

# Ping Zhu

## List of Publications by Year in descending order

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76  
papers

1,788  
citations

279798

23  
h-index

315739

38  
g-index

76  
all docs

76  
docs citations

76  
times ranked

1185  
citing authors

| #  | ARTICLE  | IF  | CITATIONS |
|----|--|-----|-----------|
| 1  | Global sensitivity analysis of mechanical properties in hybrid single lap aluminum-CFRP (plain woven) joints based on uncertainty quantification. <i>Composite Structures</i> , 2022, 280, 114841.                                       | 5.8 | 4         |
| 2  | Data-driven multiscale design of cellular composites with multiclass microstructures for natural frequency maximization. <i>Composite Structures</i> , 2022, 280, 114949.  | 5.8 | 16        |
| 3  | Multiscale modeling based failure criterion of injection molded SFRP composites considering skin-core-skin layered microstructure and variable parameters. <i>Composite Structures</i> , 2022, 286, 115277.                              | 5.8 | 7         |
| 4  | A novel energy-based framework for characterizing the strain-softening behavior of CFRP composites using cyclic loading. <i>Polymer Composites</i> , 2022, 43, 2698-2710.  | 4.6 | 3         |
| 5  | Mechanical cloak via data-driven aperiodic metamaterial design. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022, 119, e2122185119.   | 7.1 | 27        |
| 6  | A new multi-fidelity surrogate modelling method for engineering design based on neural network and transfer learning. <i>Engineering Computations</i> , 2022, 39, 2209-2230.   | 1.4 | 8         |
| 7  | A novel polynomial chaos expansion-based method for feedback-coupled multidisciplinary design optimization under metamodel uncertainty. <i>Structural and Multidisciplinary Optimization</i> , 2022, 65, .                               | 3.5 | 1         |
| 8  | Fatigue failure mechanism analysis and life prediction of short fiber reinforced polymer composites under tension-tension loading. <i>International Journal of Fatigue</i> , 2022, 160, 106880.  | 5.7 | 10        |
| 9  | Generalized de-homogenization via sawtooth-function-based mapping and its demonstration on data-driven frequency response optimization. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2022, 395, 114967.                | 6.6 | 13        |
| 10 | An estimation variance reduction-guided adaptive Kriging method for efficient time-variant structural reliability analysis. <i>Mechanical Systems and Signal Processing</i> , 2022, 178, 109322.   | 8.0 | 17        |
| 11 | Research on prediction method of mechanical properties of open-hole laminated plain woven CFRP composites considering drilling-induced delamination damage. <i>Mechanics of Advanced Materials and Structures</i> , 2021, 28, 2515-2530. | 2.6 | 28        |
| 12 | Diversity-enhanced particle swarm optimization algorithm based on the group behaviour of social spiders. <i>Engineering Optimization</i> , 2021, 53, 811-829.  | 2.6 | 4         |
| 13 | Research in failure behaviors of hybrid single lap aluminum-CFRP (plain woven) joints. <i>Thin-Walled Structures</i> , 2021, 161, 107488.  | 5.3 | 21        |
| 14 | Sequential Sampling Framework for Metamodeling Uncertainty Reduction in Multilevel Optimization of Hierarchical Systems. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2021, 143, .                                    | 2.9 | 4         |
| 15 | Numerical analysis of hybrid (bonded/bolted) FRP composite joints: A review. <i>Composite Structures</i> , 2021, 262, 113606.  | 5.8 | 31        |
| 16 | An improved multi-objective optimization algorithm with mixed variables for automobile engine hood lightweight design. <i>Journal of Mechanical Science and Technology</i> , 2021, 35, 2073-2082.  | 1.5 | 8         |
| 17 | A general integrated procedure for uncertainty-based design optimization of multilevel systems by hierarchical decomposition framework. <i>Structural and Multidisciplinary Optimization</i> , 2021, 64, 2669-2686.                      | 3.5 | 1         |
| 18 | An innovative computational framework for the analysis of complex mechanical behaviors of short fiber reinforced polymer composites. <i>Composite Structures</i> , 2021, 277, 114594.  | 5.8 | 19        |

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|----|--|-----|-----------|
| 19 | Mapping-Based Hierarchical Sensitivity Analysis for Multilevel Systems With Multidimensional Correlations. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2021, 143, .                                | 2.9 | 2         |
| 20 | Data-Driven Topology Optimization With Multiclass Microstructures Using Latent Variable Gaussian Process. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2021, 143, .                                 | 2.9 | 35        |
| 21 | Progressive damage modelling and experimental investigation of three-dimensional orthogonal woven composites with tilted binder. <i>Journal of Industrial Textiles</i> , 2020, 50, 70-97.                              | 2.4 | 4         |
| 22 | Uncertainty quantification of mechanical properties for three-dimensional orthogonal woven composites. Part II: Multiscale simulation. <i>Composite Structures</i> , 2020, 235, 111764.                                | 5.8 | 14        |
| 23 | Uncertainty quantification of mechanical properties for three-dimensional orthogonal woven composites. Part I: Stochastic reinforcement geometry reconstruction. <i>Composite Structures</i> , 2020, 235, 111763.      | 5.8 | 12        |
| 24 | Deep generative modeling for mechanistic-based learning and design of metamaterial systems. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020, 372, 113377.  | 6.6 | 117       |
| 25 | Sensitivity-based adaptive sequential sampling for metamodel uncertainty reduction in multilevel systems. <i>Structural and Multidisciplinary Optimization</i> , 2020, 62, 1473-1496.                                  | 3.5 | 8         |
| 26 | A GAN-based image synthesis method for skin lesion classification. <i>Computer Methods and Programs in Biomedicine</i> , 2020, 195, 105568.  | 4.7 | 143       |
| 27 | Data-driven metamaterial design with Laplace-Beltrami spectrum as "shape-DNA". <i>Structural and Multidisciplinary Optimization</i> , 2020, 61, 2613-2628.   | 3.5 | 25        |
| 28 | An adaptive multi-fidelity approach for design optimization of mesostructure-structure systems. <i>Structural and Multidisciplinary Optimization</i> , 2020, 62, 375-386.  | 3.5 | 7         |
| 29 | Computational micromechanics-based prediction of the failure of unidirectional composite lamina subjected to transverse and in-plane shear stress states. <i>Journal of Composite Materials</i> , 2020, 54, 3637-3654. | 2.4 | 30        |
| 30 | A Vine Copula-Based Hierarchical Framework for Multiscale Uncertainty Analysis. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2020, 142, .   | 2.9 | 11        |
| 31 | Data-Driven Multiscale Topology Optimization Using Multi-Response Latent Variable Gaussian Process. , 2020, , .  |     | 2         |
| 32 | Generation of random fiber distributions for unidirectional fiber-reinforced composites based on particle swarm optimizer. <i>Polymer Composites</i> , 2019, 40, 1643-1653.  | 4.6 | 7         |
| 33 | An improved OPAX method based on moving multi-band model. <i>Mechanical Systems and Signal Processing</i> , 2019, 122, 321-341.  | 8.0 | 9         |
| 34 | Diversity enhanced particle swarm optimization algorithm and its application in vehicle lightweight design. <i>Journal of Mechanical Science and Technology</i> , 2019, 33, 695-709.                                   | 1.5 | 20        |
| 35 | Uncertainty analysis of mechanical properties of plain woven carbon fiber reinforced composite via stochastic constitutive modeling. <i>Composite Structures</i> , 2019, 207, 684-700.                                 | 5.8 | 23        |
| 36 | A parallel boundary search particle swarm optimization algorithm for constrained optimization problems. <i>Structural and Multidisciplinary Optimization</i> , 2018, 58, 1505-1522.                                    | 3.5 | 17        |

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|----|--|-----|-----------|
| 37 | The transfer path analysis method on the use of artificial excitation: Numerical and experimental studies. <i>Applied Acoustics</i> , 2018, 136, 102-112.  | 3.3 | 18        |
| 38 | Numerical investigation of fiber random distribution on the mechanical properties of yarn in-plain woven carbon fiber-reinforced composite based on a new perturbation algorithm. <i>Journal of Composite Materials</i> , 2018, 52, 755-771. | 2.4 | 23        |
| 39 | Relationships between the decoupled and coupled transfer functions: Theoretical studies and experimental validation. <i>Mechanical Systems and Signal Processing</i> , 2018, 98, 936-950.  | 8.0 | 13        |
| 40 | Hierarchical framework for quantifying multiscale structures of two-dimensional woven carbon fibre-reinforced composites considering geometric variability. <i>Journal of Industrial Textiles</i> , 2018, 48, 802-824.                       | 2.4 | 7         |
| 41 | Global Sensitivity Analysis for the Elastic Properties of Unidirectional Carbon Fibre Reinforced Composites Based on Metamodels. <i>Polymers and Polymer Composites</i> , 2018, 26, 205-221.   | 1.9 | 2         |
| 42 | Lightweight Design of Three-Dimensional Woven Composite Automobile Shock Tower. , ,  |     | 2         |
| 43 | Prediction of the Elastic Properties of a Plain Woven Carbon Fiber Reinforced Composite with Internal Geometric Variability. <i>Automotive Innovation</i> , 2018, 1, 147-157.  | 5.1 | 6         |
| 44 | Reliability-based design optimization of composite battery box based on modified particle swarm optimization algorithm. <i>Composite Structures</i> , 2018, 204, 239-255.  | 5.8 | 35        |
| 45 | Experimental study and modeling of fatigue life prediction of plain weave carbon/polymer composite under constant amplitude loading. <i>Advanced Composite Materials</i> , 2017, 26, 295-320.  | 1.9 | 4         |
| 46 | Response prediction for modified mechanical systems based on in-situ frequency response functions: Theoretical and numerical studies. <i>Journal of Sound and Vibration</i> , 2017, 400, 417-441.  | 3.9 | 19        |
| 47 | A system response prediction approach based on global transmissibilities and its relation with transfer path analysis methods. <i>Applied Acoustics</i> , 2017, 123, 29-46.  | 3.3 | 15        |
| 48 | Multi-scale design of three dimensional woven composite automobile fender using modified particle swarm optimization algorithm. <i>Composite Structures</i> , 2017, 181, 73-83.  | 5.8 | 44        |
| 49 | Response prediction techniques and case studies of a path blocking system based on Global Transmissibility Direct Transmissibility method. <i>Journal of Sound and Vibration</i> , 2017, 388, 363-388.                                       | 3.9 | 16        |
| 50 | Experimental study of in-plane mechanical performance of carbon/glass hybrid woven composite at different strain rates. <i>International Journal of Crashworthiness</i> , 2016, 21, 542-554.   | 1.9 | 5         |
| 51 | Lightweight design of automotive composite bumper system using modified particle swarm optimizer. <i>Composite Structures</i> , 2016, 140, 630-643.  | 5.8 | 114       |
| 52 | A new sampling-based RBDO method via score function with reweighting scheme and application to vehicle designs. <i>Applied Mathematical Modelling</i> , 2015, 39, 4243-4256.   | 4.2 | 22        |
| 53 | Improved particle swarm optimization algorithm using design of experiment and data mining techniques. <i>Structural and Multidisciplinary Optimization</i> , 2015, 52, 813-826.  | 3.5 | 24        |
| 54 | Multi-point objective-oriented sequential sampling strategy for constrained robust design. <i>Engineering Optimization</i> , 2015, 47, 287-307.  | 2.6 | 18        |

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|----|--|-----|-----------|
| 55 | Identification of the mechanical properties of the carbon fiber and the interphase region based on computational micromechanics and Kriging metamodel. <i>Computational Materials Science</i> , 2014, 95, 172-180.   | 3.0 | 26        |
| 56 | Application of conservative surrogate to reliability based vehicle design for crashworthiness. <i>Journal of Shanghai Jiaotong University (Science)</i> , 2013, 18, 159-165.   | 0.9 | 9         |
| 57 | Effects of particle clustering on the tensile properties and failure mechanisms of hollow spheres filled syntactic foams: A numerical investigation by microstructure based modeling. <i>Materials &amp; Design</i> , 2013, 47, 80-89.                           | 5.1 | 65        |
| 58 | Concurrent treatment of parametric uncertainty and metamodeling uncertainty in robust design. <i>Structural and Multidisciplinary Optimization</i> , 2013, 47, 63-76.  | 3.5 | 64        |
| 59 | Lightweight design of vehicle parameters under crashworthiness using conservative surrogates. <i>Computers in Industry</i> , 2013, 64, 280-289.  | 9.9 | 34        |
| 60 | Identification of the interface properties of hollow spheres filled syntactic foams: An inverse strategy combining microstructural modeling with Kriging metamodel. <i>Composites Science and Technology</i> , 2013, 74, 179-185.                                | 7.8 | 15        |
| 61 | Radial fatigue analysis method of steel hub based on partitioned seam weld model and a new pressure distribution regulation. <i>Materials &amp; Design</i> , 2013, 47, 115-124.  | 5.1 | 7         |
| 62 | Robust expected violation criterion for constrained robust design problems and its application in automotive lightweight design. <i>Journal of Shanghai Jiaotong University (Science)</i> , 2013, 18, 257-263.   | 0.9 | 0         |
| 63 | Crashworthiness-based lightweight design problem via new robust design method considering two sources of uncertainties. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2013, 227, 1381-1391. | 2.1 | 17        |
| 64 | Extended Objective-Oriented Sequential Sampling Method for Robust Design of Complex Systems Against Design Uncertainty. , 2012, , .  |     | 7         |
| 65 | Use of support vector regression in structural optimization: Application to vehicle crashworthiness design. <i>Mathematics and Computers in Simulation</i> , 2012, 86, 21-31.  | 4.4 | 41        |
| 66 | Global sensitivity analysis for the elastic properties of hollow spheres filled syntactic foams using high dimensional model representation method. <i>Computational Materials Science</i> , 2012, 61, 89-98.  | 3.0 | 25        |
| 67 | Experimental study and numerical prediction of tensile strength properties and failure modes of hollow spheres filled syntactic foams. <i>Computational Materials Science</i> , 2012, 63, 232-243.   | 3.0 | 41        |
| 68 | A method for selecting surrogate models in crashworthiness optimization. <i>Structural and Multidisciplinary Optimization</i> , 2012, 46, 159-170.   | 3.5 | 56        |
| 69 | Design optimisation of vehicle roof structures: benefits of using multiple surrogates. <i>International Journal of Crashworthiness</i> , 2011, 16, 85-95.  | 1.9 | 23        |
| 70 | Metamodeling development for reliability-based design optimization of automotive body structure. <i>Computers in Industry</i> , 2011, 62, 729-741.   | 9.9 | 44        |
| 71 | Metamodel-based lightweight design of B-pillar with TWB structure via support vector regression. <i>Computers and Structures</i> , 2010, 88, 36-44.  | 4.4 | 140       |
| 72 | Application of a Weighted Average Surrogate to Lightweight Design of Automotive Front Side Rail. , 2010, , .   |     | 2         |

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| 73 | Lightweight Design of Automotive Front Side Rail Based on Robust Optimisation. Thin-Walled Structures, 2007, 45, 670-676.  | 5.3 | 74        |
| 74 | Reliability-based design optimization of 3D orthogonal woven composite automobile shock tower. Journal of Composite Materials, 0, , 002199832110476.   | 2.4 | 3         |
| 75 | CT Image Segmentation Method of Composite Material Based on Improved Watershed Algorithm and U-Net Neural Network Model. Journal of Shanghai Jiaotong University (Science), 0, , 1.  | 0.9 | 0         |
| 76 | A data-driven self-adaptive parameter tuning framework for composite automobile part optimization design. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 0, , 095440702211104. | 1.9 | 0         |