Charles Q Xie

List of Publications by Year
in descending order

50 papers	1,089 citations	394421 19 h-index	454955 30 g-index
50 all docs	50 docs citations	50 times ranked	760 citing authors

#	Article	IF	Citations
1	Learning and teaching engineering design through modeling and simulation on a CAD platform. Computer Applications in Engineering Education, 2018, 26, 824-840.	3.4	75
2	Molecular Dynamics Simulations of Chemical Reactions for Use in Education. Journal of Chemical Education, 2006, 83, 77.	2.3	74
3	An exploratory study of informed engineering design behaviors associated with scientific explanations. International Journal of STEM Education, 2015, 2, .	5.0	66
4	Bridging the designâ€science gap with tools: Science learning and design behaviors in a simulated environment for engineering design. Journal of Research in Science Teaching, 2017, 54, 1049-1096.	3.3	65
5	Profiling self-regulation behaviors in STEM learning of engineering design. Computers and Education, 2020, 143, 103669.	8.3	58
6	Infrared Imaging for Inquiry-Based Learning. Physics Teacher, 2011, 49, 368-372.	0.3	50
7	Interactive Heat Transfer Simulations for Everyone. Physics Teacher, 2012, 50, 237-240.	0.3	50
8	Interatomic potentials between distinct atoms from first-principles calculation and lattice-inversion method. Journal of Applied Physics, 1997, 82, 578-582.	2.5	49
9	Protein electron transfer: a numerical study of tunneling through fluctuating bridges. Chemical Physics Letters, 1999, 312, 237-246.	2.6	45
10	Visualizing Chemistry with Infrared Imaging. Journal of Chemical Education, 2011, 88, 881-885.	2.3	42
11	Electron transfer through fluctuating bridges: On the validity of the superexchange mechanism and time-dependent tunneling matrix elements. Journal of Chemical Physics, 2001, 115, 9444-9462.	3.0	38
12	Computational Experiments for Science Education. Science, 2011, 332, 1516-1517.	12.6	33
13	Longitudinal clustering of studentsâ€™ self-regulated learning behaviors in engineering design. Computers and Education, 2020, 153, 103899.	8.3	32
14	Examining temporal dynamics of self-regulated learning behaviors in STEM learning: A network approach. Computers and Education, 2020, 158, 103987.	8.3	31
15	Infrared cameras in science education. Infrared Physics and Technology, 2016, 75, 150-152.	2.9	30
16	Glycogen phosphorylase inhibitors: A free energy perturbation analysis of glucopyranose spirohydantoin analogues. Proteins: Structure, Function and Bioinformatics, 2005, 61, 984-998.	2.6	25
17	Applying Computational Science to Education: The Molecular Workbench Paradigm. Computing in Science and Engineering, 2008, 10, 24-27.	1.2	24
18	Automatic Assessment of Studentsâ€™ Engineering Design Performance Using a Bayesian Network Model. Journal of Educational Computing Research, 2021, 59, 230-256.	5.5	22

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19	A Computer-Aided Design Based Research Platform for Design Thinking Studies. Journal of Mechanical Design, Transactions of the ASME, 2019, 141, .	2.9	22
20	How Does Augmented Observation Facilitate Multimodal Representational Thinking? Applying Deep Learning to Decode Complex Student Construct. Journal of Science Education and Technology, 2021, 30, 210-226.	3.9	20
21	PUPILSâ€™ EARLY EXPLORATIONS OF THERMOIMAGING TO INTERPRET HEAT AND TEMPERATURE. Journal of Baltic Science Education, 2014, 13, 118-132.	1.0	19
22	Predicting Sequential Design Decisions Using the Function-Behavior-Structure Design Process Model and Recurrent Neural Networks. Journal of Mechanical Design, Transactions of the ASME, 2021, 143, .	2.9	15
23	Using learning analytics to support studentsâ€™ engineering design: the angle of prediction. Interactive Learning Environments, 2023, 31, 2594-2611.	6.4	14
24	Predicting human design decisions with deep recurrent neural network combining static and dynamic data. Design Science, 2020, 6, .	2.1	13
25	A lattice inversion method to construct the alloy pair potential for the embedded-atom method. Journal of Physics Condensed Matter, 1994, 6, 11015-11025.	1.8	12
26	Augmented Reality in Science Laboratories: Investigating High School Studentsâ€™ Navigation Patterns and Their Effects on Learning Performance. Journal of Educational Computing Research, 2022, 60, 777-803.	5.5	12
27	Engaging Students in Distance Learning of Science With Remote Labs 2.0. IEEE Transactions on Learning Technologies, 2022, 15, 15-31.	3.2	12
28	Application of Lattice Inversion Method to Embeddedâ€Atom Method. Physica Status Solidi (B): Basic Research, 1994, 186, 393-402.	1.5	11
29	Are their designs iterative or fixated? Investigating design patterns from student digital footprints in computer-aided design software. International Journal of Technology and Design Education, 2018, 28, 819-841.	2.6	11
30	Chemistry on the Cloud: From Wet Labs to Web Labs. Journal of Chemical Education, 2021, 98, 2840-2847.	2.3	11
31	Invisibility Cloaks and Hot Reactions: Applying Infrared Thermography in the Chemistry Education Laboratory. Journal of Chemical Education, 2020, 97, 710-718.	2.3	10
32	Enhancing distance learning of scienceâ€"Impacts of remote labs 2.0 on students' behavioural and cognitive engagement. Journal of Computer Assisted Learning, 2021, 37, 1606-1621.	5.1	10
33	Recovery of anN-body potential from a universal cohesion equation. Physical Review B, 1995, 51, 15856-15860.	3.2	9
34	Self-regulated learning as a complex dynamical system: Examining students' STEM learning in a simulation environment. Learning and Individual Differences, 2022, 95, 102144.	2.7	9
35	Semiempirical tight-binding interatomic potentials based on the Hubbard model. Physical Review B, 1997, 56, 5235-5242.	3.2	8
36	Chen-MÃ¶bius inversion theorem and a structural representation of crystallographic direction families. Physics Letters, Section A: General, Atomic and Solid State Physics, 1993, 184, 119-126.	2.1	7

#	Article	IF	Citations
37	Going through a phase: Infrared cameras in a teaching sequence on evaporation and condensation. American Journal of Physics, 2019, 87, 577-582.	0.7	7
38	Classroom orchestration of computer simulations for science and engineering learning: a multiple-case study approach. International Journal of Science Education, 2021, 43, 1140-1171.	1.9	7
39	Using machine learning to predict engineering technology studentsâ€™ success with computerâ€aided design. Computer Applications in Engineering Education, 2022, 30, 852-862.	3.4	7
40	The role of self-regulated learning on science and design knowledge gains in engineering projects. Interactive Learning Environments, 2023, 31, 87-99.	6.4	6
41	Matrix-inversion method: Applications to MÃ¶bius inversion adn deconvolution. Physical Review E, 1995, 52, 6055-6065.	2.1	5
42	Unified inversion technique for fermion and boson integral equations. Physical Review E, 1995, 52, 351-355.	2.1	4
43	Dynamics of Adatom Self-Diffusion and Island Morphology Evolution at a Cu(100) Surface. Physica Status Solidi (B): Basic Research, 1998, 207, 153-170.	1.5	4
44	Learning Analytics for Assessing Hands-on Laboratory Skills in Science Classrooms Using Bayesian Network Analysis. Research in Science Education, 2023, 53, 425-444.	2.3	4
45	Reciprocal Relations Between Studentsâ€™ Evaluation, Reformulation Behaviors, and Engineering Design Performance Over Time. Journal of Science Education and Technology, 2021, 30, 595-607.	3.9	3
46	Elastic Constants and Phonon Dispersion of Amorphous Copper with Embeddedâ€Atom Force. Physica Status Solidi (B): Basic Research, 1994, 186, 383-391.	1.5	2
47	The relationship between design reflectivity and conceptions of informed design among high school students. European Journal of Engineering Education, 2019, 44, 123-136.	2.3	2
48	Developing Instructional Design Agents to Support Novice and K-12 Design Education. , 0, , .		2
49	MODELLING AND PROFILING STUDENT DESIGNERSâ€™ COGNITIVE COMPETENCIES IN COMPUTER-AIDED DESIGN. Proceedings of the Design Society, 2021, 1, 2157-2166.	0.8	1
50	Work in Progress: Visualizing Design Team Analytics for Representing and Understanding Design Teamsâ€™ Process. , 0, , .		1