

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](#)
- [Introducing the Virtual Issue: George M. Bodner Festschrift](#) Marcy Towns, 2021 → [sélection](#)

d'articles sur :

- Constructivism as a Lens for Understanding Student Learning
- Student Conceptualization of Organic Reactions
- Understanding Student Approaches to Problem Solving
- Visualization and Spatial Reasoning Skills in Chemistry Education
- Conceptual Understanding of Chemistry

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

2022

- [Journal of Chemical Education | Vol 99, No 1](#) - Special Issue on Diversity, Equity, Inclusion, and Respect in Chemistry Education Research and Practice
 - [Investigating the Impact of Assessment Practices on the Performance of Students Perceived to Be at Risk of Failure in Second-Semester General Chemistry](#) Lisa Shah, Adan Fatima, Ahmad Syed, and Eric Glasser, J. Chem. Educ. 2022, 99, 1, 14–24 DOI: 10.1021/acs.jchemed.0c01463

2021

- [Journal of Chemical Education | Vol 98, No 12](#)
 - [Valence Bond and Molecular Orbital: Two Powerful Theories that Nicely Complement One Another](#)
 - [Exploring Variation in Ways of Thinking About and Acting to Control a Chemical Reaction](#)
 - [A Program-Level Assessment of Student Understanding of Bonding in the Chemistry Major](#)
 - [An Integrated Database of Common Chemicals and Chemistry Demonstrations and Student Experiments Used in Hungary](#)
 - [Microscale Educational Kits for Learning Chemistry at Home](#)
 - [Using NCBI Entrez Direct \(EDirect\) for Small Molecule Chemical Information Searching in a Unix Terminal](#)
 - [How Many Bubbles Are in the Foam Produced during the Candy-Cola Soda Geyser?](#)
 - [Finding the pKa Values of a Double-Range Indicator Thymol Blue in a Remote Learning Activity](#)
 - [Should We Ban Single-Use Plastics? A Role-Playing Game to Argue and Make Decisions in a Grade-8 School Chemistry Class](#)
 - [Using Sodium Hydrogen Carbonate to Teach Chemical Concepts of Thermodynamics](#)
 - [Examining the Aufbau Principle and Ionization Energies: A Computational Chemistry Exercise for the Introductory Level](#)
 - [Computer Vision in Chemistry: Automatic Titration](#)
 - [Another Useful Film Clip: Scientific Methodology of the Frankenstein Monster](#)
- [Journal of Chemical Education | Vol 98, No 11](#)
 - [Pedagogical Reform in an Introductory Chemistry Course and the Importance of Curricular Alignment \(undergraduate\)](#)
 - [Exemplar Case Studies Demonstrating Why Future Pharmacists Need to Learn Medicinal and Analytical Chemistry \(pharma\)](#)
- [Journal of Chemical Education - Vol 98, No 10](#)
 - [What Role May Intuitive Concepts about Chemical Ideas Play When Students Take Timed Tests?](#)

- Game-Based Learning and Just-in-Time Teaching to Address Misconceptions and Improve Safety and Learning in Laboratory Activities
- Using a Modular Approach to Introduce Python Coding to Support Existing Course Learning Outcomes in a Lower Division Analytical Chemistry Course
- Implementation of a Python Program to Simulate Sampling
- Diffusion of Gases into Air: A Simple Small-Scale Laboratory Activity
- Using an Infrared Camera to Visualize a Simple Demonstration of Changing the Internal Energy of a System
- Journal of Chemical Education - Vol 98, No 9
 - Exploring Sustainability Metrics in General Chemistry Using Intensive and Extensive Properties of Matter
 - Encouraging Biochemistry Students' Metacognition: Reflecting on How Another Student Might Not Carefully Reflect
 - Investigating How Teachers' Formative Assessment Practices Change Across a Year
 - Teaching Chemistry by a Creative Approach: Adapting a Teachers' Course for Active Remote Learning
 - A Gentle Introduction to Machine Learning for Chemists: An Undergraduate Workshop Using Python Notebooks for Visualization, Data Processing, Analysis, and Modeling
 - SIR (Susceptible-Infectious-Removed) Model of Epidemiology as an Extended Example for Chemical Kinetics Students
 - An Interdisciplinary-Complementary Chemical Approach to Effective Evaluation in Undergraduate Laboratory Experiments
 - Library of 3D Visual Teaching Tools for the Chemistry Classroom Accessible via Sketchfab and Viewable in Augmented Reality
- Journal of Chemical Education - Vol 98, No 8
 - LAB Theory, HLAB Pedagogy, and Review of Laboratory Learning in Chemistry during the COVID-19 Pandemic
 - Electronic Entropy as a Periodic Property of the Elements: A Theoretical Chemistry Approach
 - An Inexpensive 3D-Printable Do-It-Yourself Visible Spectrophotometer for Online, Hybrid, and Classroom-Based Learning
 - At-Home Titration: Magnesium Hydroxide in Milk of Magnesia Using an Inexpensive Digital Balance and Natural Food Dye as Indicators
 - Glowing-in-the-Screen: Teaching Fluorescence with a Homemade Accessible Setup
- Journal of Chemical Education - Vol 98, No 7
 - Improving Learning Outcomes and Metacognitive Monitoring: Replacing Traditional Textbook Readings with Question-Embedded Videos
 - Do Social Chemophobic Attitudes Influence the Opinions of Secondary School Students?
 - Assessment of Technological Setup for Teaching Real-Time and Recorded Laboratories for Online Learning: Implications for the Return to In-Person Learning
 - Conversation among Physical Chemists: Strategies and Resources for Remote Teaching and Learning Catalyzed by a Global Pandemic
 - MolecuLARweb: A Web Site for Chemistry and Structural Biology Education through Interactive Augmented Reality out of the Box in Commodity Devices
 - Calculating Soft-Sphere Ionic Radii for Solid-State Arrangements from Solution Measurements
 - Introducing Undergraduates to Primary Research Literature
 - Interactive Lecture in Redox Chemistry: Analysis of the Impact of the Dissemination of University Scientific Research among High School Students
 - Educational Videogame to Learn the Periodic Table: Design Rationale and Lessons Learned

- [Escape from Quant Lab: Using Lab Skill Progression and a Final Project to Engage Students](#)
- [Educational Escape Room: Break Dalton's Code and Escape!](#)
- [Liquid-Liquid Demonstrations: Phase Equilibria and the Lever Rule](#)
- [Liquid-Liquid Demonstrations: Critical Opalescence](#)
- [Liquid-Liquid Demonstrations: Spinodal Decomposition](#)
- [Integrating Artificial Intelligence to Chemistry Experiment: Carbon Dioxide Fountain](#)
- [Inexpensive Alkaline Fuel Cell for Introductory Chemistry Classes](#)
- [Journal of Chemical Education - Vol 98, No 6](#)
 - [Mimicking Students' Behavior during a Titration Experiment: Designing a Digital Student-Centered Experimental Environment | Journal of Chemical Education](#)
 - [Designing and 3D Printing an Improved Method of Measuring Contact Angle in the Middle School Classroom | Journal of Chemical Education](#)
 - [Polysketch Pen: Drawing from Materials Chemistry to Create Interactive Art and Sensors Using a Polyaniline Ink | Journal of Chemical Education](#)
 - [Exploring Chemical Kinetics at Home in Times of Pandemic: Following the Bleaching of Food Dye Allura Red Using a Smartphone | Journal of Chemical Education](#)
 - [Advantages and Disadvantages of Using the Answer-Until-Correct Multiple-Choice Test Format for a Class of Non-STEM Majors | Journal of Chemical Education](#)
- [Journal of Chemical Education - Vol 98, No 5](#)
 - [Combining Jigsaws, Rule-Based Learning, and Retrieval Practice Improves IUPAC Nomenclature Competence | Journal of Chemical Education](#)
 - [Using Classical Test Theory and Rasch Modeling to Improve General Chemistry Exams on a Per Instructor Basis | Journal of Chemical Education](#)
 - [Sample Plan for Easy, Inexpensive, Safe, and Relevant Hands-On, At-Home Wet Organic Chemistry Laboratory Activities | Journal of Chemical Education](#)
 - ["Ethics against Chemistry": Solving a Crime Using Chemistry Concepts and Storytelling in a History of Science-Based Interactive Game for Middle School Students | Journal of Chemical Education](#)
 - [Formation of a Water Ball in a Water Bottle to Learn the Chemistry of Surfactants | Journal of Chemical Education](#)
 - [Using Classic Movie Chemistry Scenes to Introduce Classroom Activities | Journal of Chemical Education](#)
- [Journal of Chemical Education - Vol 98, No 4](#)
 - [Design, Implementation, and Evaluation of a Scientific Modeling Course on Concentration Cells | Journal of Chemical Education](#)
 - [Utilizing Unexpected Results in Water Electrolysis to Engage Students in Scientific Inquiry | Journal of Chemical Education](#)
 - [Tactile Models for the Visualization, Conceptualization, and Review of Intermolecular Forces in the College Chemistry Classroom | Journal of Chemical Education](#)
 - [Computational Chemistry Activities with Avogadro and ORCA | Journal of Chemical Education](#)
 - [Facile Method for Constructing Lewis \(Electron Dot\) Structures | Journal of Chemical Education](#)
- [Journal of Chemical Education - Vol 98, No 3](#)
 - [From Ideas to Items: A Primer on the Development of Ordered Multiple-Choice Items for Investigating the Progression of Learning in Higher Education STEM | Journal of Chemical Education](#)
 - [Use of Simulations and Screencasts to Increase Student Understanding of Energy Concepts in Bonding | Journal of Chemical Education](#)

- Let Students Choose: Examining the Impact of Open Educational Resources on Performance in General Chemistry | Journal of Chemical Education
- Introducing High School Students to the Avogadro Number and the Mole Concept Using Discovery with Calculations Based on Physical Properties of Elements, Crystal Structures, and 28Si Spheres | Journal of Chemical Education
- Connecting Chemistry to Mathematics by Establishing the Relationship between Conductivity and Concentration in an Interdisciplinary, Computer-Based Project for High School Chemistry Students | Journal of Chemical Education
- From Passive Observers to Active Participants: Using Interactive Remote Demonstrations to Increase Student Involvement in Online Chemistry Instruction | Journal of Chemical Education
- Using Pop-Culture to Engage Students in the Classroom | Journal of Chemical Education
- Chemical Battleship: Discovering and Learning the Periodic Table Playing a Didactic and Strategic Board Game | Journal of Chemical Education
- A Choose-Your-Own-Adventure-Style Virtual Lab Activity | Journal of Chemical Education
- Turmeric and RGB Analysis: A Low-Cost Experiment for Teaching Acid-Base Equilibria at Home | Journal of Chemical Education
- MILAGE LEARN+: A Mobile Learning App to Aid the Students in the Study of Organic Chemistry | Journal of Chemical Education
- At-Home Real-Life Sample Preparation and Colorimetric-Based Analysis: A Practical Experience outside the Laboratory | Journal of Chemical Education
- Titrate over the Internet: An Open-Source Remote-Control Titration Unit for All Students | Journal of Chemical Education
- 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
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 - 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
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 - 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
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 - 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
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 - 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
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 - 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
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 - [Put Some Movie Wow! in Your Chemistry Teaching](#), Christopher A. Frey, Marjorie L. Mikasen, Mark A. Griep (DOI: 10.1021/ed300092t)
 - [Synthesis and Study of Silver Nanoparticles](#), Lorraine Mulfinger, Sally D. Solomon, Mozghan Bahadory, Aravindan V. Jeyarajasingam, Susan A. Rutkowsky, Charles Boritz (DOI: 10.1021/ed084p322)
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 - [Cutting-Edge and Cross-Cutting: Connecting the Dots between Nanotechnology and High School Chemistry](#), Gregory T. Rushton, Brett A. Criswell (DOI: 10.1021/ed300531k)
- Commentary
 - [JCE Classroom Activities Virtual Issue: Celebrating 15 Years with the 15 Greatest Hits, 1997-2012](#), Erica K. Jacobsen (DOI: 10.1021/ed300347g)
 - [Galilean Thermometer Not So Galilean](#), Peter Loyson (DOI: 10.1021/ed200793g)
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L'article [Influencing the practice of chemistry education](#) Chem. Educ. Res. Pract., 2019, DOI: 10.1039/C9RP90006C (Editorial) de Michael K. Seery propose de nombreux liens d'articles importants en CER (chemical education research) :

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)
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](#) :

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- Chemistry Teacher Education – Recent Developments, 2009
- Research and Practice in Chemical Education in Advanced Courses, 2008
- The Laboratory in Science Education: The State of the Art, 2007
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Advance articles

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 - [Pre-service chemistry teachers' use of pedagogical transformation competence to develop topic-specific pedagogical content knowledge for planning to teach acid-base equilibrium](#)
 - [The conceptual profile of equilibrium and its contributions to the teaching of chemical equilibrium](#)

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- Effects of different ways of using visualizations on high school students' electrochemistry conceptual understanding and motivation towards chemistry learning - Chemistry Education Research and Practice (RSC Publishing)
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 - Student-generated PowerPoint animations: a study of student teachers' conceptions of molecular motions through their expressed models - Chemistry Education Research and Practice (RSC Publishing)
 - Development of pre-service teachers' pedagogical content knowledge through a PCK-based school experience course - Chemistry Education Research and Practice (RSC Publishing)
 - South African physical sciences teachers' use of formulae and proportion when answering reaction-based stoichiometry calculation questions - Chemistry Education Research and Practice (RSC Publishing)
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 - The role of motivation on secondary school students' causal attributions to choose or abandon chemistry - Chemistry Education Research and Practice (RSC Publishing)
 - Does the way charges and transferred electrons are depicted in an oxidation-reduction animation affect students' explanations? - Chemistry Education Research and Practice (RSC Publishing)
 - I realized what I was doing was not working: the influence of explicit teaching of metacognition on students' study strategies in a general chemistry I course - Chemistry Education Research and Practice (RSC Publishing)
 - The persistence of primary school students' initial ideas about acids and bases in the mental models of adults - Chemistry Education Research and Practice (RSC Publishing)
 - Improving students' summative knowledge of introductory chemistry through the forward testing effect: examining the role of retrieval practice quizzing - Chemistry Education Research and Practice (RSC Publishing)
 - Investigating first-year undergraduate chemistry students' reasoning with reaction coordinate diagrams when choosing among particulate-level reaction mechanisms Molly B. Atkinson, Michael Croisant and Stacey Lowery Bretz, Chem. Educ. Res. Pract., 2021
 - Investigating high school chemistry teachers' assessment item generation processes for a solubility lab - Chemistry Education Research and Practice (RSC Publishing)

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 - Linking the submicroscopic and symbolic level in physical chemistry: how voluntary simulation-based learning activities foster first-year university students' conceptual understanding - Chemistry Education Research and Practice (RSC Publishing)
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