

# Cao Quanliang

## List of Publications by Year in descending order

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Version: 2024-02-01

109  
papers

1,822  
citations

257450

24  
h-index

315739

38  
g-index

109  
all docs

109  
docs citations

109  
times ranked

1159  
citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | Configurations and control of magnetic fields for manipulating magnetic particles in microfluidic applications: magnet systems and manipulation mechanisms. <i>Lab on A Chip</i> , 2014, 14, 2762.   | 6.0  | 109       |
| 2  | Recent advances in manipulation of micro- and nano-objects with magnetic fields at small scales. <i>Materials Horizons</i> , 2020, 7, 638-666.   | 12.2 | 101       |
| 3  | Analysis and reduction of coil temperature rise in electromagnetic forming. <i>Journal of Materials Processing Technology</i> , 2015, 225, 185-194.  | 6.3  | 86        |
| 4  | Reconfigurable magnetic soft robots with multimodal locomotion. <i>Nano Energy</i> , 2021, 87, 106169.   | 16.0 | 70        |
| 5  | Radial Lorentz force augmented deep drawing for large drawing ratio using a novel dual-coil electromagnetic forming system. <i>Journal of Materials Processing Technology</i> , 2015, 222, 13-20.  | 6.3  | 63        |
| 6  | Investigation of the Lorentz-force-driven sheet metal stamping process for cylindrical cup forming. <i>Journal of Materials Processing Technology</i> , 2019, 271, 532-541.  | 6.3  | 61        |
| 7  | Enhancement of the efficiency of magnetic targeting for drug delivery: Development and evaluation of magnet system. <i>Journal of Magnetism and Magnetic Materials</i> , 2011, 323, 1919-1924.   | 2.3  | 56        |
| 8  | Numerical analysis of magnetic nanoparticle transport in microfluidic systems under the influence of permanent magnets. <i>Journal Physics D: Applied Physics</i> , 2012, 45, 465001.  | 2.8  | 53        |
| 9  | Dynamic analysis of electromagnetic sheet metal forming process using finite element method. <i>International Journal of Advanced Manufacturing Technology</i> , 2014, 74, 361-368.  | 3.0  | 52        |
| 10 | Analysis of the effect of an electrically conductive die on electromagnetic sheet metal forming process using the finite element-circuit coupled method. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 101, 549-563. | 3.0  | 52        |
| 11 | Investigation on plastic deformation behavior of sheet workpiece during radial Lorentz force augmented deep drawing process. <i>Journal of Materials Processing Technology</i> , 2017, 245, 193-206.   | 6.3  | 44        |
| 12 | Electromagnetic attractive forming of sheet metals by means of a dual-frequency discharge current: design and implementation. <i>International Journal of Advanced Manufacturing Technology</i> , 2017, 90, 309-316.                             | 3.0  | 41        |
| 13 | Electromagnetic Force Distribution and Deformation Homogeneity of Electromagnetic Tube Expansion With a New Concave Coil Structure. <i>IEEE Access</i> , 2019, 7, 117107-117114.   | 4.2  | 39        |
| 14 | Three-dimensional analysis and enhancement of continuous magnetic separation of particles in microfluidics. <i>Microfluidics and Nanofluidics</i> , 2015, 18, 1209-1220.   | 2.2  | 38        |
| 15 | Investigation of the electromagnetic attractive forming utilizing a dual-coil system for tube bulging. <i>Journal of Manufacturing Processes</i> , 2020, 49, 102-115.  | 5.9  | 37        |
| 16 | An active microfluidic mixer utilizing a hybrid gradient magnetic field. <i>International Journal of Applied Electromagnetics and Mechanics</i> , 2015, 47, 583-592.   | 0.6  | 36        |
| 17 | Analysis of Electromagnetic Force and Deformation Behavior in Electromagnetic Tube Expansion With Concave Coil Based on Finite Element Method. <i>IEEE Transactions on Applied Superconductivity</i> , 2018, 28, 1-5.                            | 1.7  | 36        |
| 18 | Analysis and Optimal Design of Magnetic Navigation System Using Helmholtz and Maxwell Coils. <i>IEEE Transactions on Applied Superconductivity</i> , 2012, 22, 4401504-4401504.  | 1.7  | 35        |

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|----|---|------|-----------|
| 19 | Electromagnetic pulse spot welding of aluminum to stainless steel sheets with a field shaper. <i>International Journal of Advanced Manufacturing Technology</i> , 2018, 98, 1903-1911.                          | 3.0  | 31        |
| 20 | Tunable, Sheathless Focusing of Diamagnetic Particles in Ferrofluid Microflows with a Single Set of Overhead Permanent Magnets. <i>Analytical Chemistry</i> , 2018, 90, 8600-8606.                              | 6.5  | 30        |
| 21 | Dynamic motion analysis of magnetic particles in microfluidic systems under an external gradient magnetic field. <i>Microfluidics and Nanofluidics</i> , 2017, 21, 1.   | 2.2  | 28        |
| 22 | Rotational motion and lateral migration of an elliptical magnetic particle in a microchannel under a uniform magnetic field. <i>Microfluidics and Nanofluidics</i> , 2018, 22, 1.                               | 2.2  | 28        |
| 23 | Bulging behavior of metallic tubes during the electromagnetic forming process in the presence of a background magnetic field. <i>Journal of Materials Processing Technology</i> , 2020, 276, 116411.            | 6.3  | 26        |
| 24 | An inner-field uniform pressure actuator with high performance and its application to titanium bipolar plate forming. <i>International Journal of Machine Tools and Manufacture</i> , 2020, 155, 103570.        | 13.4 | 25        |
| 25 | Electromagnetic cold-expansion process for circular holes in aluminum alloy sheets. <i>Journal of Materials Processing Technology</i> , 2017, 248, 49-55.   | 6.3  | 24        |
| 26 | Coil Temperature Rise and Workpiece Forming Efficiency of Electromagnetic Forming Based on Half-Wave Current Method. <i>IEEE Access</i> , 2020, 8, 9371-9379.   | 4.2  | 24        |
| 27 | Improvement in uniformity of alloy steel by pulsed magnetic field treatment. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 799, 140143. | 5.6  | 23        |
| 28 | Electromagnetic forming of aluminum alloy sheet metal utilizing a low-frequency discharge: A new method for attractive forming. <i>Journal of Materials Processing Technology</i> , 2021, 291, 117001.          | 6.3  | 23        |
| 29 | Design and Evaluation of Three-Dimensional Electromagnetic Guide System for Magnetic Drug Delivery. <i>IEEE Transactions on Applied Superconductivity</i> , 2012, 22, 4401404-4401404.                          | 1.7  | 21        |
| 30 | Superparamagnetic Iron Oxide Nanoparticle-Mediated Forces Enhance the Migration of Schwann Cells Across the Astrocyte-Schwann Cell Boundary In vitro. <i>Frontiers in Cellular Neuroscience</i> , 2017, 11, 83. | 3.7  | 21        |
| 31 | Fabrication of titanium bipolar plates for proton exchange membrane fuel cells by uniform pressure electromagnetic forming. <i>International Journal of Hydrogen Energy</i> , 2021, 46, 38768-38781.            | 7.1  | 21        |
| 32 | Application of Triple-Coil System for Improving Deformation Depth of Tube in Electromagnetic Forming. <i>IEEE Transactions on Applied Superconductivity</i> , 2016, 26, 1-4.                                    | 1.7  | 20        |
| 33 | Improvement on formability and forming accuracy in electromagnetic forming of deep-cavity sheet metal part using a dual-coil system. <i>Journal of Manufacturing Processes</i> , 2020, 57, 209-221.             | 5.9  | 20        |
| 34 | 3-D nonlinear transient analysis and design of eddy current brake for high-speed trains. <i>International Journal of Applied Electromagnetics and Mechanics</i> , 2012, 40, 205-214.                            | 0.6  | 19        |
| 35 | Effects of Current Frequency on Electromagnetic Sheet Metal Forming Process. <i>IEEE Transactions on Applied Superconductivity</i> , 2014, 24, 1-4.   | 1.7  | 18        |
| 36 | The pulsed high magnetic field facility and scientific research at Wuhan National High Magnetic Field Center. <i>Matter and Radiation at Extremes</i> , 2017, 2, 278-286.                                       | 3.9  | 18        |

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|----|--|-----|-----------|
| 37 | A comprehensive electromagnetic forming approach for large sheet metal forming. <i>Procedia Engineering</i> , 2017, 207, 54-59.  | 1.2 | 18        |
| 38 | Electromagnetic Force Distribution and Wall Thickness Reduction of Three-Coil Electromagnetic Tube Bulging With Axial Compression. <i>IEEE Access</i> , 2020, 8, 21665-21675.                                | 4.2 | 17        |
| 39 | Adjustable current waveform via altering the damping coefficient: A new way to reduce Joule heating in electromagnetic forming coils. <i>Journal of Materials Processing Technology</i> , 2021, 293, 117086. | 6.3 | 17        |
| 40 | Disaggregation and separation dynamics of magnetic particles in a microfluidic flow under an alternating gradient magnetic field. <i>Journal Physics D: Applied Physics</i> , 2018, 51, 195002.              | 2.8 | 16        |
| 41 | An investigation of Zr-based bulk metallic glasses as bipolar plates for proton exchange membrane fuel cells. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 3132-3144.                         | 7.1 | 14        |
| 42 | Smart water-based ferrofluid with stable state transition property: Preparation and its application in anionic dye removal. <i>Journal of Cleaner Production</i> , 2021, 287, 125003.                        | 9.3 | 14        |
| 43 | The importance of coil conductivity and eddy current effects in the analysis of electromagnetic forming process. <i>High Voltage</i> , 2022, 7, 390-404.   | 4.7 | 13        |
| 44 | Design and analysis of a pulsed electromagnetic blankholder system for electromagnetic forming. <i>Procedia Engineering</i> , 2017, 207, 347-352.  | 1.2 | 12        |
| 45 | Axially Movable Electromagnetic Forming System for Large-Scale Metallic Sheet. <i>IEEE Transactions on Applied Superconductivity</i> , 2016, 26, 1-4.  | 1.7 | 11        |
| 46 | Design, Implementation, and Testing of a Pulsed Electromagnetic Blank Holder System. <i>IEEE Transactions on Applied Superconductivity</i> , 2016, 26, 1-5.  | 1.7 | 11        |
| 47 | The effect of coil polarity on electromagnetic forming using a multi-coil system. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 103, 1555-1566.                                  | 3.0 | 11        |
| 48 | The Electromagnetic Flanging of a Large-Scale Sheet Workpiece. <i>IEEE Transactions on Applied Superconductivity</i> , 2014, 24, 1-5.  | 1.7 | 10        |
| 49 | Performance analysis of a microfluidic mixer based on high gradient magnetic separation principles. <i>Journal Physics D: Applied Physics</i> , 2017, 50, 365004.  | 2.8 | 10        |
| 50 | Effects of air on metallic sheet deformation by electromagnetic forming. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 103, 311-324.   | 3.0 | 10        |
| 51 | Insight into analytical modeling of electromagnetic forming. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 101, 2585-2607.   | 3.0 | 10        |
| 52 | Two-Dimensional Manipulation of Magnetic Nanoparticles in Microfluidic Systems. <i>Applied Physics Express</i> , 2013, 6, 025201.  | 2.4 | 9         |
| 53 | Analytical optimization on geometry of uniform pressure coil in electromagnetic forming and welding. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 104, 3129-3137.               | 3.0 | 9         |
| 54 | Controllable pulsed electromagnetic blank holder method for electromagnetic sheet metal forming. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 103, 4507-4517.                   | 3.0 | 9         |

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|----|---|-----|-----------|
| 55 | Improving the uniformity and controllability of tube deformation via a three-coil forming system. International Journal of Advanced Manufacturing Technology, 2021, 114, 1533-1544.   | 3.0 | 9         |
| 56 | Expanding the homogeneous regime of deformation in bulk metallic glass by electromigration-induced rejuvenation. Communications Materials, 2020, 1, .   | 6.9 | 8         |
| 57 | Flaring Forming of Small Tube Based on Electromagnetic Attraction. IEEE Access, 2020, 8, 104753-104761.   | 4.2 | 8         |
| 58 | Targeting Behavior of Magnetic Particles Under Gradient Magnetic Fields Produced by Two Types of Permanent Magnets. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.  | 1.7 | 7         |
| 59 | Investigation on deformation control of sheet metal in radial Lorentz force augmented deep drawing. International Journal of Advanced Manufacturing Technology, 2019, 105, 2369-2381.   | 3.0 | 7         |
| 60 | A comparative study on the effects of boundary constraints on electromagnetic sheet forming. International Journal of Advanced Manufacturing Technology, 2019, 101, 2785-2793.  | 3.0 | 7         |
| 61 | Density-Based High-Sensitivity Measurement and Separation via Axial Magnetic Levitation. IEEE Sensors Journal, 2020, 20, 14065-14071.   | 4.7 | 7         |
| 62 | Design, Fabrication, and Test of a High-Strength Uniform Pressure Actuator. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.  | 1.7 | 6         |
| 63 | Mechanism of high velocity electromagnetic deformation of Al-Mg alloy. Philosophical Magazine, 2017, 97, 69-83.   | 1.6 | 6         |
| 64 | Effects of the inner/outer diameters of flat spiral coils on electromagnetic sheet metal formation. International Journal of Advanced Manufacturing Technology, 2020, 109, 1541-1551.   | 3.0 | 6         |
| 65 | Toward better metal flow control in electrohydraulic sheet forming by combining with electromagnetic approach. Journal of Materials Processing Technology, 2022, 299, 117343.   | 6.3 | 6         |
| 66 | Field-Circuit Cosimulation of 500-kV Transformers in AC/DC Hybrid Power Grid. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-5.  | 1.7 | 5         |
| 67 | Fast Cooling Pulsed Magnet Using Distributed Mini-gaps. IEEE Transactions on Applied Superconductivity, 2018, 28, 1-5.  | 1.7 | 5         |
| 68 | Understanding and prediction of magnetization state of elliptic cross-section matrices in high gradient magnetic separation. Minerals Engineering, 2021, 172, 107137.   | 4.3 | 5         |
| 69 | Improving the fatigue performance of AZ31 sheet with hole via electromagnetic cold expansion process. International Journal of Advanced Manufacturing Technology, 2022, 120, 5057-5071.   | 3.0 | 5         |
| 70 | Principle and realization of an electromagnetic pulse welding system with a dual-stage coil. International Journal of Applied Electromagnetics and Mechanics, 2018, 57, 389-398.  | 0.6 | 4         |
| 71 | Magnetic Levitation With Cylindrical Magnets for Density-Based Measurement. IEEE Transactions on Instrumentation and Measurement, 2023, 72, 1-8.  | 4.7 | 4         |
| 72 | Numerical investigation on the effects of circuit parameters on the plastic deformation of fastener holes in thin aluminum alloy via electromagnetic expansion process. International Journal of Advanced Manufacturing Technology, 2021, 117, 795-807. | 3.0 | 4         |

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|----|---|------|-----------|
| 73 | Relaxation of the Residual Stress in an Aluminum Alloy Ring by Electromagnetic Bulging Methods. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-5.  | 1.7  | 4         |
| 74 | Production and use of adaptive pulsed Lorentz force for multi-step electromagnetic sheet metal forming: method, experimental validation, and application. International Journal of Advanced Manufacturing Technology, 2022, 120, 5521-5536. | 3.0  | 4         |
| 75 | Water-based ferrofluid with tunable stability and its significance in nuclear wastewater treatment. Journal of Hazardous Materials, 2022, 434, 128893.  | 12.4 | 4         |
| 76 | Radial-axial Force Controlled Electromagnetic Sheet Deep Drawing: Electromagnetic Analysis. Procedia Engineering, 2014, 81, 2505-2511.  | 1.2  | 3         |
| 77 | Investigation of accurate forming of a semi-ellipsoidal shell part by an electromagnetic forming method. International Journal of Advanced Manufacturing Technology, 2019, 105, 1113-1128.  | 3.0  | 3         |
| 78 | Fault analysis and simulation of ground-fault accident on transformer in 500kV AC/DC grids. International Journal of Applied Electromagnetics and Mechanics, 2019, 60, 1-12.  | 0.6  | 3         |
| 79 | A Uniform Pressure Actuator With High Forming Efficiency Based on the Pulsed Magnet Manufacturing Technique. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-5.   | 1.7  | 3         |
| 80 | Numerical and experimental verification of an iterative coupling method for analyzing the Lorentz-force-driven sheet metal stamping process. International Journal of Advanced Manufacturing Technology, 2021, 115, 2161-2173.              | 3.0  | 3         |
| 81 | Electromagnetic attractive forming of aluminum alloy sheets utilizing a low-frequency half-wave current. Materials and Manufacturing Processes, 2022, 37, 55-63.  | 4.7  | 3         |
| 82 | Magnetically tunable distribution pattern of magnetic particles in a micro-particle sedimentation system. Powder Technology, 2020, 370, 147-158.  | 4.2  | 3         |
| 83 | A novel non-contacting single-coil electromagnetic hole expansion process to improve the fatigue performance of hole component. International Journal of Fatigue, 2022, 162, 106924.  | 5.7  | 3         |
| 84 | A linear hall effect displacement sensor using a stationary two-pair coil system. , 2011, , .   |      | 2         |
| 85 | High Temperature Magnetization Measurement System in Pulsed Magnetic Field. IEEE Transactions on Applied Superconductivity, 2012, 22, 9001804-9001804.  | 1.7  | 2         |
| 86 | Effect of Electromagnetic Ring Expansion on the Mechanical Property of A5083 Aluminum Alloy. IEEE Transactions on Applied Superconductivity, 2014, 24, 1-4.   | 1.7  | 2         |
| 87 | Bidirectional Repeating Long Pulse Magnet System for Magnetic Refrigerator. IEEE Transactions on Applied Superconductivity, 2014, 24, 1-5.  | 1.7  | 2         |
| 88 | Bulging of 1420 Al-Li alloy based on Pulse Current. Procedia Engineering, 2014, 81, 808-812.  | 1.2  | 2         |
| 89 | Note: Magnetic targeting for enhancement of the activation efficiency of G protein-coupled receptor with a two-pair coil system. Review of Scientific Instruments, 2016, 87, 016103.  | 1.3  | 2         |
| 90 | Numerical and Experimental Investigations on the Manipulation of Magnetic Particles in a Microsystem Using a Hybrid Magnet System. IEEE Transactions on Applied Superconductivity, 2016, 26, 1-4.   | 1.7  | 2         |

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|-----|---|-----|-----------|
| 91  | Coil-less electromagnetic forming process with uniform-pressure characteristics for shaping sheet metals. Journal of Manufacturing Processes, 2021, 70, 140-151.  | 5.9 | 2         |
| 92  | Research Into Controlling the Material Flow for Electrohydraulic Forming Alloy Tubes by a Pulsed Magnet. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-5.                                     | 1.7 | 2         |
| 93  | Electromagnetic-Thermal Modeling of Electromagnetic Brake Using Finite-Element Analysis. Applied Mechanics and Materials, 0, 392, 290-294.  | 0.2 | 1         |
| 94  | Design and Experimental Validation of a Pulsed Electromagnetic Sheet Shearing System. IEEE Transactions on Applied Superconductivity, 2016, , 1-1.  | 1.7 | 1         |
| 95  | Research of thermal loads in plate forming coil during repeated electromagnetic forming process. , 2018, , .  |     | 1         |
| 96  | Deformation behavior of tube in electromagnetic forming with an external die. International Journal of Applied Electromagnetics and Mechanics, 2018, 57, 377-388.   | 0.6 | 1         |
| 97  | Pulsed Magnet Design and Fabrication for Generating Background Magnetic Field in Discharge Current-Based Forming. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-5.                            | 1.7 | 1         |
| 98  | Design and Fabrication of a High-Performance Magnetic Actuator for Magnetic Pulse Welding of Metal Tubes with Large Diameters. Minerals, Metals and Materials Series, 2021, , 1291-1303.                    | 0.4 | 1         |
| 99  | Insights into the effect of magnetic interactions on the magnetization process of matrices in high gradient magnetic separation. Minerals Engineering, 2021, 174, 107269.                                   | 4.3 | 1         |
| 100 | Design of Pulsed Magnet for Adjusting the Residual Stress Field in Large-Size Aluminum Alloy Rings. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-5.  | 1.7 | 1         |
| 101 | Data-driven method for process optimization in electromagnetic-electrohydraulic hybrid high-velocity sheet metal forming. International Journal of Advanced Manufacturing Technology, 2022, 121, 4355-4365. | 3.0 | 1         |
| 102 | Study on the AC Electromagnetic Tracking Behaviors Using Finite Element Analysis. Advanced Materials Research, 0, 268-270, 1200-1204.   | 0.3 | 0         |
| 103 | Numerical analysis and simulation of magnetic flux and force in a three-coil system. , 2016, , .  |     | 0         |
| 104 | High speed displacement measurement based on electro-magnetic induction applied to electromagnetically driven ring expansion. Review of Scientific Instruments, 2017, 88, 114702.                           | 1.3 | 0         |
| 105 | Research of a New DC Breaker Based on the Electromagnetic Forming Technology. , 2018, , .   |     | 0         |
| 106 | Numerical simulation and experimental results of radial Lorentz force assisted electro-hydraulic sheet forming process. , 2020, , .   |     | 0         |
| 107 | Systematic investigation of deformation behavior of tubes in a three-coil electromagnetic forming process. International Journal of Advanced Manufacturing Technology, 2022, 119, 5163.                     | 3.0 | 0         |
| 108 | Toward Flexible Actuator Design for Electromagnetic Flanging of Sheet and Tube Metal. IEEE Transactions on Applied Superconductivity, 2022, 32, 1-4.  | 1.7 | 0         |

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|-----|--|-----|-----------|
| 109 | Improvement in fatigue performance of thin fasteners via electromagnetic strengthening process. International Journal of Fatigue, 2022, 162, 106991. | 5.7 | 0         |