Periodic Precipitation in Stretchable Gels to Retrieve Information on Elastic Deformation and for the Complex Patterning of Matter (Adv. Mater. 10/2020). Advanced Materials, 2020, 32, 2070077.	21.0	1
120	Comment on â€œPrecipitate pattern formation in fluctuating mediaâ€•[J. Chem. Phys. 120, 1837 (2004)]. Journal of Chemical Physics, 2004, 121, 3943-3943.	3.0	0
121	Nanoparticle â€œinksâ€• Rewritable and pH-Sensitive Micropatterns Based on Nanoparticle â€œInksâ€•(Small) Tj ETQq1 1 0.784314	10.0	0
122	Nanocrystals Assembled by the Chemical Reaction of the Dispersion Solvent. Angewandte Chemie, 2020, 132, 13186-13192.	2.0	0
123	Development of a Quartz Crystal Microbalance with Impedance Measurement with Bio-Gold Nanoparticles for Enhanced Sensitivity. International Journal of Electrical Energy, 2018, , 122-126.	0.4	0
124	A kÃ©miai mechanizmusok szerepe a levegominosÃ©g-modellezÃ©sbenÂ. Egyetemi MeteorolÃ³giai FÃ¼zetek, 0, , 109-116.	0.0	0
125	VÃ¡rosi felszÃn parametrizÃ¡ciÃ³k szerepe Ã©s hatÃ¡sa a levegÅ‘minÅ‘sÃ©g becslÃ©sÃ©re beÃ©pÃtett kÃ¶rnyezetben. Egyetemi MeteorolÃ³giai FÃ¼zetek, 0, , 48-54.	0.0	0
126	Development of a Grid Enabled Chemistry Application. , 2005, , 137-144.		0