

# Xiao-Dong Niu

## List of Publications by Year in descending order

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98  
papers

1,973  
citations

218677

26  
h-index

315739

38  
g-index

102  
all docs

102  
docs citations

102  
times ranked

1622  
citing authors

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 1  | A momentum exchange-based immersed boundary-lattice Boltzmann method for simulating a flexible filament in an incompressible flow. <i>Computers and Mathematics With Applications</i> , 2014, 67, 1039-1056.   | 2.7 | 86        |
| 2  | Experimental and numerical modelling of mechanical properties of 3D printed honeycomb structures. <i>Measurement: Journal of the International Measurement Confederation</i> , 2018, 116, 495-506.   | 5.0 | 79        |
| 3  | Numerical investigation on the role of discrete element method in combined LBM-IBM-DEM modeling. <i>Computers and Fluids</i> , 2014, 94, 37-48.  | 2.5 | 76        |
| 4  | A Review of State of Health Estimation of Energy Storage Systems: Challenges and Possible Solutions for Futuristic Applications of Li-Ion Battery Packs in Electric Vehicles. <i>Journal of Electrochemical Energy Conversion and Storage</i> , 2019, 16, .      | 2.1 | 75        |
| 5  | An improved momentum exchanged-based immersed boundary-lattice Boltzmann method by using an iterative technique. <i>Computers and Mathematics With Applications</i> , 2014, 68, 140-155.   | 2.7 | 64        |
| 6  | Non-contact manipulation of nonmagnetic materials by using a uniform magnetic field: Experiment and simulation. <i>Journal of Magnetism and Magnetic Materials</i> , 2020, 497, 165957.  | 2.3 | 62        |
| 7  | Study of multiple steady solutions for the 2D natural convection in a concentric horizontal annulus with a constant heat flux wall using immersed boundary-lattice Boltzmann method. <i>International Journal of Heat and Mass Transfer</i> , 2015, 81, 591-601. | 4.8 | 60        |
| 8  | Simplified multiphase lattice Boltzmann method for simulating multiphase flows with large density ratios and complex interfaces. <i>Physical Review E</i> , 2018, 98, .  | 2.1 | 54        |
| 9  | Microstructures and mechanical properties of a hot-extruded Mg <sup>8</sup> Gd <sup>3</sup> Yb <sup>1.2</sup> Zn <sup>0.5</sup> Zr (wt%) alloy. <i>Journal of Alloys and Compounds</i> , 2019, 776, 666-678.   | 5.5 | 48        |
| 10 | Experimental and numerical investigation of natural convection of magnetic fluids in a cubic cavity. <i>Journal of Magnetism and Magnetic Materials</i> , 2009, 321, 3665-3670.  | 2.3 | 47        |
| 11 | Immersed boundary-lattice Boltzmann simulation of natural convection in a square enclosure with a cylinder covered by porous layer. <i>International Journal of Heat and Mass Transfer</i> , 2016, 92, 1166-1170.  | 4.8 | 44        |
| 12 | Effect of self-assembly on fluorescence in magnetic multiphase flows and its application on the novel detection for COVID-19. <i>Physics of Fluids</i> , 2021, 33, 042004.   | 4.0 | 44        |
| 13 | Full Eulerian lattice Boltzmann model for conjugate heat transfer. <i>Physical Review E</i> , 2015, 92, 063305.  | 2.1 | 42        |
| 14 | Review of materials used in laser-aided additive manufacturing processes to produce metallic products. <i>Frontiers of Mechanical Engineering</i> , 2019, 14, 282-298.   | 4.3 | 42        |
| 15 | Modified momentum exchange method for fluid-particle interactions in the lattice Boltzmann method. <i>Physical Review E</i> , 2015, 91, 033301.  | 2.1 | 41        |
| 16 | Lattice Boltzmann simulation for three-dimensional natural convection with solid-liquid phase change. <i>International Journal of Heat and Mass Transfer</i> , 2017, 113, 1168-1178.   | 4.8 | 40        |
| 17 | Phase-field-based lattice Boltzmann model for multiphase ferrofluid flows. <i>Physical Review E</i> , 2018, 98, .  | 2.1 | 38        |
| 18 | Collaborative Optimization of Density and Surface Roughness of 316L Stainless Steel in Selective Laser Melting. <i>Materials</i> , 2020, 13, 1601.   | 2.9 | 38        |

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|----|--|-----|-----------|
| 19 | Simulation of steady fluid–solid conjugate heat transfer problems via immersed boundary-lattice Boltzmann method. <i>Computers and Mathematics With Applications</i> , 2015, 70, 2227-2237.  | 2.7 | 35        |
| 20 | A mass-conserving multiphase lattice Boltzmann model for simulation of multiphase flows. <i>Physics of Fluids</i> , 2018, 30, .  | 4.0 | 35        |
| 21 | Numerical investigation of magnetic multiphase flows by the fractional-step-based multiphase lattice Boltzmann method. <i>Physics of Fluids</i> , 2020, 32, .  | 4.0 | 34        |
| 22 | An Efficient Immersed Boundary-Lattice Boltzmann Method for the Simulation of Thermal Flow Problems. <i>Communications in Computational Physics</i> , 2016, 20, 1210-1257.   | 1.7 | 31        |
| 23 | An efficient smoothed profile-lattice Boltzmann method for the simulation of forced and natural convection flows in complex geometries. <i>International Communications in Heat and Mass Transfer</i> , 2015, 68, 188-199.   | 5.6 | 30        |
| 24 | A multiple-relaxation-time lattice Boltzmann model for the flow and heat transfer in a hydrodynamically and thermally anisotropic porous medium. <i>International Journal of Heat and Mass Transfer</i> , 2017, 104, 544-558.  | 4.8 | 29        |
| 25 | A coupled electrochemical-mechanical performance evaluation for safety design of lithium-ion batteries in electric vehicles: An integrated cell and system level approach. <i>Journal of Cleaner Production</i> , 2019, 222, 633-645.  | 9.3 | 28        |
| 26 | Lattice Boltzmann model for simulating temperature-sensitive ferrofluids. <i>Physical Review E</i> , 2009, 79, 046713.   | 2.1 | 26        |
| 27 | Self-assembly of silica microparticles in magnetic multiphase flows: Experiment and simulation. <i>Physics of Fluids</i> , 2018, 30, .   | 4.0 | 26        |
| 28 | Lattice Boltzmann simulation for temperature-sensitive magnetic fluids in a porous square cavity. <i>Journal of Magnetism and Magnetic Materials</i> , 2012, 324, 44-51.   | 2.3 | 25        |
| 29 | Natural Convection in a Concentric Annulus: A Lattice Boltzmann Method Study with Boundary Condition-Enforced Immersed Boundary Method. <i>Advances in Applied Mathematics and Mechanics</i> , 2013, 5, 321-336.   | 1.2 | 25        |
| 30 | A diffuse interface lattice Boltzmann model for thermocapillary flows with large density ratio and thermophysical parameters contrasts. <i>International Journal of Heat and Mass Transfer</i> , 2019, 138, 809-824.   | 4.8 | 25        |
| 31 | Solvent regulation synthesis of single-component white emission carbon quantum dots for white light-emitting diodes. <i>Nanotechnology Reviews</i> , 2021, 10, 465-477.  | 5.8 | 23        |
| 32 | Development of an immunochromatographic assay for detection of tylosin and tilmicosin in muscle, liver, fish and eggs. <i>Food and Agricultural Immunology</i> , 2013, 24, 467-480.  | 1.4 | 22        |
| 33 | Fully resolved simulation of particulate flows with heat transfer by smoothed profile-lattice Boltzmann method. <i>International Journal of Heat and Mass Transfer</i> , 2018, 126, 1164-1167.   | 4.8 | 21        |
| 34 | Hybrid Allen-Cahn-based lattice Boltzmann model for incompressible two-phase flows: The reduction of numerical dispersion. <i>Physical Review E</i> , 2019, 99, 023302.  | 2.1 | 21        |
| 35 | Closed-form compliance equations for elliptic-revolute notch type multiple-axis flexure hinges. <i>Mechanism and Machine Theory</i> , 2021, 156, 104154.   | 4.5 | 21        |
| 36 | Processing optimization, microstructure, mechanical properties and nanoprecipitation behavior of 18Ni300 maraging steel in selective laser melting. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022, 830, 142334. | 5.6 | 20        |

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|----|---|-----|-----------|
| 37 | Natural convection in a nanofluid-filled eccentric annulus with constant heat flux wall: A lattice Boltzmann study with immersed boundary method. <i>International Communications in Heat and Mass Transfer</i> , 2017, 86, 262-273.  | 5.6 | 19        |
| 38 | Multi-objective optimization of lithium-ion battery pack casing for electric vehicles: Key role of materials design and their influence. <i>International Journal of Energy Research</i> , 2020, 44, 9414-9437.   | 4.5 | 19        |
| 39 | An interfacial lattice Boltzmann flux solver for simulation of multiphase flows at large density ratio. <i>International Journal of Multiphase Flow</i> , 2019, 116, 100-112.   | 3.4 | 18        |
| 40 | Analytical modelling and experiments for hybrid multi-axis flexure hinges. <i>Precision Engineering</i> , 2022, 76, 294-304.  | 3.4 | 18        |
| 41 | A Numerical Study of Jet Propulsion of an Oblate Jellyfish Using a Momentum Exchange-Based Immersed Boundary-Lattice Boltzmann Method. <i>Advances in Applied Mathematics and Mechanics</i> , 2014, 6, 307-326.   | 1.2 | 17        |
| 42 | Performance analyses of a particularly designed turbine for a supercritical CO <sub>2</sub> -based solar Rankine cycle system. <i>International Journal of Energy Research</i> , 2015, 39, 1819-1827.   | 4.5 | 17        |
| 43 | Investigation on a low-melting-point gallium alloy MHD power generator. <i>International Journal of Energy Research</i> , 2011, 35, 209-220.  | 4.5 | 16        |
| 44 | Experimental and numerical procedure for studying strength and heat generation responses of ultrasonic welding of polymer blends. <i>Measurement: Journal of the International Measurement Confederation</i> , 2019, 132, 1-10.   | 5.0 | 16        |
| 45 | Unified simplified multiphase lattice Boltzmann method for ferrofluid flows and its application. <i>Physics of Fluids</i> , 2020, 32, .   | 4.0 | 16        |
| 46 | A magnetic field coupling lattice Boltzmann model and its application on the merging process of multiple-ferrofluid-droplet system. <i>Applied Mathematics and Computation</i> , 2021, 393, 125769.   | 2.2 | 16        |
| 47 | Finite-volume method with lattice Boltzmann flux scheme for incompressible porous media flow at the representative-elementary-volume scale. <i>Physical Review E</i> , 2016, 93, 023308.  | 2.1 | 14        |
| 48 | Fabrication, Experiments, and Analysis of an LBM Additive-Manufactured Flexure Parallel Mechanism. <i>Micromachines</i> , 2018, 9, 572.   | 2.9 | 14        |
| 49 | Dynamic study of ferrodroplet and bubbles merging in ferrofluid by a simplified multiphase lattice Boltzmann method. <i>Journal of Magnetism and Magnetic Materials</i> , 2020, 495, 165869.  | 2.3 | 14        |
| 50 | Electrochemical Performance Enhancement of Sodium-Ion Batteries Fabricated With NaNi <sub>1/3</sub> Mn <sub>1/3</sub> Co <sub>1/3</sub> O <sub>2</sub> Cathodes Using Support Vector Regression-Simplex Algorithm Approach. <i>Journal of Electrochemical Energy Conversion and Storage</i> , 2020, 17, . | 2.1 | 14        |
| 51 | Unsteady MHD Non-Darcian Flow Over a Vertical Stretching Plate Embedded in a Porous Medium with Thermal Non-Equilibrium Model. <i>Advances in Applied Mathematics and Mechanics</i> , 2016, 8, 52-66.   | 1.2 | 13        |
| 52 | A numerical investigation of dynamics of bubbly flow in a ferrofluid by a self-correcting procedure-based lattice Boltzmann flux solver. <i>Physics of Fluids</i> , 2019, 31, .   | 4.0 | 13        |
| 53 | On the total mass conservation and the volume preservation in the diffuse interface method. <i>Computers and Fluids</i> , 2019, 193, 104291.  | 2.5 | 13        |
| 54 | Experimental coupled predictive modelling based recycling of waste printed circuit boards for maximum extraction of copper. <i>Journal of Cleaner Production</i> , 2019, 218, 763-771.  | 9.3 | 13        |

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|----|--|-----|-----------|
| 55 | A novel thermally driven pump and its test in a supercritical CO <sub>2</sub> loop system. <i>International Journal of Energy Research</i> , 2013, 37, 1331-1338.  | 4.5 | 12        |
| 56 | Design of explicit models for predicting the efficiency of heavy oil-sand detachment process by floatation technology. <i>Measurement: Journal of the International Measurement Confederation</i> , 2019, 137, 122-129.                                    | 5.0 | 12        |
| 57 | Motion, deformation, and coalescence of ferrofluid droplets subjected to a uniform magnetic field. <i>International Journal for Numerical Methods in Fluids</i> , 2020, 92, 1584-1603.   | 1.6 | 12        |
| 58 | Lattice Boltzmann flux scheme for the convection-diffusion equation and its applications. <i>Computers and Mathematics With Applications</i> , 2016, 72, 48-63.  | 2.7 | 11        |
| 59 | Characteristics of a MHD power generator using a low-melting-point Gallium alloy. <i>Electrical Engineering</i> , 2014, 96, 37-43.   | 2.0 | 10        |
| 60 | Lattice Boltzmann model for the axisymmetric electro-thermo-convection. <i>Computers and Mathematics With Applications</i> , 2019, 78, 55-65.  | 2.7 | 10        |
| 61 | Study of the hinge thickness deviation for a 316L parallelogram flexure mechanism fabricated via selective laser melting. <i>Journal of Intelligent Manufacturing</i> , 2021, 32, 1411-1420.   | 7.3 | 10        |
| 62 | Natural Convection of Temperature-Sensitive Magnetic Fluids in Porous Media. <i>Advances in Applied Mathematics and Mechanics</i> , 2011, 3, 121-130.  | 1.2 | 9         |
| 63 | Precision Manufacturing of NaNi <sub>1/3</sub> Mn <sub>1/3</sub> Co <sub>1/3</sub> O <sub>2</sub> Cathodes: Study of Structure Evolution and Performance at Varied Calcination Temperatures. <i>Journal of Electronic Materials</i> , 2019, 48, 5301-5309. | 2.2 | 9         |
| 64 | A combined experimental-numerical framework for residual energy determination in spent lithium-ion battery packs. <i>International Journal of Energy Research</i> , 2019, 43, 4390-4402.   | 4.5 | 9         |
| 65 | An integrated framework for minimization of inter lithium-ion cell temperature differences and the total volume of the cell of battery pack for electric vehicles. <i>Energy Storage</i> , 2019, 1, e41.   | 4.3 | 9         |
| 66 | An immersed boundary-lattice Boltzmann method for electro-thermo-convection in complex geometries. <i>International Journal of Thermal Sciences</i> , 2019, 140, 280-297.  | 4.9 | 9         |
| 67 | A high-order phase-field based lattice Boltzmann model for simulating complex multiphase flows with large density ratios. <i>International Journal for Numerical Methods in Fluids</i> , 2021, 93, 293-313.  | 1.6 | 9         |
| 68 | Modular metamaterials composed of foldable obelisk-like units with reprogrammable mechanical behaviors based on multistability. <i>Scientific Reports</i> , 2019, 9, 18812.  | 3.3 | 8         |
| 69 | Flow behavior and heat transfer characteristics in Rayleigh-Bénard laminar convection with fluid-particle interaction. <i>International Journal of Heat and Mass Transfer</i> , 2020, 146, 118840.   | 4.8 | 8         |
| 70 | Maximum Spreading of Impacting Ferrofluid Droplets under the Effect of Nonuniform Magnetic Field. <i>Langmuir</i> , 2022, 38, 2601-2607.   | 3.5 | 8         |
| 71 | Thermal performance of thin film heat gauges of gold, silver and nano-composite. <i>Applied Thermal Engineering</i> , 2019, 147, 545-550.  | 6.0 | 7         |
| 72 | Stiffness characteristics of a laser beam melted (LBM) additive-manufactured flexure mechanism. <i>Procedia CIRP</i> , 2018, 78, 144-148.  | 1.9 | 6         |

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|----|--|-----|-----------|
| 73 | A numerical study for WENO scheme-based on different lattice Boltzmann flux solver for compressible flows. <i>Acta Mechanica Sinica/Lixue Xuebao</i> , 2018, 34, 995-1014.   | 3.4 | 6         |
| 74 | Magnetic field based actuation and amalgamation of ferrofluid droplets on hydrophobic surface: An experimental and numerical study. <i>Physics of Fluids</i> , 2020, 32, .   | 4.0 | 6         |
| 75 | WENO Scheme-Based Lattice Boltzmann Flux Solver for Simulation of Compressible Flows. <i>Communications in Computational Physics</i> , 2018, 23, .   | 1.7 | 5         |
| 76 | Magnetic field-induced self-assembly of multiple nonmagnetic bubbles inside ferrofluid. <i>Physics of Fluids</i> , 2021, 33, .   | 4.0 | 5         |
| 77 | Solid-Liquid Two-Phase Flow Measurement Using an Electromagnetically Induced Signal Measurement Method. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2011, 133, .  | 1.5 | 4         |
| 78 | Natural Convection Cooling of an Array of Flush Mounted Discrete Heaters Inside a 3D Cavity. <i>Advances in Applied Mathematics and Mechanics</i> , 2017, 9, 698-721.  | 1.2 | 4         |
| 79 | Numerical investigation of magnetic-field induced self-assembly of nonmagnetic particles in magnetic fluids. <i>Journal of Fluids and Structures</i> , 2020, 97, 103008.   | 3.4 | 4         |
| 80 | Supervised Machine Learning in Friction Stir Welding (FSW). <i>Engineering Applications of Computational Methods</i> , 2020, , 119-185.  | 0.2 | 4         |
| 81 | Study on a supercritical CO <sub>2</sub> solar water heater system induced by the natural circulation. <i>Advances in Mechanical Engineering</i> , 2018, 10, 168781401877237.  | 1.6 | 3         |
| 82 | An Application of Genetic programming for Lithium-ion Battery Pack Enclosure Design: Modelling of Mass, Minimum Natural Frequency and Maximum Deformation Case. <i>IOP Conference Series: Earth and Environmental Science</i> , 2019, 268, 012065. | 0.3 | 3         |
| 83 | Structural material with designed thermal twist for a simple actuation. <i>Nanotechnology Reviews</i> , 2022, 11, 414-422.   | 5.8 | 3         |
| 84 | An Improved Momentum-exchanged Immersed Boundary-based Lattice Boltzmann Method for Incompressible Viscous Thermal Flows. <i>Procedia Engineering</i> , 2015, 126, 691-695.  | 1.2 | 2         |
| 85 | Numerical Investigation of "Frog-Leap" Mechanisms of Three Particles Aligned Moving in an Inclined Channel Flow. <i>Advances in Applied Mathematics and Mechanics</i> , 2015, 7, 207-228.  | 1.2 | 2         |
| 86 | Computation of safety design indexes of industry vehicle operators based on the reach angle, the distance from elbow to ground and the popliteal height. <i>International Journal of Industrial Ergonomics</i> , 2019, 71, 155-164.                | 2.6 | 2         |
| 87 | Cross-like lattices with tailorable mechanical properties. <i>Materials Letters</i> , 2020, 281, 128617.   | 2.6 | 2         |
| 88 | Heat transfer of temperature-sensitive magnetic fluids around single heating pipe. <i>International Journal of Applied Electromagnetics and Mechanics</i> , 2020, 64, 1039-1046.   | 0.6 | 2         |
| 89 | Bessel Sequences and Its F-Scalability. <i>Advances in Applied Mathematics and Mechanics</i> , 2015, 7, 441-453.   | 1.2 | 1         |
| 90 | NUMERICAL STUDY OF GAS-PHASE FLOW IN A CYCLONE SEPARATOR. <i>International Journal of Modern Physics Conference Series</i> , 2016, 42, 1660171.  | 0.7 | 1         |

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|----|--|-----|-----------|
| 91 | AN IMPROVED MOMENTUM-EXCHANGED IMMERSERD BOUNDARY-BASED LATTICE BOLTZMANN METHOD FOR INCOMPRESSIBLE VISCOUS THERMAL FLOWS. International Journal of Modern Physics Conference Series, 2016, 42, 1660161.         | 0.7 | 1         |
| 92 | Study of Effective Hinge Thickness of Additive-manufactured Flexure Mechanisms. , 2019, , .  |     | 1         |
| 93 | Supervised Machine Learning in Cold Metal Transfer (CMT). Engineering Applications of Computational Methods, 2020, , 57-118.   | 0.2 | 1         |
| 94 | NATURAL CONVECTION OF TEMPERATURE-SENSITIVE MAGNETIC FLUIDS IN POROUS MEDIA. International Journal of Modern Physics Conference Series, 2012, 19, 18-26.   | 0.7 | 0         |
| 95 | Flow of viscoelastic fluid in curved tube (Visualization of flow in curved tube and analytical) Tj ETQq1 1 0.784314 rgBT /Overlock 10 T 5 14-00614-14-00614.   | 0.2 | 0         |
| 96 | Deployableâ€Structureâ€Based Artificial Muscles Generating Coded Forces. Advanced Materials Technologies, 2021, 6, 2100493.  | 5.8 | 0         |
| 97 | Deployableâ€Structureâ€Based Artificial Muscles Generating Coded Forces (Adv. Mater. Technol. 9/2021). Advanced Materials Technologies, 2021, 6, 2170055.  | 5.8 | 0         |
| 98 | Experimental and Numerical Procedure for Studying Effect of Ultrasonic Spot Weld Parameters on Metal Joints for Electronic Components. Lecture Notes on Multidisciplinary Industrial Engineering, 2020, , 11-22. | 0.6 | 0         |