

Won Bo Lee

List of Publications by Citations

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128
papers

2,741
citations

26
h-index

49
g-index

140
ext. papers

3,393
ext. citations

7.9
avg. IF

5.24
L-index

#	Paper	IF	Citations
128	Highly conductive, stretchable and biocompatible Ag-Au core-sheath nanowire composite for wearable and implantable bioelectronics. <i>Nature Nanotechnology</i> , 2018 , 13, 1048-1056	28.7	440
127	Molecular dynamics simulation study of nonconcatenated ring polymers in a melt. I. Statics. <i>Journal of Chemical Physics</i> , 2011 , 134, 204904	3.9	225
126	Molecular dynamics simulation study of nonconcatenated ring polymers in a melt. II. Dynamics. <i>Journal of Chemical Physics</i> , 2011 , 134, 204905	3.9	172
125	Optoelectronic Synapse Based on IGZO-Alkylated Graphene Oxide Hybrid Structure. <i>Advanced Functional Materials</i> , 2018 , 28, 1804397	15.6	171
124	High-Resolution Spin-on-Patterning of Perovskite Thin Films for a Multiplexed Image Sensor Array. <i>Advanced Materials</i> , 2017 , 29, 1702902	24	100
123	Architectural engineering of rod-coil compatibilizers for producing mechanically and thermally stable polymer solar cells. <i>ACS Nano</i> , 2014 , 8, 10461-70	16.7	80
122	Enhancing p-Type Thermoelectric Performances of Polycrystalline SnSe via Tuning Phase Transition Temperature. <i>Journal of the American Chemical Society</i> , 2017 , 139, 10887-10896	16.4	79
121	Supramolecular Diblock Copolymers: A Field-Theoretic Model and Mean-Field Solution. <i>Macromolecules</i> , 2007 , 40, 693-702	5.5	70
120	Moving bed adsorption process with internal heat integration for carbon dioxide capture. <i>International Journal of Greenhouse Gas Control</i> , 2013 , 17, 13-24	4.2	56
119	Size-Controlled Polymer-Coated Nanoparticles as Efficient Compatibilizers for Polymer Blends. <i>Macromolecules</i> , 2011 , 44, 9852-9862	5.5	55
118	Controlling the Orientation of Block Copolymer Thin Films using Thermally-Stable Gold Nanoparticles with Tuned Surface Chemistry. <i>Macromolecules</i> , 2011 , 44, 9356-9365	5.5	53
117	Three-dimensional multilayered nanostructures with controlled orientation of microdomains from cross-linkable block copolymers. <i>ACS Nano</i> , 2011 , 5, 6164-73	16.7	53
116	Amorphous-Phase-Mediated Crystallization of Ni Nanocrystals Revealed by High-Resolution Liquid-Phase Electron Microscopy. <i>Journal of the American Chemical Society</i> , 2019 , 141, 763-768	16.4	52
115	Anomalous phase sequences in lyotropic liquid crystals. <i>Physical Review Letters</i> , 2007 , 99, 187801	7.4	46
114	Frustrated self-assembly of dendron and dendrimer-based supramolecular liquid crystals. <i>Soft Matter</i> , 2009 , 5, 92-97	3.6	43
113	Phase Morphologies in Reversibly Bonding Supramolecular Triblock Copolymer Blends. <i>Macromolecules</i> , 2007 , 40, 8445-8454	5.5	41
112	Composition change-driven texturing and doping in solution-processed SnSe thermoelectric thin films. <i>Nature Communications</i> , 2019 , 10, 864	17.4	39

111	Polymer-Clay Nanocomposite Solid-State Electrolyte with Selective Cation Transport Boosting and Retarded Lithium Dendrite Formation. <i>Advanced Energy Materials</i> , 2020 , 10, 2003114	21.8	35
110	Molecular Design of Graft-Assembly for Ordered Microphase Separation of P3HT-Based Rod-Coil Copolymers. <i>Macromolecules</i> , 2013 , 46, 8472-8478	5.5	34
109	Vertical Orientation of Nanodomains on Versatile Substrates through Self-Neutralization Induced by Star-Shaped Block Copolymers. <i>Advanced Functional Materials</i> , 2015 , 25, 5414-5419	15.6	32
108	Novel Phase Morphologies in a Microphase-Separated Dendritic Polymer Melt. <i>Macromolecules</i> , 2009 , 42, 849-859	5.5	32
107	Thickness Dependent Ordering in Laterally Confined Monolayers of Spherical-Domain Block Copolymers. <i>Macromolecules</i> , 2007 , 40, 5791-5800	5.5	32
106	Widom Delta of Supercritical Gas-Liquid Coexistence. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 173461738	17.38	29
105	Phase Behavior of Star-Shaped Polystyrene-block-poly(methyl methacrylate) Copolymers. <i>Macromolecules</i> , 2014 , 47, 5295-5302	5.5	29
104	Entangled Polymer Melts: Relation between Plateau Modulus and Stress Autocorrelation Function. <i>Macromolecules</i> , 2009 , 42, 6270-6276	5.5	29
103	Promoting alkali and alkaline-earth metals on MgO for enhancing CO ₂ capture by first-principles calculations. <i>Physical Chemistry Chemical Physics</i> , 2014 , 16, 24818-23	3.6	28
102	Symmetry Transitions of Polymer-Grafted Nanoparticles: Grafting Density Effect. <i>Chemistry of Materials</i> , 2019 , 31, 5264-5273	9.6	26
101	Toxic gas release modeling for real-time analysis using variational autoencoder with convolutional neural networks. <i>Chemical Engineering Science</i> , 2018 , 181, 68-78	4.4	25
100	A Plesiohedral Cellular Network of Graphene Bubbles for Ultralight, Strong, and Superelastic Materials. <i>Advanced Materials</i> , 2018 , 30, e1802997	24	24
99	Graft Architected Rod-Coil Copolymers Based on Alternating Conjugated Backbone: Morphological and Optical Properties. <i>Macromolecules</i> , 2015 , 48, 5563-5569	5.5	23
98	Self-consistent field theory for lipid-based liquid crystals: hydrogen bonding effect. <i>Journal of Chemical Physics</i> , 2008 , 128, 074504	3.9	22
97	Mechanistic Study on the Shape Transition of Block Copolymer Particles Driven by Length-Controlled Nanorod Surfactants. <i>Chemistry of Materials</i> , 2018 , 30, 8669-8678	9.6	22
96	Design of liquid-crystalline foods via field theoretic computer simulations. <i>Trends in Food Science and Technology</i> , 2006 , 17, 220-226	15.3	21
95	Self-Consistent Field Theory of Gaussian Ring Polymers. <i>Macromolecules</i> , 2012 , 45, 3263-3269	5.5	18
94	Assemblies of Colloidal CdSe Tetrapod Nanocrystals with Lengthy Arms for Flexible Thin-Film Transistors. <i>Nano Letters</i> , 2017 , 17, 2433-2439	11.5	16

93	Gas-Phase Carbonylation of Dimethyl Ether on the Stable Seed-Derived Ferrierite. <i>ACS Catalysis</i> , 2020 , 10, 5135-5146	13.1	16
92	Aspect-Ratio Effect of Nanorod Compatibilizers in Conducting Polymer Blends.. <i>ACS Macro Letters</i> , 2014 , 3, 398-404	6.6	15
91	Monte Carlo simulations on the local density inhomogeneities of sub- and supercritical carbon dioxide: Statistical analysis based on the Voronoi tessellation. <i>Journal of Supercritical Fluids</i> , 2017 , 119, 36-43	4.2	15
90	Lateral Buckling of High Aspect Ratio Janus Nanowalls. <i>Advanced Functional Materials</i> , 2012 , 22, 3723-3728	1.5	14
89	Practical Microkinetic Modeling Approach for Methanol Synthesis from Syngas over a Cu-Based Catalyst. <i>Industrial & Engineering Chemistry Research</i> , 2019 ,	3.9	13
88	An improved CO ₂ adsorption efficiency for the zeolites impregnated with the amino group: A molecular simulation approach. <i>International Journal of Greenhouse Gas Control</i> , 2013 , 19, 350-357	4.2	13
87	Motion-Programmed Bar-Coating Method with Controlled Gap for High-Speed Scalable Preparation of Highly Crystalline Organic Semiconductor Thin Films. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 47153-47161	9.5	13
86	Molecular dynamics study on microstructures of diblock copolymer melts with soft potential and potential recovery. <i>Physical Review E</i> , 2016 , 94, 032501	2.4	12
85	Topological extension of the isomorph theory based on the Shannon entropy. <i>Physical Review E</i> , 2019 , 100, 012118	2.4	12
84	Toward residual-layer-free nanoimprint lithography in large-area fabrication 2014 , 26, 39-48		12
83	Controlled Assembly of Icosahedral Colloidal Clusters for Structural Coloration. <i>Chemistry of Materials</i> , 2020 , 32, 9704-9712	9.6	12
82	Topological Characterization of Rigid-Nonrigid Transition across the Frenkel Line. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 6524-6528	6.4	12
81	"Two-Phase" Thermodynamics of the Frenkel Line. <i>Journal of Physical Chemistry Letters</i> , 2018 , 9, 4550-4554	6.4	11
80	Molecular dynamics simulation on the local density distribution and solvation structure of supercritical CO ₂ around naphthalene. <i>Journal of Supercritical Fluids</i> , 2017 , 130, 364-372	4.2	11
79	Trends and Outlook of Computational Chemistry and Microkinetic Modeling for Catalytic Synthesis of Methanol and DME. <i>Catalysts</i> , 2020 , 10, 655	4	10
78	Root causality analysis at early abnormal stage using principal component analysis and multivariate Granger causality. <i>Chemical Engineering Research and Design</i> , 2020 , 135, 113-125	5.5	10
77	Comprehensive framework for underground pipeline management with reliability and cost factors using Monte Carlo simulation. <i>Journal of Loss Prevention in the Process Industries</i> , 2020 , 63, 104035	3.5	10
76	Probabilistic characterization of the Widom delta in supercritical region. <i>Journal of Chemical Physics</i> , 2018 , 149, 014502	3.9	10

75	A corresponding-state framework for the structural transition of supercritical fluids across the Widom delta. <i>Journal of Chemical Physics</i> , 2019 , 150, 154503	3.9	9
74	Universality, Scaling, and Collapse in Supercritical Fluids. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 451-455	6.4	9
73	Unusual n-type thermoelectric properties of Bi ₂ Te ₃ doped with divalent alkali earth metals. <i>Journal of Solid State Chemistry</i> , 2019 , 269, 396-400	3.3	9
72	Robust design of ambient-air vaporizer based on time-series clustering. <i>Computers and Chemical Engineering</i> , 2018 , 118, 236-247	4	9
71	Topological generalization of the rigid-nonrigid transition in soft-sphere and hard-sphere fluids. <i>Physical Review E</i> , 2019 , 99, 052603	2.4	8
70	Material Optimization for a High Power Thermoelectric Generator in Wearable Applications. <i>Applied Sciences (Switzerland)</i> , 2017 , 7, 1015	2.6	8
69	Prediction of the Crystal Morphology of β HMX using a Generalized Interfacial Structure Analysis Model. <i>Crystal Growth and Design</i> , 2018 , 18, 2349-2357	3.5	8
68	Phase Behavior of 18-Arm Star-Shaped Polystyrene-block-poly(methyl methacrylate) Copolymers with Different Second Block Initiations. <i>Macromolecules</i> , 2018 , 51, 2750-2755	5.5	8
67	Unveiling the Impact of Fe Incorporation on Intrinsic Performance of Reconstructed Water Oxidation Electrocatalyst. <i>ACS Energy Letters</i> , 4345-4354	20.1	8
66	Microkinetic modeling of DME synthesis from methanol over H-zeolite catalyst: Associative vs. dissociative pathways. <i>Catalysis Today</i> , 2021 , 375, 314-323	5.3	8
65	Multicompartment Model of an EthyleneVinyl Acetate Autoclave Reactor: A Combined Computational Fluid Dynamics and Polymerization Kinetics Model. <i>Industrial & Engineering Chemistry Research</i> , 2019 , 58, 16459-16471	3.9	7
64	Orientation and position of cylindrical-shaped gold nanoparticles at liquid-liquid interfaces. <i>Applied Physics Letters</i> , 2013 , 103, 091602	3.4	7
63	Donor-Acceptor Alternating Copolymer Compatibilizers for Thermally Stable, Mechanically Robust, and High-Performance Organic Solar Cells. <i>ACS Nano</i> , 2021 ,	16.7	7
62	Fast-Charging Lithium-Sulfur Batteries Enabled via Lean Binder Content. <i>Small</i> , 2020 , 16, e2004372	11	7
61	Inherently Safer Process Design of Natural Gas Liquefaction Processes through Multiobjective Optimization Part I. With Inherent Safety Indexes. <i>Industrial & Engineering Chemistry Research</i> , 2019 , 58, 4186-4198	3.9	6
60	1D hypo-crystals: A novel concept for the crystallization of stereo-irregular polymers. <i>Materials Today</i> , 2020 , 40, 26-37	21.8	6
59	Efficient Process Monitoring via the Integrated Use of Markov Random Fields Learning and the Graphical Lasso. <i>Industrial & Engineering Chemistry Research</i> , 2018 , 57, 13144-13155	3.9	6
58	Interfacial Structure Analysis for the Morphology Prediction of Adipic Acid Crystals from Aqueous Solution. <i>Crystal Growth and Design</i> , 2017 , 17, 1088-1095	3.5	5

57	Robust Design of Multicomponent Working Fluid for Organic Rankine Cycle. <i>Industrial & Engineering Chemistry Research</i> , 2019 , 58, 4154-4167	3.9	5
56	Structure of poly(styrene-b-ethylene-alt-propylene) diblock copolymer micelles in binary solvent mixtures. <i>Journal of Polymer Science, Part B: Polymer Physics</i> , 2016 , 54, 22-31	2.6	5
55	Integrated Process Design and Optimization of Nitrogen Recovery in Natural Gas Processing. <i>Industrial & Engineering Chemistry Research</i> , 2019 , 58, 1658-1674	3.9	5
54	Study on thermal conductivity and electrical resistivity of Al-Cu alloys obtained by Boltzmann transport equation and first-principles simulation: Semi-empirical approach. <i>Journal of Alloys and Compounds</i> , 2017 , 727, 1237-1242	5.7	5
53	Kinetic modeling for direct synthesis of dimethyl ether from syngas over a hybrid Cu/ZnO/Al ₂ O ₃ /ferrierite catalyst. <i>Catalysis Today</i> , 2020 ,	5.3	5
52	Influence of Grafting Density on Ultrasound-Induced Backbone and Arm Scission of Graft Copolymers. <i>Macromolecules</i> , 2021 , 54, 4219-4226	5.5	5
51	Driving Conformational Transitions in the Feature Space of Autoencoder Neural Network. <i>Journal of Physical Chemistry C</i> , 2018 , 122, 23224-23229	3.8	5
50	Adaptive approach for estimation of pipeline corrosion defects via Bayesian inference. <i>Reliability Engineering and System Safety</i> , 2021 , 216, 107998	6.3	5
49	Ultralightweight Strain-Responsive 3D Graphene Network. <i>Journal of Physical Chemistry C</i> , 2019 , 123, 9884-9893	3.8	4
48	Process fault diagnosis via the integrated use of graphical lasso and Markov random fields learning & inference. <i>Computers and Chemical Engineering</i> , 2019 , 125, 460-475	4	4
47	Quantitative risk assessment integrated with dynamic process simulation for reactor section in heavy oil desulfurization process. <i>Journal of Loss Prevention in the Process Industries</i> , 2020 , 66, 104158	3.5	4
46	Inhomogeneity of block copolymers at the interface of an immiscible polymer blend. <i>Physical Review E</i> , 2018 , 97, 042502	2.4	4
45	Isolated Mesoporous Microstructures Prepared by Stress Localization-Induced Crack Manipulation. <i>ACS Nano</i> , 2016 , 10, 9259-9266	16.7	4
44	Differences in DNA Probe-Mediated Aggregation Behavior of Gold Nanomaterials Based on Their Geometric Appearance. <i>Langmuir</i> , 2018 , 34, 14869-14874	4	4
43	Molecular Dynamics Simulation of Silicon Dioxide Etching by Hydrogen Fluoride Using the Reactive Force Field. <i>ACS Omega</i> , 2021 , 6, 16009-16015	3.9	4
42	Effect of lattice relaxation on thermal conductivity of fcc-based structures: an efficient procedure of molecular dynamics simulation. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017 , 25, 055011	2	3
41	Mechano-responsive lateral buckling of miniaturized beams standing on flexible substrates. <i>Soft Matter</i> , 2017 , 13, 8357-8361	3.6	3
40	Nanowalls: Lateral Buckling of High Aspect Ratio Janus Nanowalls (Adv. Funct. Mater. 17/2012). <i>Advanced Functional Materials</i> , 2012 , 22, 3530-3530	15.6	3

39	Response to "Comment on 'Molecular dynamics simulation study of nonconcatenated ring polymers in a melt. I. Statics'" [J. Chem. Phys. 139, 217101 (2013)]. <i>Journal of Chemical Physics</i> , 2013 , 139, 217102	3.9	3
38	Reply to Comment on Entangled Polymer Melts: Relation between Plateau Modulus and Stress Autocorrelation Function <i>Macromolecules</i> , 2010 , 43, 3984-3985	5.5	3
37	Ligand-Dependent Coalescence Behaviors of Gold Nanoparticles Studied by Multichamber Graphene Liquid Cell Transmission Electron Microscopy. <i>Nano Letters</i> , 2020 , 20, 8704-8710	11.5	3
36	Development of surrogate model using CFD and deep neural networks to optimize gas detector layout. <i>Korean Journal of Chemical Engineering</i> , 2019 , 36, 325-332	2.8	3
35	Thermoelectric transport properties of Pb doped SnSe alloys (PbxSn1-xSe): DFT-BTE simulations. <i>Journal of Solid State Chemistry</i> , 2019 , 270, 413-418	3.3	3
34	Modularly aromatic-knit graphitizable phenolic network as a tailored platform for electrochemical applications. <i>Energy and Environmental Science</i> , 2021 , 14, 3203-3215	35.4	3
33	Perovskite Thin Films: High-Resolution Spin-on-Patterning of Perovskite Thin Films for a Multiplexed Image Sensor Array (Adv. Mater. 40/2017). <i>Advanced Materials</i> , 2017 , 29,	24	2
32	Molecular Dynamics Study of Diffusion Behaviors of CO2 and N2 Confined to a Uni-directional Zeolite Structure. <i>Computer Aided Chemical Engineering</i> , 2014 , 33, 1717-1722	0.6	2
31	Supramolecular Polymerization of Micellar Nanoobjects Induced by Polymerization.. <i>ACS Macro Letters</i> , 2022 , 11, 149-155	6.6	2
30	Real-space imaging of nanoparticle transport and interaction dynamics by graphene liquid cell TEM. <i>Science Advances</i> , 2021 , 7, eabi5419	14.3	2
29	Effects of ionic liquids and silica nanoparticles on the ionic conductivities, mechanical properties, and rheological properties of sodium-containing solid polymer electrolytes. <i>Journal of Power Sources</i> , 2022 , 518, 230748	8.9	2
28	Active microrheology of a bulk metallic glass. <i>Science Advances</i> , 2020 , 6, eaba8766	14.3	2
27	Plane-Selective Coating of LiSnO on Li[NiCo]O for High Power Li ion Batteries. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 7096-7102	6.4	2
26	Recent progress on Al distribution over zeolite frameworks: Linking theories and experiments. <i>Korean Journal of Chemical Engineering</i> , 2021 , 38, 1117-1128	2.8	2
25	Development of augmented virtual reality-based operator training system for accident prevention in a refinery. <i>Korean Journal of Chemical Engineering</i> , 2021 , 38, 1566	2.8	2
24	The formation and control of highly crumpled metal surfaces on a photocurable viscous liquid. <i>Soft Matter</i> , 2016 , 12, 6507-11	3.6	2
23	A highly efficient and transparent luminescent solar concentrator based on a nanosized metal cluster luminophore anchored on polymers. <i>Journal of Materials Chemistry C</i> , 2022 , 10, 4402-4410	7.1	2
22	Searching for an Optimal Multi-metallic Alloy Catalyst by Active Learning Combined with Experiments.. <i>Advanced Materials</i> , 2022 , e2108900	24	2

21	Searching for an Optimal Multi-Metallic Alloy Catalyst by Active Learning Combined with Experiments (Adv. Mater. 19/2022). <i>Advanced Materials</i> , 2022 , 34, 2270147	24	2
20	Numerical studies on the thermal tuning of domain size in supramolecular diblock copolymer melts. <i>Macromolecular Research</i> , 2011 , 19, 483-486	1.9	1
19	Phase behavior of disk-coil block copolymers under cylindrical confinement: Curvature-induced structural frustrations. <i>Physical Review E</i> , 2019 , 100, 052502	2.4	1
18	Cellular Networks: A Plesiohedral Cellular Network of Graphene Bubbles for Ultralight, Strong, and Superelastic Materials (Adv. Mater. 45/2018). <i>Advanced Materials</i> , 2018 , 30, 1870343	24	1
17	Efficient Conduction in Thin Film Transistors Consisting of Colloidal Nanocrystals: Effect of Nanocrystal Geometry. <i>Advanced Theory and Simulations</i> , 2018 , 1, 1800120	3.5	1
16	Folding of Sequence-Controlled Graft Copolymers to Subdomain-Defined Single-Chain Nanoparticles. <i>Macromolecules</i> , 2021 , 54, 8829-8838	5.5	1
15	CFD modeling for the prediction of molecular weight distribution in the LDPE autoclave reactor: Effects of non-ideal mixing. <i>Chemical Engineering Journal</i> , 2022 , 427, 131829	14.7	1
14	Self-assembly of rod-coil diblock copolymer-nanoparticle composites in thin films: dissipative particle dynamics. <i>Soft Matter</i> , 2021 , 17, 2384-2391	3.6	1
13	Molecular dynamics study of the role of friction on the thermal rupture of linear alternate copolymers. <i>Macromolecular Research</i> , 2011 , 19, 1192-1194	1.9	0
12	Function transformation of polymeric films through morphing of surface shapes. <i>Chemical Engineering Journal</i> , 2022 , 434, 134665	14.7	0
11	Pyrrrolidinium-PEG Ionic Copolyester: Li-Ion Accelerator in Polymer Network Solid-State Electrolytes. <i>Advanced Energy Materials</i> , 2021 , 11, 2102660	21.8	0
10	Anion-Rectifying Polymeric Single Lithium-Ion Conductors. <i>Advanced Functional Materials</i> , 2107753	15.6	0
9	Direct utilization of CO ₂ via methanol synthesis for natural gas fields with high CO ₂ concentration. <i>Journal of Natural Gas Science and Engineering</i> , 2021 , 96, 104308	4.6	0
8	Enhanced sampling of cylindrical microphase separation via a shell-averaged bond-orientational order parameter. <i>Soft Matter</i> , 2020 , 16, 659-667	3.6	0
7	Ionic-Group Dependence of Polyelectrolyte Coacervate Phase Behavior. <i>Macromolecules</i> , 2021 , 54, 7572-7581	5.5	0
6	First-principles study of electronic transport coefficients of point-defective metallic species: aluminum and its bimetallic alloys. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2019 , 27, 035009	2	
5	Thermal rupture of linear alternate copolymers: a molecular dynamics study. <i>Journal of Chemical Physics</i> , 2011 , 135, 084903	3.9	
4	Dynamical time scales of friction dynamics in active microrheology of a model glass. <i>Soft Matter</i> , 2021 , 17, 5162-5169	3.6	

- 3 Efficient Process Monitoring and Fault Isolation with the Integrated use of Markov Random Fields Learning and the Graphical Lasso. *Computer Aided Chemical Engineering*, **2018**, 44, 589-594 0.6
- 2 Quantitative and Probabilistic approach for Underground Pipeline management Optimization. *Computer Aided Chemical Engineering*, **2018**, 44, 1549-1554 0.6
- 1 Molecular dynamics study on lithium-ion transport in PEO branched nanopores with PYR 14 TFSI ionic liquid20210013