

Sélection d'articles en didactique de la chimie

**Fix Me!**

à ajouter :

- <https://dvillers.umons.ac.be/wiki/teaching:biblio-10.1021-ed2001957>

Liens rapides :

- <http://pubs.acs.org/toc/jceda8/current> : **numéro courant de Journal of Chemical Education** où vous avez la possibilité de consulter les résumés. Si vous souhaitez recevoir la table des matières à chaque nouveau numéro, il vous suffit de prendre l'option "register" (<https://account.acs.org/ssoamweb/account/signUp>), et ensuite de demander les "E-Mail Alerts" pour les journaux choisis. Pour les étudiants et le personnel UMONS, vous pouvez accéder aux textes complets sur le réseau de l'UMONS ou en activant le [VPN](#), ou via le [bureau à distance](#).
 - [Fil RSS des derniers articles parus dans Journal of Chemical Education](#)
- **Chemistry Education Research and Practice : journal de la Royal Society of Chemistry**, accessible sur inscription. Vous pouvez obtenir des alertes via la page <http://www.rsc.org/Publishing/Journals/forms/V5profile.asp>, ainsi que pour [Education in chemistry](#).
 - [Fil RSS des derniers articles parus dans Chemistry Education Research and Practice](#)
- [The Chemical Educator - table of contents](#)
- [Publications intéressantes \(résumés\)](#) (sélections d'articles discutés lors de séminaires internes, sur ce wiki)
- [Publications intéressantes de chimie-physique](#), pour travaux personnels d'étudiants,...

Dans les listes qui suivent, certains articles concernent l'enseignement supérieur et présentent donc un intérêt relatif par rapport au secondaire.

Articles de Journal of Chemical Education

ASAP and/or ACS Editors Choice articles

- ...

Virtual Issues

- [Journal of Chemical Education - Resources for Teaching Your Chemistry Class Online: A Free to Read Collection from the American Chemical Society & the ACS Division of Chemical Education](#)
- [Laboratory Learning](#)

Cf. aussi le lien [virtual collections](#).

2021

- [Journal of Chemical Education - Vol 98, No 2](#)
 - [Dimensions of Variation in Chemistry Instructors' Approaches to the Evaluation and Grading of Student Responses](#)
 - [Epistemological Profile of Chemical Bonding: Evaluation of Knowledge Construction in High School](#)
 - [Using Games to Build and Improve 10th Grade Students' Understanding of the Concept of Chemical Bonding and the Representation of Molecules](#)
 - [What Is in a Prerequisite? An Observational Study on the Effect of General Chemistry on Organic Chemistry Performance](#)
 - [Teaching Cheminformatics through a Collaborative Intercollegiate Online Chemistry Course \(OLCC\)](#)
 - [Determining University Students' Familiarity and Understanding of Laboratory Safety Knowledge—A Case Study](#)
 - [Modular Science Kit as a support platform for STEM learning in primary and secondary school](#)
 - [Exploring Chemistry with Wireless, PC-Less Portable Virtual Reality Laboratories](#)
 - [CheMakers: Playing a Collaborative Board Game to Understand Organic Chemistry](#)
 - [ChemistDice: A Game for Organic Functional Groups](#)
 - [Introducing Students to the Periodic Table Using a Descriptive Approach of Superheroes, Meats, and Fruits and Nuts](#)
 - [Discovering the Chemical Mechanism of Common Heating Agents: A Stepwise Inquiry with Student-Designed Experiments in a High School Laboratory Course](#)
 - [Building a Raspberry Pi Spectrophotometer for Undergraduate Chemistry Classes](#)
 - [From Abstract to Manipulatable: The Hybridization Explorer, A Digital Interactive for Studying Orbitals](#)
 - [360° Virtual Laboratory Tour with Embedded Skills Videos](#)
 - [Clarity on Cronbach's Alpha Use](#)
 - [A Creative Commons Textbook for Teaching Scientific Computing to Chemistry Students with Python and Jupyter Notebooks](#)
 - [Resuscitating the Mercury Beating Heart: An Improvement on the Classic Demo](#)
- [Journal of Chemical Education | Vol 98, No 1 - Special Issue on Chemical Safety Education: Methods, Culture, and Green Chemistry](#)
 - [Safety Moments in Chemical Safety Education | Journal of Chemical Education](#)
 - [RAMP: A Safety Tool for Chemists and Chemistry Students | Journal of Chemical Education](#)
 - [Building Strong Cultures with Chemical Safety Education | Journal of Chemical Education](#)
 - [An Engaging and Fun Breakout Activity for Educators and Students about Laboratory Safety | Journal of Chemical Education](#)
 - [Reinterpreting Popular Demonstrations for Use in a Laboratory Safety Session That Engages Students in Observation, Prediction, Record Keeping, and Problem Solving | Journal of Chemical Education](#)
 - [Open Digital Educational Resources for Self-Training Chemistry Lab Safety Rules | Journal of Chemical Education](#)
 - [Using Virtual Reality to Demonstrate Glove Hygiene in Introductory Chemistry Laboratories | Journal of Chemical Education](#)
 - [Developing Risk Assessment Competencies in Preservice K-12 Teachers | Journal of](#)

Chemical Education

- [Safe Handling of Gas Generating Experiments Using Disposable Plastic Syringes | Journal of Chemical Education](#)

2020

- [Journal of Chemical Education | Vol 97, No 12](#)
 - [Will 2020 Be an Inflection Point in the Trajectory of Chemistry Teaching and Learning? | Journal of Chemical Education](#)
 - [Examining the Psychometric Properties of the Redox Concept Inventory: A Rasch Approach | Journal of Chemical Education](#)
 - [Analyzing Chemistry Teachers' Formative Assessment Practices Using Formative Assessment Portfolio Chapters](#) Timothy N. Abell and Hannah Sevan, J. Chem. Educ. 2020, 97, 12, 4255–4267 DOI: 10.1021/acs.jchemed.0c00361
 - cf. [Are you making the most of formative assessment?](#) David Read, education in chemistry, RSC, 2021
 - [Teaching an Introductory Organic Chemistry Class for High School Students | Journal of Chemical Education](#)
 - [Derivation of the Theoretical Minimum Energy of Separation of Desalination Processes | Journal of Chemical Education](#)
 - [Fun with Flags and Chemistry | Journal of Chemical Education](#)
 - [Race to the Reactor and Other Chemistry Games: Game-Based and Experiential Learning Experiences in Materials and Polymer Chemistry | Journal of Chemical Education](#)
 - [A Photographic Process Using Easily Available Reagents | Journal of Chemical Education](#)
 - [How Should Apples Be Prepared for a Fruit Salad? A Guided Inquiry Physical Chemistry Experiment | Journal of Chemical Education](#)
 - [Structural Chemistry 2.0: Combining Augmented Reality and 3D Online Models | Journal of Chemical Education](#)
 - [Social Distancing During the COVID-19 Pandemic: An Analogy to Explain Collision Cross-Sections in Chemical Kinetics | Journal of Chemical Education](#)
- [Journal of Chemical Education - Vol 97, No 11](#)
 - [Analyzing Students' Construction of Graphical Models: How Does Reaction Rate Change Over Time?](#)
 - ["The Chemistry of Poisons": An Interdisciplinary Approach to Integrating Chemical, Toxicological, and Medicinal Principles](#)
 - [Interactions 500: Design, Implementation, and Evaluation of a Hybrid Board Game for Aiding Students in the Review of Intermolecular Forces During the COVID-19 Pandemic](#)
 - [ChemEscape, Polymer Chemistry: Solving Interactive Puzzles Featuring Scaffolded Learning to Promote Student Understanding of Polymers and Structure–Property Relationships](#)
 - [Using Magnet-Embedded Silicone Balls to Construct Stable Models for Close-Packed Crystal Structures](#)
 - [All Roads Lead to Rome: Triple Stoichiometry with a Lithium Battery](#)
 - [Project-Based Experiment in a Physical Chemistry Teaching Laboratory: Ion Effects on Caffeine Partitioning Thermodynamics](#)
- [Octobre - Journal of Chemical Education - Vol 97, No 10](#)
 - [Commentary on the Models of Electronegativity](#)
 - [Teachers' Noticing, Interpreting, and Acting on Students' Chemical Ideas in Written Work](#)
 - [Review to Analyze and Compare Virtual Chemistry Laboratories for Their Use in Education](#)
 - [Are Heating and Stirring Required to Dissolve Salt in Water? Answers from Quantitative](#)

Experimental Evidence

- Creation of a Phenol/Water Phase Diagram Using a Low-Cost Automated System and Remote Transmission
- A Hybrid Board Game to Engage Students in Reviewing Organic Acids and Bases Concepts
- Determining the Energy of Activation of a Salt, Water, and Alcohol Emulsion
- Septembre - Journal of Chemical Education - Vol 97, No 9
 - Introduction to the Journal of Chemical Education Special Issue on Insights Gained While Teaching Chemistry in the Time of COVID-19
 - Remote Interview Methods in Chemical Education Research
 - Attempts, Successes, and Failures of Distance Learning in the Time of COVID-19
 - Modeling Meaningful Chemistry Teacher Education Online: Reflections from Chemistry Preservice Teacher Educators in Australia
 - Experience-Based Learning Approach to Chemical Kinetics: Learning from the COVID-19 Pandemic
 - Reflections on Three Different High School Chemistry Lab Formats during COVID-19 Remote Learning
 - Using Hands-On Chemistry Experiments While Teaching Online
 - Building an Interactive Immersive Virtual Reality Crime Scene for Future Chemists to Learn Forensic Science Chemistry
 - Development and Use of Kitchen Chemistry Home Practical Activities during Unanticipated Campus Closures
 - Determination of a Kinetic Law of Phosphorescence Decay Using a Conventional Photo Camera and Free Image Processing Software
 - Use of 3D Printing to Manufacture Document Camera Mounts in Support of Online Education Shifts during the COVID-19 Pandemic
 - Benefits of Simulations as Remote Exercises During the COVID-19 Pandemic: An Enzyme Kinetics Case Study
 - Re-flipping in the Remote Classroom: The Surprising Uptake of Video-Recorded Worked Examples
 - Escape the (Remote) Classroom: An Online Escape Room for Remote Learning
 - Physical and Digital Educational Escape Room for Teaching Chemical Bonding] *
[[<https://pubs.acs.org/doi/10.1021/acs.jchemed.0c00739>]A Course of History of Chemistry and Chemical Education Completely Delivered in Distance Education Mode during Epidemic COVID-19
 - Online Data Generation in Quantitative Analysis: Excel Spreadsheets and an Online HPLC Simulator Using a Jupyter Notebook on the Chem Compute Web site
 - At-Home Colorimetric and Absorbance-Based Analyses: An Opportunity for Inquiry-Based, Laboratory-Style Learning
 - A Community Springs to Action to Enable Virtual Laboratory Instruction
 - Plans vs Reality: Reflections on Chemical Crystallography Online Teaching During COVID-19
 - Chemistry in the Kitchen Laboratories at Home
 - Developing Engaging Remote Laboratory Activities for a Nonmajors Chemistry Course During COVID-19
 - Setting Up an Educational Column Chromatography Experiment from Home
 - Choose Your Own "Labventure": A Click-Through Story Approach to Online Laboratories during a Global Pandemic
 - Stay at Home Laboratories for Chemistry Courses
 - When the Kitchen Turns into a Physical Chemistry Lab
 - The Sudden Switch to Online Teaching of an Upper-Level Experimental Physical Chemistry

Course: Challenges and Solutions

- Using Student Insights for Ideas on Video Creation for Chemistry Classes
- Insights Gained During COVID-19: Refocusing Laboratory Assessments Online
- Assessing Student Learning in a Rapidly Changing Environment: Laboratories and Exams
- Designing a Hybrid Biopharmaceutical Laboratory Course to Enhance Content Flexibility and Access
- Remote Teaching and Learning in a Pandemic: Reflections from Chemistry Instructors at a Pharmacy School in Jordan
- Implications for the Use of PowerPoint, Classroom Response Systems, Teams, and Whiteboard to Enhance Online Teaching of Chemistry Subjects in Community College
- Remote Teaching of General Chemistry for Nonscience Majors during COVID-19
- Asynchronous Online Assessment of Physical Chemistry Concepts in the Time of COVID-19
- Using Familiar and New Assessment Tools in Physical Chemistry Courses During COVID-19
- An Applied Research-Based Approach to Support Chemistry Teachers during the COVID-19 Pandemic
- Online Experimentation during COVID-19 Secondary School Closures: Teaching Methods and Student Perceptions
- Gamification of ChemDraw during the COVID-19 Pandemic: Investigating How a Serious, Educational-Game Tournament (Molecule Madness) Impacts Student Wellness and Organic Chemistry Skills while Distance Learning
- Going Remote: How Teaching During a Crisis is Unique to Other Distance Learning Experiences
- Challenges in General Chemistry: The Effect of Moving Online in the Middle of the Semester
- Minimize Online Cheating for Online Assessments During COVID-19 Pandemic
- Strategies for Effective Assessments while Ensuring Academic Integrity in General Chemistry Courses during COVID-19
- Revisiting Distance Learning Resources for Undergraduate Research and Lab Activities during COVID-19 Pandemic
- août
 - A Review of Biochemistry Education Research
 - Factors Influencing Student Learning in Semi-Flipped General Chemistry Courses
 - Short Course on Sustainable Polymers for High School Students
 - Demonstrating Basic Properties and Application of Polarimetry Using a Self-Constructed Polarimeter
 - Go Fischer: An Introductory Organic Chemistry Card Game
 - Rapid Formation of Copper Patinas: A Simple Chemical Demonstration of Why the Statue of Liberty Is Green
 - Construction of a Room-Temperature Eutectic Binary Phase Diagram by Use of Differential Scanning Calorimetry
 - Organic Fanatic: A Quiz-Based Mobile Application Game to Support Learning the Structure and Reactivity of Organic Compounds
 - CHIMACTIV: An Open-Access Website for Student-Centered Learning in Analytical Chemistry
 - Practical Decomposition of Irreducible Representations: Applications to Molecular Vibrations and Molecular Orbitals
 - SeparateDuino: Design and Fabrication of a Low-Cost Arduino-Based Microcentrifuge Using the Recycled Parts of a Computer DVD Drive
 - Clickers versus Plickers: Comparing Two Audience Response Systems in a Smartphone-Free Teaching Environment
 - Preliminary Evidence on the Effect of an Open-Source Textbook in Second-Year

Undergraduate Analytical Chemistry Courses

- Matching Five White Solids to Common Chemicals: A Dissolution Calorimetry and Acid-Base Titration Experiment
- Modified Method for Extraction of Photosynthetic Plant Pigments for Microcolumn Chromatography
- juillet
 - A Walk in the Clouds: Cautionary Tales from a Century of Chemical Agent Work
 - Ricin and Saxitoxin: Two Natural Products That Became Chemical Weapons
 - Security of Chemical Laboratories in Schools and Universities in Slovakia
 - A Proposed Integrated Framework for Chemical Safety and Chemical Security
 - Experimenting with At-Home General Chemistry Laboratories During the COVID-19 Pandemic
 - Chemistry and Mathematics of the Belousov-Zhabotinsky Reaction in a School Laboratory
 - Illustrating the Concepts of Entropy, Free Energy, and Thermodynamic Equilibrium with a Lattice Model
 - Establishing a Connection for Students between the Reacting System and the Particle Model with Games and Stochastic Simulations of the Arrhenius Equation
 - Mock Urinalysis Demonstration: Making Connections among Acid-Base Chemistry, Redox Reactions, and Healthcare in an Undergraduate Nursing Course
 - Fabricating a Low-Cost, Simple, Screen Printed Paper Towel-Based Experimental Device to Demonstrate the Factors Affecting Chemical Equilibrium and Chemical Equilibrium Constant, K_c
 - Interactive Unit Cell Visualization Tool for Crystal Lattice Structures
- juin
 - Establishing the Laboratory as the Place to Learn How to Do Chemistry
 - Johnstone's Triangle as a Pedagogical Framework for Flipped-Class Instructional Videos in Introductory Chemistry
 - Introduction to Medicinal Chemistry: A Five-Day Course for High School Students
 - Comprehensive Training of Undergraduates Majoring in Chemical Education by Designing and Implementing a Simple Thread-Based Microfluidic Experiment
 - Simulating the Effects of Excluded-Volume Interactions in Polymer Solutions
 - Sizzle and Fizzle of Bath Bombs: An Inexpensive and Accessible Kinetics Experiment
 - Teaching Principal Component Analysis Using a Free and Open Source Software Program and Exercises Applying PCA to Real-World Examples
 - An Arduino-Based Talking Calorimeter for Inclusive Lab Activities
 - A Closer Examination of the Mechanism of the Hydrogen Peroxide Iodine-Clock Reaction with Respect to the Role of Hypoiodite Species
- mai
 - Design of Culinary Transformations: A Chemistry Course for Nonscience Majors | Journal of Chemical Education
 - Introducing Nonscience Majors to Science Literacy via a Laboratory and Lecture Beer Brewing Course
 - Property Information in Substance Records in Major Web-Based Chemical Information and Data Retrieval Tools: Understanding Content, Search Opportunities, and Application to Teaching
 - Using Augmented Reality to Stimulate Students and Diffuse Escape Game Activities to Larger Audiences
 - Playing a Board Game to Learn Bioenergy and Biofuels Topics in an Interactive, Engaging Context
 - Relating ΔH_{vap} of Organic Liquids to Intermolecular Forces: Simple Modifications of a

Classic General Chemistry Experiment

- Visualizing 3D Molecular Structures Using an Augmented Reality App
- Monte Carlo Uncertainty Propagation with the NIST Uncertainty Machine
- avril
 - Exploring Students' Understanding of Resonance and Its Relationship to Instruction
 - Didaktik Models in Chemistry Education
 - Probing the Mechanism of Bubble Nucleation in and the Effect of Atmospheric Pressure on the Candy-Cola Soda Geyser
 - Designing and Using an Atomic Model Kit with H, C, N, and O Model Atoms Having a Mass Ratio of 1:12:14:16 to Teach the Concept of Mole and Associated Stoichiometric Relationships
 - Interactive 3D Visualization of Chemical Structure Diagrams Embedded in Text to Aid Spatial Learning Process of Students
 - Platonic Solids and Their Programming: A Geometrical Approach
 - Constructing, Troubleshooting, and Using Absorption Colorimeters to Integrate Chemistry and Engineering
 - Curve Fitting, Linear Algebra, and Solver in an Analytical Chemistry Course: A Facile and Safe Activity Suitable for the Classroom Setting
 - Elephant's Toothpaste Used as a Qualitative Demonstration of Rate versus Temperature
 - Phosphate in Soils: An Undergraduate Exploration of Soil Texture, Chemistry, and Amendment
 - Lab Cooked MOF for CO₂ Capture: A Sustainable Solution to Waste Management
 - Low-Cost 3D-Printed Polarimeter
 - Data Functionalization for Gas Chromatography in Python
 - Leavening Agents: The Chemistry of Baking Discovered with a Computer-Based Learning
 - Changes of CO₂ Concentration and Heat Illustrate Why the Flame Is Extinguished in the Candle-and-Cylinder Experiment
 - The Blue Bottle Experiment Revisited: How Much Oxygen?
 - Comment on "Should Organic Chemistry Be Taught as Science?"
- mars
 - The Emerging Role of Prepublication in Chemistry Education
 - Analysis of Two Definitions of the Mole That Are in Simultaneous Use, and Their Surprising Consequences
 - Impact of Representations in Assessments on Student Performance and Equity
 - Restructuring a General College Chemistry Sequence Using the ACS Anchoring Concepts Content Map
 - Innovative Food Laboratory for a Chemistry of Food and Cooking Course
 - Team-Based Learning for Scientific Computing and Automated Experimentation: Visualization of Colored Reactions
 - Using Image Recognition and Processing Technology to Measure the Gas Volume in a Miniature Water Electrolysis Device Constructed with Simple Materials
 - Invisibility Cloaks and Hot Reactions: Applying Infrared Thermography in the Chemistry Education Laboratory
 - That's Pretty Cool. Using Work to Freeze Water. The Vapor-Compression Refrigerator and How It Works
 - That's So Cool. Using a Flame to Freeze Water. The Vapor-Absorption Refrigerator and How It Works
 - Teaching Thermodynamics with the Quantum Volume
 - Using Elementary Calculus and Dimensional Analysis to Prepare Students for Physical Chemistry
 - Reactions: An Innovative and Fun Hybrid Game to Engage the Students Reviewing

Organic Reactions in the Classroom

- [Rolling the Dice: Modeling First- and Second-Order Reactions via Collision Theory Simulations in an Undergraduate Laboratory](#)
- [AIRduino: On-Demand Atmospheric Secondary Organic Aerosol Measurements with a Mobile Arduino Multisensor](#)
- [Simple Visual-Aided Automated Titration Using the Python Programming Language](#)
- février
 - [Green Chemistry Coverage in Organic Chemistry Textbooks | Journal of Chemical Education](#)
 - [Evaluating Feedstocks, Processes, and Products in the Teaching Laboratory: A Framework for Students To Use Metrics to Design Greener Chemistry Experiments | Journal of Chemical Education](#)
 - [Teaching Kinetics and Equilibrium Topics Using Interlocking Building Bricks in Hands-on Activities | Journal of Chemical Education](#)
 - [A Homemade Smart Phone Microscope for Single-Particle Fluorescence Microscopy | Journal of Chemical Education](#)
 - [Making Acids and Bases MORE Basic: Supporting Students' Conceptualization of Acid-Base Chemistry through a Laboratory Exercise That Connects Molecular-Level Representations to Symbolic Representations and Experimentally Derived Evidence | Journal of Chemical Education](#)
 - [Manipulating Dendritic Growth: An Undergraduate Laboratory Experience with the Interplay between Mass Transport, Supersaturated Solutions, and Dendrite Structure | Journal of Chemical Education](#)
 - [Exploring Chemical Equilibrium for Alcohol-Based Cobalt Complexation through Visualization of Color Change and UV-vis Spectroscopy | Journal of Chemical Education](#)
 - [Determination of Zinc Oxide in Pharmaceutical Preparations by EDTA Titration: A Practical Class for a Quantitative Analysis Course | Journal of Chemical Education](#)
 - [Time Bomb Game: Design, Implementation, and Evaluation of a Fun and Challenging Game Reviewing the Structural Theory of Organic Compounds | Journal of Chemical Education](#)
 - [Fast, Easy, Reproducible Method for Planting Fingerprints for Ninhydrin, Iodine Development | Journal of Chemical Education](#)
- janvier
 - [Problem-Solving Behaviors of Different Achievement Groups on Multiple-Choice Questions in General Chemistry](#) Melonie A. Teichert, Maria J. Schroeder, Shirley Lin, Debra K. Dillner, Regis Komperda, Diane M. Bunce, J. Chem. Educ. 2020, 97, 1, 3-15 DOI: 10.1021/acs.jchemed.9b00774
 - [Dissecting the Flipped Classroom: Using a Randomized Controlled Trial Experiment to Determine When Student Learning Occurs](#) Matthew D. Casselman, Kinnari Atit, Grace Henbest, Cybill Guregyan, Kiana Mortezaei, Jack F. Eichler, J. Chem. Educ. 2020, 97, 1, 27-35 DOI: 10.1021/acs.jchemed.9b00767
 - [A Study To Reduce Chemical Waste Generated in Chemistry Teaching Laboratories](#) Hui Yi Goh, Wei Wen, Clarence Wong, Yue Ying Ong, J. Chem. Educ. 2020, 97, 1, 87-96 DOI: 10.1021/acs.jchemed.9b00632
 - [Applications of 3D-Printing for Improving Chemistry Education](#) Cody W. Pinger, Morgan K. Geiger, Dana M. Spence, J. Chem. Educ. 2020, 97, 1, 112-117 DOI: 10.1021/acs.jchemed.9b00588
 - [ChemEscape: Educational Battle Box Puzzle Activities for Engaging Outreach and Active Learning in General Chemistry](#) Marissa L. Clapson, Brian Gilbert, Vivian J. Mozol, Shauna Schechtel, Judy Tran, Stephen White, J. Chem. Educ. 2020, 97, 1, 125-131 DOI:

10.1021/acs.jchemed.9b00612

- [Do-It-Yourself: Creating and Implementing a Periodic Table of the Elements Chemical Escape Room](#) Malka Yayon, Shelley Rap, Vered Adler, Inbar Haimovich, Hagit Levy, Ron Blonder, J. Chem. Educ. 2020, 97, 1, 132-136 DOI: 10.1021/acs.jchemed.9b00660
- [Microplastics Outreach Program: A Systems-Thinking Approach To Teach High School Students about the Chemistry and Impacts of Plastics](#) Jamie M. Schiffer, Johnnie Lyman, Debra Byrd, Hercules Silverstein, Mathew D. Halls, J. Chem. Educ. 2020, 97, 1, 137-142 DOI: 10.1021/acs.jchemed.9b00249
- [The Purple Flask: A Novel Reformulation of the Blue Bottle Reaction](#) Richard B. Weinberg, J. Chem. Educ. 2020, 97, 1, 159-161 DOI: 10.1021/acs.jchemed.9b00627
- [Stepwise Approach to Hess's Law Using Household Desiccants: A Laboratory Learning Program for High School Chemistry Courses](#) Satoki Kodani, Masahiro Fukuda, Yoji Tsuboi, Nobuyoshi Koga, J. Chem. Educ. 2020, 97, 1, 166-171 DOI: 10.1021/acs.jchemed.9b00492
- [Teaching Electrochemistry with Common Objects: Electrocatalytic Hydrogenation of Acetol with U.S. Coins](#) Chun Ho Lam, James E. Jackson, J. Chem. Educ. 2020, 97, 1, 172-177 DOI: 10.1021/acs.jchemed.9b00431
- [3D-Printed Microfluidics for Hands-On Undergraduate Laboratory Experiments](#) Matthew T. Vangunten, Uriah J. Walker, Han G. Do, Kyle N. Knust, J. Chem. Educ. 2020, 97, 1, 178-183 DOI: 10.1021/acs.jchemed.9b00620
- [Quick and Easy Electroless Deposition and Alkanethiol Treatment To Form a Superhydrophobic Surface](#) Fabian Dauzvardis, Alexander Knapp, Kaung Nan Dar Shein, George Lisensky, J. Chem. Educ. 2020, 97, 1, 184-189 DOI: 10.1021/acs.jchemed.9b00639
- [Basics of Fourier Transform Applied to NMR Spectroscopy: An Interactive Open-Source Web Application](#) Yannick J. Esvan, Wael Zeinyeh, J. Chem. Educ. 2020, 97, 1, 263-264 DOI: 10.1021/acs.jchemed.9b00502

2019

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- [Can Chemistry Be a Central Science without Systems Thinking?](#) Peter G. Mahaffy, Felix M. Ho, Julie A. Haak, Edward J. Brush, J. Chem. Educ. 2019, 96(12), 2679-2681 DOI: 10.1021/acs.jchemed.9b00991
- [Using a Systems Thinking Approach and a Scratch Computer Program To Improve Students' Understanding of the Brønsted-Lowry Acid-Base Model](#) Sungki Kim, Hee Choi, Seoung-Hey Paik, J. Chem. Educ. 2019, 96(12), 2926-2936 DOI: 10.1021/acs.jchemed.9b00210
- [Phosphate Recovery as a Topic for Practical and Interdisciplinary Chemistry Learning](#) Christian Zowada, Antje Siol, Ozcan Gulacar, Ingo Eilks, J. Chem. Educ. 2019, 96(12), 2952-2958 DOI: 10.1021/acs.jchemed.8b01000
- [Situating Sustainable Development within Secondary Chemistry Education via Systems Thinking: A Depth Study Approach](#) Andrew C. Eaton, Seamus Delaney, Madeleine Schultz, J. Chem. Educ. 2019, 96(12), 2968-2974 DOI: 10.1021/acs.jchemed.9b00266
- [Exploring Real-World Applications of Electrochemistry by Constructing a Rechargeable Lithium-Ion Battery](#) Franklin D. R. Maharaj, Wanxin Wu, Yiwei Zhou, Logan T. Schwanz, Michael P. Marshak, J. Chem. Educ. 2019, 96(12), 3014-3017 DOI: 10.1021/acs.jchemed.9b00328

• novembre

- [Design and Evaluation of Integrated Instructions in Secondary-Level Chemistry Practical Work](#) David J. Paterson, J. Chem. Educ. 2019, 96, 11, 2510-2517, DOI: 10.1021/acs.jchemed.9b00194

- [Connecting Organic Chemistry Concepts with Real-World Contexts by Creating Infographics](#) Devki Kothari, Ariana O. Hall, Carol Ann Castañeda, Anne J. McNeil, J. Chem. Educ. 2019, 96, 11, 2524-2527 DOI: 10.1021/acs.jchemed.9b00605
- [Ion Hunters: Playing a Game To Practice Identifying Anions and Cations and Writing Their Names and Formulas](#) Nisa Yenikalaycı, Dilek Çelikler, Zeynep Aksan, J. Chem. Educ. 2019, 96, 11, 2532-2534, DOI: 10.1021/acs.jchemed.8b00732
- [PyMOL as an Instructional Tool To Represent and Manipulate the Myoglobin/Hemoglobin Protein System](#) Jennifer E. Lineback, Ariane L. Jansma, J. Chem. Educ. 2019, 96, 11, 2540-2544 DOI: 10.1021/acs.jchemed.9b00143
- [Incorporating Chemical Structure Drawing Software throughout the Organic Laboratory Curriculum](#) Noel M. Paul, Ryan J. Yoder, Christopher S. Callam, J. Chem. Educ. 2019, 96, 11, 2638-2642, DOI: 10.1021/acs.jchemed.9b00010
- [Low-Cost Turbidimeter, Colorimeter, and Nephelometer for the Student Laboratory](#) Marin Kovačić, Danijela Ašperger, J. Chem. Educ. 2019, 96, 11, 2649-2654, DOI: 10.1021/acs.jchemed.9b00252
- [Mass-Based Approach to the Determination of the Henry's Law Constant for CO₂\(g\) Using a Diet Carbonated Beverage](#) Frazier Nyasulu, Rebecca Barlag, Lauren McMills, Phyllis Arthasery, J. Chem. Educ. 2019, 96, 11, 2661-2664, DOI: 10.1021/acs.jchemed.9b00082
- **octobre**
 - [Developing Student Process Skills in a General Chemistry Laboratory](#) Gil Reynders, Erica Suh, Renée S. Cole, Rebecca L. Sansom, J. Chem. Educ. 2019, 96(10), 2109-2119 DOI: 10.1021/acs.jchemed.9b00441
 - [Assessing College Students' Risk Perceptions of Hazards in Chemistry Laboratories](#) Clara Rosalía Álvarez-Chávez, Luz S. Marín, Karla Perez-Gamez, Mariona Portell, Luis Velazquez, Francisca Munoz-Osuna, J. Chem. Educ. 2019, 96(10), 2120-2131 DOI: 10.1021/acs.jchemed.8b00891
 - [Influence of Exam Blueprint Distribution on Student Perceptions and Performance in an Inorganic Chemistry Course](#) Karin J. Young, Sarah Lashley, Sarah Murray, J. Chem. Educ. 2019, 96(10), 2141-2148 DOI: 10.1021/acs.jchemed.8b01034
 - [A Complementary Laboratory Exercise: Introducing Molecular Structure-Function Topics to Undergraduate Nursing Health Professions Students](#) Angela L. Mahaffey, J. Chem. Educ. 2019, 96(10), 2188-2193 DOI: 10.1021/acs.jchemed.9b00388
 - [Radioactive World: An Outreach Activity for Nuclear Chemistry](#) Sierra C. Marker, Chilaluck C. Konkankit, Mark C. Walsh, Daniel R. Lorey II, Justin J. Wilson, J. Chem. Educ. 2019, 96(10), 2238-2246 DOI: 10.1021/acs.jchemed.9b00242
 - [Simple and Versatile Protocol for Preparing Self-Healing Poly\(vinyl alcohol\) Hydrogels](#) Rylie K. Morris, Abby P. Hilker, Taylor M. Mattice, Shane M. Donovan, Michael T. Wentzel, Patrick H. Willoughby, J. Chem. Educ. 2019, 96(10), 2247-2252 DOI: 10.1021/acs.jchemed.9b00161
 - [It's All Relative! Engaging Nursing and Exercise Science Students in Chemical Education Using Medical Case Studies](#) Angela L. Mahaffey, J. Chem. Educ., 2019, 96(10), 2253-2260 DOI: 10.1021/acs.jchemed.9b00329
 - [A Convenient, Effective, and Safer Flame Demonstration](#) John P. Canal, Rajendra Dev Sharma, Hamel N. Tailor, J. Chem. Educ. 2019, 96(10), 2261-2265 DOI: 10.1021/acs.jchemed.8b01010
 - [Hands-On Experiment To Verify Consistency from Bulk Density to Atomic and Ionic Radii with Lumps of Metals and Ionic Compounds](#) Seong Kyun Kim, Seoung-Hey Paik, J. Chem. Educ. 2019, 96(10), 2271-2278 DOI: 10.1021/acs.jchemed.8b00963
 - [Design and Construction of a Low-Cost Arduino-Based pH Sensor for the Visually Impaired Using Universal pH Paper](#) Abubaker Qutieshat, Rayhana Aouididi, Rayan Arfaoui, J. Chem.

Educ. 2019, 96(10), 2333-2338 DOI: 10.1021/acs.jchemed.9b00450

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Sujet	Citation
Clickers in the classroom	MacArthur and Jones (2008)
Teaching chemical equilibrium	Raviolo and Garritz (2009)
Green chemistry	Andraos and Dicks (2012)
Use of dataloggers	Tortosa (2012)
Transfer of learning	Dori and Sasson (2013)
Chemical triplet (Johnstone's triangle)	Taber (2013)
Learning progressions	Sevian and Talanquer (2014)
Teaching thermodynamics	Bain et al. (2014)
Solutions/electrolytes	de Berg (2014)
Hydrogen bonding	Weinhold and Klein (2014)
Education for sustainable development	Burmeister et al. (2012) Juntunen and Aksela (2014)
Quantum chemistry	Greca and Freire (2014)
Graphical representations of orbitals	Barradas-Solas and Sánchez Gómez (2014) Clauss et al. (2014)
Chemical bonding	Dhindsa and Treagust (2014)

Sujet	Citation
Implicit knowledge	Taber (2014)
Distinguishing abstraction and complexity	Blackie (2014)
Organic chemistry	Graulich (2015)
Capturing student reasoning	Sevian et al. (2015)
Flipped learning	Seery (2015)
Chemical kinetics	Bain and Towns (2016)
Learning difficulties leading to misconceptions	Tümay (2016)
Symbolic expressions in chemistry	Liu and Taber (2016)
Pre-laboratory activities	Agustian and Seery (2017)
Reasoning about structure–property relationships	Talanquer (2018)

La revue propose aussi un [accès thématique](#) :

- Learning progressions and teaching sequences in chemistry education, 2018
- Celebrating our 2018 prize and award winners, 2018
- Development of key skills and attributes in chemistry, 2017
- The language and the teaching and learning of chemistry, 2016
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- [An examination of pre-service chemistry teachers' meaningful understanding and learning difficulties about aromatic compounds using a systemic assessment questions diagram](#)
- [Developing a lesson plan on conventional and green pesticides in chemistry education – a project of participatory action research](#)
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