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.

2024

- Journal of Chemical Education | Vol 101, No 1
    - …

2023

- Journal of Chemical Education | Vol 100, No 11
    - How Effective are Indicators for Individuals with Color Vision Deficiency? | Journal of Chemical Education
- Journal of Chemical Education - Vol 100, No 10
    - Working Together: Chemical Safety and Education
    - ChatGPT Needs a Chemistry Tutor Too
    - Systems Thinking in Chemistry and Chemical Education: A Framework for Meaningful Conceptual Learning and Competence in Chemistry
    - Introductory Organic Chemistry (First-Semester) for Blind and Visually Impaired Students: Practical Lessons and Experiences
    - Lighting Up for Learning─Fluorescence Analysis of Microplastic Particles by Secondary School Students Using Nile Red
    - Quantifying the Dynamics of the Candy Cola Soda Geyser Using a Simple and Inexpensive Protocol
- Journal of Chemical Education - Vol 100, No 9
    - Statistical Analysis in a Longitudinal Study of the Implementation of Process Oriented Guided Inquiry Learning at Norwich University
    - Development and Use of Flowchart for Preservice Chemistry Teachers' Problem Solving on the First Law of Thermodynamics
    - Development, Implementation, and Evaluation of a Pre-service Chemistry Teacher Preparation Unit on Fostering Pedagogical Scientific Language Knowledge
    - Introduction of Formative Assessment Classroom Techniques (FACTs) to School Chemistry Teaching: Teachers' Attitudes, Beliefs, and Experiences
    - A Modern Twist on an Old Measurement: Using Laboratory Automation and Data Science to Determine the Solubility Product of Lead Iodide
    - The Effectiveness of the Competence Approach in the Training of Chemistry Teachers
    - Experiences with Student Projects Focusing on Chemistry Shows in Undergraduate Chemistry Teacher Education
    - Eutectics in Pharmacy Curriculum: A Simple Demonstration with Pharmaceutical Relevance
    - Mobile App to Quantify pH Strips and Monitor Titrations: Smartphone-Aided Chemical Education and Classroom Demonstrations

- Journal of Chemical Education - Vol 100, No 8
  - More than Marshmallows: Implementation and Assessment of an Interactive In-Class Activity for Learning VSEPR Theory
  - A Review of Research on the Quality and Use of Chemistry Textbooks
  - Design and Conduct of Lab@Home Chemistry Experiment: The Effect of Strong Acid and Base on Buffered and Unbuffered Systems
  - Quantitative Assessment on the Effectiveness of a Formal Charge Method for Constructing Lewis (Electron Dot) Structures
  - “Atomizados”: An Educational Game for Learning Atomic Structure. A Case Study with Grade-9 Students with Difficulties Learning Chemistry
- Journal of Chemical Education - Vol 100, No 7
- Journal of Chemical Education - Vol 100, No 6
- Journal of Chemical Education - Vol 100, No 5
- Journal of Chemical Education - Vol 100, No 4
- Journal of Chemical Education - Vol 100, No 3
  - Proposal for a Didactic Tool on Teaching Practices Related to the Selective Sorting of Plastic Waste According to Relative Density in High Schools: Case Study in Burkina Faso
  - Computer-Aided Drug Design Project for Introductory High School Students **intérêt pharmaceutique**
  - Interlocking Toy Bricks Help Nursing Students “Handle” Valence Electrons, Molarity, Solubility, and More!
  - Chem’Sc@pe: an Organic Chemistry Learning Digital Escape Game
  - A Simple and Inexpensive Invisible Ink System Based on Red Cabbage Extracts
- Journal of Chemical Education - Vol 100, No 2
  - A Low-Cost Dual-Beam Smartphone Visible Spectrometer
  - A Simple At-Home Titration: Quantifying Citric Acid in Lemon Juice with Baking Soda and Mentos
  - An Alternative Experimental Procedure to Determine the Solubility of Potassium Nitrate in Water with Automatic Data Acquisition Using Arduino for Secondary School: Development and Validation with Pre-Service Chemistry Teachers
  - Step by Step to Make Augmented Reality Filters for Molecular Models
  - BasePairPuzzle: Molecular Models for Manipulating the Concept of Hydrogen Bonds and Base Pairs in Nucleic Acids
  - Periodic Table of Ladder: A Board Game to Study the Characteristics of Group 1, Group 17, Group 18, and the Transition Elements
  - Will It Rust? A Set of Simple Demonstrations Illustrating Iron Corrosion Prevention Strategies at Sea
- Journal of Chemical Education | Vol 100, No 1
  - Didactic Reasoning about Using Chemicals in Teaching Upper Secondary Chemistry
  - Educational Metal–Air Battery
  - An Experiment of Chemistry with Historical Context: 18th-Century Potash Production in Brazil
  - ChemEscape: Redox and Thermodynamics─Puzzling Out Key Concepts in General Chemistry

2022

- Journal of Chemical Education | Vol 99, No 12
  - Inquiry-Based Laboratories for Students to Investigate the Concepts of Acid–Base Titration, pKa, Equivalence Points, and Molar Absorption Coefficients

  - Encouraging Student Engagement by Using a POGIL Framework for a Gas-Phase IR Physical Chemistry Laboratory Experiment
  - The Hydrogen Atom Spectrum: Experimental Analysis Using Iterative Model Building
- Journal of Chemical Education | Vol 99, No 11
  - Newly Designed Laboratory Course for Preservice Chemistry Teachers: Do the Students Rate Their Practical Skills As Relevant for Their Future Profession?
  - Introducing the Role of Metals in Biology to High School Students
  - Organic Connections: A Chemical Jigsaw Puzzle for Learning Structural Formulas
- Journal of Chemical Education | Vol 99, No 10
  - How Can Socio-scientific Issues Help Develop Critical Thinking in Chemistry Education? A Reflection on the Problem of Plastics
  - “MasterChemist”: A Novel Strategy for Reviewing Stoichiometry and Introducing Molecular Gastronomy to Chemistry Students
  - “The Masked Scientist”: Designing a Virtual Chemical Escape Room | Journal of Chemical Education
  - A Simple Chemical Oscillator: The “Educator”
  - A Low-Cost and Simple Demonstration of Freezing Point Depression and Colligative Properties with Common Salts and Ice Cream
  - Electrochromic Device Demonstrator from Household Materials
  - Using Jupyter Tools to Design an Interactive Textbook to Guide Undergraduate Research in Materials Informatics
- Journal of Chemical Education | Vol 99, No 9
  - Knowledge, Attitude, and Practice of Teachers and Laboratory Technicians toward Chemistry Laboratory Safety in Secondary Schools
  - Chemistry Teachers’ Self-Efficacy Perception Scale for Teaching in Chemistry Laboratories
  - STR120: A Web-Based Board Game for Aiding Students in Review of the Structural Theory of Organic Compounds
- Journal of Chemical Education | Vol 99, No 8
  - When All You Have Is a Covalent Model of Bonding, Every Substance Is a Molecule: A Longitudinal Study of Student Enactment of Covalent and Ionic Bonding Models
  - Independent at-Home Chemistry Project for a High School Student: Osmosis Experiments Using a U-Tube Apparatus
  - Improving the Understanding of Chemistry by Using the Right Words: A Clear-Cut Strategy to Avoid Misconceptions When Talking about Elements, Atoms, and Molecules
  - Visualizing Solutions of the One-Dimensional Schrödinger Equation Using a Finite Difference Method
- Journal of Chemical Education | Vol 99, No 7
  - Inconsistent Language Use in Online Resources Explaining the Mole Has Implications for Students’ Understanding
  - A Review of Research on the Teaching and Learning of Chemical Bonding
  - Microcomputer-Based Laboratory Role in Developing Students’ Conceptual Understanding in Chemistry: Case of Acid–Base Titration
  - Why Is There a Red Line? A High School Experiment to Model the Role of Gold Nanoparticles in Lateral Flow Assays for COVID-19
  - Integrating Python into a Physical Chemistry Lab
  - Investigating Student Engagement in General Chemistry Active Learning Activities using the Activity Engagement Survey (AcES)
  - Thermodynamics of Wettability: A Physical Chemistry Laboratory Experiment
  - Embedded Questions and Targeted Feedback Transform Passive Educational Videos into Effective Active Learning Tools

  - Harry Potter Themed Digital Escape Room for Addressing Misconceptions in Stoichiometry
  - A Simple, Facile Demonstration of Copper and Nitric Acid Reaction
  - An Alternative to the Flame Test: Using Inexpensive Tesla Coils to Produce the Emission Spectra of Metal Salts
- Journal of Chemical Education | Vol 99, No 6
  - A Sweet Introduction to the Mathematical Analysis of Time-Resolved Spectra and Complex Kinetic Mechanisms: The Chameleon Reaction Revisited
  - The Chemical Wonders of No-Mess Markers
  - Titrating Consumer Acids to Uncover Student Understanding: A Laboratory Investigation Leading to Data-Driven Instructional Interventions
  - Development of a Microscope Stage with Light-Emitting Diodes to Upgrade a Traditional Microscope to a Fluorescence Microscope
- Journal of Chemical Education | Vol 99, No 5
  - Anesthesia as a Theme for Context-Based Learning in a Physical Chemistry Short Course (pharma ?)
  - Virtually Bridging the Safety Gap between the Lecture Hall and the Research Laboratory
  - Invention as a Complement to High School Chemistry
  - Rising Atmospheric Carbon Dioxide Could Doom Ocean Corals and Shellfish: Simple Thermodynamic Calculations Show Why
  - Simulation Game Illustrating the Density–Le Châtelier Effect on a Chemical Equilibrium of the Type $A \rightleftharpoons 2B$
  - An Inexpensive 3D Printed Periscope-Type Smartphone-Based Spectrophotometer for Emission, Absorption, and Fluorescence Spectrometry
  - Impact of Ocean Acidification on Shelled Organisms: Supporting Integration of Chemistry and Biology Knowledge through Multidisciplinary Activities
  - WERNER: A Card Game for Reinforcement Learning of Inorganic Chemistry Nomenclature
- Journal of Chemical Education | Vol 99, No 4
  - Graphical Application to Assist Students Understand the Basic Concepts in Acid–Base Titrations
  - Calculating the pH of a Strong Acid or a Strong Base Before and After Instruction in General and Analytical Chemistry
  - Exploring the Viability and Role of Virtual Laboratories in Chemistry Education Using Two Original Modules
  - Designing Virtual Laboratory Exercises Using Microsoft Forms
  - Creating Representation in Support of Chemical Reasoning to Connect Macroscopic and Submicroscopic Domains of Knowledge
- Journal of Chemical Education | Vol 99, No 3
  - Gamified Virtual Laboratory Experience for In-Person and Distance Students
  - The Case Study Method in Chemistry Teaching: A Systematic Review
  - Compounds and Molecules: Learning How to Distinguish Them through an Educational Game
  - Does Virtual Titration Experiment Meet Students' Expectation? Inside Out from Indian Context
  - Future of the Flipped Classroom in Chemistry Education: Recognizing the Value of Independent Preclass Learning and Promoting Deeper Understanding of Chemical Ways of Thinking During In-Person Instruction
- Journal of Chemical Education | Vol 99, No 2
  - Using the Recycled Parts of a Computer DVD Drive for Fabrication of a Low-Cost Arduino-Based Syringe Pump
  - New Software Application and Case Study That Simplify Teaching Complex Chemical Solubility and Equilibria

    - Mobile Augmented Reality Laboratory for Learning Acid–Base Titration
    - The Open-Response Chemistry Cognitive Assistance Tutor System: Development and Implementation
    - Implementation of Inquiry-Based Science in the Classroom and Its Repercussion on the Motivation to Learn Chemistry
    - Using the Schoolyard as a Setting for Learning Chemistry: A Sociocultural Analysis of Pre-service Teachers' Talk about Redox Chemistry
    - Assessment of Practical and Scientific Writing Skills for Pre-University Students through Project-Based Learning
    - Animated Electrochemistry Simulation Modules
    - Virtual Reality Assisted General Education of Nuclear Chemistry and Radiochemistry
    - Digital Tool for the Analysis of UV–Vis Spectra of Olive Oils and Educational Activities with High School and Undergraduate Students
    - LabPi: A Digital Measuring Station for STEM Education 4.0
    - Adsorption of Additives in Cola Beverages: A Safe and Improved Experiment Exploring Beer's Law and Adsorption Process
    - Thirst for a Solution: Alginate Biopolymer Experiments for the Middle and High School Classroom
    - CHEMTrans: Playing an Interactive Board Game of Chemical Reaction Aeroplane Chess
    - At-Home Microscale Paper-Based Quantitative Analysis Activity with External Standards
    - Chemist Bot as a Helpful Personal Online Training Tool for the Final Chemistry Examination
    - The Thalidomide Mystery: A Digital Escape Room Using Genially and WhatsApp for High School Students
- 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 Sevian, 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, Kc
    - 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 ΔHvap 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

- décembre
  - 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
- septembre
   - Development of the Enthalpy and Entropy in Dissolution and Precipitation Inventory Timothy N. Abell, Stacey Lowery Bretz, J. Chem. Educ.2019, 96(9), 1804-1812, DOI: 10.1021/acs.jchemed.9b00186
   - Drawing for Assessing Learning Outcomes in Chemistry Stephanie A. C. Ryan, Mike Stieff, J. Chem. Educ. 2019, 96(9), 1813-1820 DOI: 10.1021/acs.jchemed.9b00361
   - Investigating Student Understanding of London Dispersion Forces: A Longitudinal Study Keenan Noyes, Melanie M. Cooper, J. Chem. Educ. 2019, 96(9), 1821-1832 DOI: 10.1021/acs.jchemed.9b00455
   - Michaelis–Menten Graphs, Lineweaver–Burk Plots, and Reaction Schemes: Investigating Introductory Biochemistry Students' Conceptions of Representations in Enzyme Kinetics Jon-Marc G. Rodriguez, Nicholas P. Hux, Sven J. Philips, Marcy H. Towns, J. Chem. Educ. 2019, 96(9), 1833-1845 DOI: 10.1021/acs.jchemed.9b00396
   - Organic Chemistry, Life, the Universe and Everything (OCLUE): A Transformed Organic Chemistry Curriculum Melanie M. Cooper, Ryan L. Stowe, Olivia M. Crandell, Michael W. Klymkowsky, J. Chem. Educ. 2019, 96(9), 1858-1872 DOI: 10.1021/acs.jchemed.9b00401
   - Introducing Students to Fundamental Chemistry Concepts and Basic Research through a Chemistry of Fashion Course for Nonscience Majors Karen A. Tallman, J. Chem. Educ. 2019, 96(9), 1906-1913 DOI: 10.1021/acs.jchemed.8b00826
   - Rumford's Experimental Challenge to Caloric Theory: "Big Science" 18th-Century Style

with Important Results for Chemistry and Physics Frederic E. Schubert, J. Chem. Educ. 2019, 96(9), 1955-1960 DOI: 10.1021/acs.jchemed.9b00039
    - Chemical Exploration with Virtual Reality in Organic Teaching Laboratories Jonathon B. Ferrell, Joseph P. Campbell, Dillon R. McCarthy, Kyle T. McKay, Magenta Hensinger, Ramya Srinivasan, Xiaochuan Zhao, Alexander Wurthmann, Jianing Li, Severin T. Schneebeli, J. Chem. Educ. 2019, 96(9), 1961-1966 DOI: 10.1021/acs.jchemed.9b00036
    - Custom-Printed 3D Models for Teaching Molecular Symmetry Brian K. Niece, J. Chem. Educ. 2019, 96(9), 2059-2062 DOI: 10.1021/acs.jchemed.9b00053
- Août
    - Metacognitive Training in Chemistry Tutor Sessions Increases First Year Students' Self-Efficacy Kate J. Graham, Catherine M. Bohn-Gettler, Annette F. Raigoza, J. Chem. Educ. 2019, 96(8), 1539-1547 DOI: 10.1021/acs.jchemed.9b00170
    - Investigating Student Understanding of Rate Constants: When is a Constant "Constant"? Kinsey Bain, Jon-Marc G. Rodriguez, Marcy H. Towns, J. Chem. Educ. 2019, 96(8), 1571-1577 DOI: 10.1021/acs.jchemed.9b00005
    - Polymers, Giant Molecules with Properties: An Entertaining Activity Introducing Polymers to Young Students Nejla B. Erdal, Minna Hakkarainen, Anders G. Blomqvist, J. Chem. Educ. 2019, 96(8), 1691-1695 DOI: 10.1021/acs.jchemed.8b00918
    - Polymer Processing Demonstrations Using PET Bottles Alfredo Luis M. L. Mateus, J. Chem. Educ. 2019, 96(8), 1696-1700 DOI: 10.1021/acs.jchemed.8b00890
    - An Acid–Base Battery with Oxygen Electrodes: A Laboratory Demonstration of Electrochemical Power Sources Guo-Ming Weng, Chi-Ying Vanessa Li, Kwong-Yu Chan, J. Chem. Educ. 2019, 96(8), 1701-1706, DOI: 10.1021/acs.jchemed.8b00901
    - Implementation of an Accessible Gas Chromatography Laboratory Experiment for High School Students Gannon P. Connor, Daniel Kim, Alexandra L. Nagelski, Emily O. Schmidt, Tori Hass-Mitchell, John T. Atwater, Sara A. Tridenti, Seungjung Sohn, Patrick L. Holland, J. Chem. Educ. 2019, 96(8), 1707-1713 DOI: 10.1021/acs.jchemed.8b00789
    - Bringing Nuance to Automated Exam and Classroom Response System Grading: A Tool for Rapid, Flexible, and Scalable Partial-Credit Scoring Tom P. Carberry, Philip S. Lukeman, Dustin J. Covell, J. Chem. Educ. 2019, 96(8), 1767-1772 DOI: 10.1021/acs.jchemed.8b01004
    - Simple and Economical Procedure To Assemble pH Glass Membrane Electrodes Used in Chemical Education Fang Yong, Qiuhong Zhu, Guohao Zhang, Guohong Tao, Song Qin, J. Chem. Educ. 2019, 96(8), 1773-1777 DOI: 10.1021/acs.jchemed.9b00254
- juillet
    - Improving Learning Outcomes in Secondary Chemistry with Visualization-Supported Inquiry Activities Mike Stieff, J. Chem. Educ. 2019, 96 (7), pp 1300-1307 DOI: 10.1021/acs.jchemed.9b00205
    - Applying the Next Generation Science Standards to Current Chemistry Classrooms: How Lessons Measure Up and How to Respond Natalia M. Kellamis, Ellen J. Yezierski, J. Chem. Educ., 2019, 96 (7), pp 1308-1317 DOI: 10.1021/acs.jchemed.8b00840
    - The Impact of Core-Idea Centered Instruction on High School Students' Understanding of Structure–Property Relationships Ryan L. Stowe, Deborah G. Herrington, Robert L. McKay, Melanie M. Cooper, J. Chem. Educ., 2019, 96 (7), pp 1327-1340 DOI: 10.1021/acs.jchemed.9b00111
    - Reconstructing a School Chemistry Curriculum in the Era of Core Competencies: A Case from China Bing Wei, J. Chem. Educ., 2019, 96 (7), pp 1359-1366 DOI: 10.1021/acs.jchemed.9b00211
    - Periodic Universe: A Teaching Model for Understanding the Periodic Table of the Elements Matthias Bierenstiel, Kathy Snow, J. Chem. Educ., 2019, 96 (7), pp 1367-1376 DOI: 10.1021/acs.jchemed.8b00740

  - Making Science Accessible to Students with Visual Impairments: Insulation-Materials Investigation Aydin Kizilaslan, Mustafa Sozbilir, Seraceddin Levent Zorluoglu, J. Chem. Educ., 2019, 96 (7), pp 1383-1388 DOI: 10.1021/acs.jchemed.8b00772
  - Systematic Procedure for Drawing Lewis Structures Based on Electron Pairing Priority and the Explicit Use of Donor Bonds: An Alternative to the Normal Procedure Which Can Be Pen and Paper Based or Automated on a PC in User Interactive 3D Patrick McArdle, J. Chem. Educ., 2019, 96 (7), pp 1412-1417 DOI: 10.1021/acs.jchemed.8b00868
  - Chemistry Toy 1: An Approach to Quantify and Improve the Power of Scientific Observation Matthew F. Terra, Shaun D. Black, J. Chem. Educ., 2019, 96 (7), pp 1431-1437 DOI: 10.1021/acs.jchemed.8b00480
  - Scrambled Eggs or How Eggshells Become Phosphates Diana Potes Vecini, Shirley C. Jofré, Florencia B. Pereyra Ríos, Javier Sartuqui, Paula Messina, M. Belén González, Melisa Saugo, Lorena Meier, Mónica F. Díaz, Andrés E. Ciolino, J. Chem. Educ., 2019, 96 (7), pp 1443-1448 DOI: 10.1021/acs.jchemed.8b00451
  - Rethinking a Timeless Titration Experimental Setup through Automation and Open-Source Robotic Technology: Making Titration Accessible for Students of All Abilities Ronald Soong, Kyle Agmata Tina Doyle, Amy Jenne, Antonio Adamo, Andre J. Simpson, J. Chem. Educ., 2019, 96 (7), pp 1497-1501 DOI: 10.1021/acs.jchemed.9b00025
  - Simple Glowmatography: Chromatographic Separation of Glow-Stick Dyes Using Chalk Thomas S. Kuntzleman, Kasey R. Bunker, Ashlee A. Bartlett, J. Chem. Educ., 2019, 96 (7), pp 1506-1509 DOI: 10.1021/acs.jchemed.8b00237
  - Jigsaw: Using Cooperative Learning in Teaching Organic Functions Brenno R. M. Oliveira, André L. Vailati, Edinara Luiz, Fabrine G. Böll, Samuel R. Mendes, J. Chem. Educ., 2019, 96 (7), pp 1515-1518 DOI: 10.1021/acs.jchemed.8b00765
  - Quantitative Analysis Using a Flatbed Scanner: Aspirin Quantification in Pharmaceutical Tablets Rodrigo Sens da Silva, Endler Marcel Borges,J. Chem. Educ., 2019, 96 (7), pp 1519-1526 DOI: 1021/acs.jchemed.8b00620
  - A 3D-Printable Dual Beam Spectrophotometer with Multiplatform Smartphone Adaptor Ryan Bogucki, Mary Greggila, Paul Mallory, Jiansheng Feng, Kelly Siman, Banafsheh Khakipoor, Hunter King, Adam W. Smith, J. Chem. Educ., 2019, 96 (7), pp 1527-1531 DOI: 10.1021/acs.jchemed.8b00870
- juin
  - Introductory Chemistry Using the “Flipped” Environment: An Update Norbert J. Pienta, J. Chem. Educ., 2019, 96 (6), pp 1053-1054 DOI: 10.1021/acs.jchemed.9b00458
  - The Evaluation of a Hybrid, General Chemistry Laboratory Curriculum: Impact on Students’ Cognitive, Affective, and Psychomotor Learning Kory M. Enneking, Graham R. Breitenstein, Amelia F. Coleman, James H. Reeves, Yishi Wang, Nathaniel P. Grove, J. Chem. Educ., 2019, 96 (6), pp 1058-1067 DOI: 10.1021/acs.jchemed.8b00637
  - Simplified Low-Cost Colorimetry for Education and Public Engagement J. O’Donoghue, J. Chem. Educ., 2019, 96 (6), pp 1136-1142 DOI: 10.1021/acs.jchemed.9b00301
  - Accurate, Photoresistor-Based, Student-Built Photometer and Its Application to the Forensic Analysis of Dyes Anna L. Adams-McNichol, Rayf C. Shiell, David A. Ellis, J. Chem. Educ., 2019, 96 (6), pp 1143-1151 DOI: 10.1021/acs.jchemed.8b00862
  - Electrochemistry with Simple Materials to Create Designs and Write Messages Thomas S. Kuntzleman, J. Chem. Educ., 2019, 96 (6), pp 1178-1181 DOI: 10.1021/acs.jchemed.9b00012
  - STEM Activities in Determining Stoichiometric Mole Ratios for Secondary-School Chemistry Teaching Patcharee Chonkaew, Boonnak Sukhummek, Chatree Faikhamta, J. Chem. Educ., 2019, 96 (6), pp 1182-1186 DOI: 10.1021/acs.jchemed.8b00985
  - BYOL: Bring Your Own Lime Hands-On Laboratory Experience Mikhail Kurushkin, Chantal

Tracey, Maria Mikhaylenko, J. Chem. Educ., 2019, 96 (6), pp 1283-1286 DOI: 10.1021/acs.jchemed.8b00966

- mai
    - Visualizing Dissolution, Ion Mobility, and Precipitation through a Low-Cost, Rapid-Reaction Activity Introducing Microscale Precipitation Chemistry Bob Worley, Eric M. Villa, Jess M. Gunn, and Bruce Mattson, J. Chem. Educ., 2019, 96 (5), pp 951–954 DOI: 10.1021/acs.jchemed.8b00563
    - A Lab-Based Chemical Escape Room: Educational, Mobile, and Fun! Ran Peleg, Malka Yayon, Dvora Katchevich, Mor Moria-Shipony, and Ron Blonder, J. Chem. Educ., 2019, 96 (5), pp 955–960 DOI: 10.1021/acs.jchemed.8b00406
    - Development and Production of Interactive Videos for Teaching Chemical Techniques during Laboratory Sessions Sarah L. Cresswell, Wendy A. Loughlin, Mark J. Coster, and David M. Green, J. Chem. Educ., 2019, 96 (5), pp 1033–1036 DOI: 10.1021/acs.jchemed.8b00647
- avril
    - What Chemistry Teachers Should Know about the Revised International System of Units (Système International) Carmen J. Giunta, J. Chem. Educ., 2019, 96 (4), pp 613–617 DOI: 10.1021/acs.jchemed.8b00707
    - Introduction to Laboratory Safety for Graduate Students: An Active-Learning Endeavor David J. Hill, Olivia F. Williams, Danianne P. Mizzy, Therese F. Triumph, Catherine R. Brennan, Dawn C. Mason, and David S. Lawrence, J. Chem. Educ., 2019, 96 (4), pp 652–659 DOI: 10.1021/acs.jchemed.8b00774
    - Addressing Misconceptions Related to Mass–Matter Conservation and Bond Energetics with a Modified Gauss Accelerator Robert G. Gullion, Terry Gullion, Michelle Richards-Babb, and Mark Schraf, J. Chem. Educ., 2019, 96 (4), pp 734–738 DOI: 10.1021/acs.jchemed.8b00697
    - KinSim: A Research-Grade, User-Friendly, Visual Kinetics Simulator for Chemical-Kinetics and Environmental-Chemistry Teaching Zhe Peng and Jose L. Jimenez, J. Chem. Educ., 2019, 96 (4), pp 806–811 DOI: 10.1021/acs.jchemed.9b00033
    - Clock Reaction Revisited: Catalyzed Redox Substrate-Depletive Reactions Taweetham Limpanuparb, Chattarin Ruchawapol, and Dulyarat Sathainthammanee, J. Chem. Educ., 2019, 96 (4), pp 812–818 DOI: 10.1021/acs.jchemed.8b00547
- mars
    - Supporting the Growth and Impact of the Chemistry-Education-Research Community Deborah G. Herrington, Ryan D. Sweeder, Patrick L. Daubenmire, Christopher F. Bauer, Stacey Lowery Bretz, Diane M. Bunce, Justin H. Carmel, Renée Cole, Brittland K. DeKorver, Resa M. Kelly, Scott E. Lewis, Maria Oliver-Hoyo, Stephanie A. C. Ryan, Marilyne Stains, Marcy H. Towns, and Ellen J. Yezierski J. Chem. Educ., 2019, 96 (3), pp 393–397 ASAP DOI: 10.1021/acs.jchemed.8b00823 Publication Date (Web): February 8, 2019
    - Undergraduate Chemistry Students' Conceptualization of Models in General Chemistry Katherine Lazenby, Charlie A. Rupp, Alexandra Brandriet, Kathryn Mauger-Sonnek, and Nicole M. Becker, J. Chem. Educ., 2019, 96 (3), pp 455–468 DOI: 10.1021/acs.jchemed.8b00813
    - Macroscopic Observations of Dissolving, Insolubility, and Precipitation: General Chemistry and Physical Chemistry Students' Ideas about Entropy Changes and Spontaneity Timothy N. Abell and Stacey Lowery Bretz, J. Chem. Educ., 2019, 96 (3), pp 469–478 DOI: 10.1021/acs.jchemed.8b01007
    - Is this Solution Pink Enough? A Smartphone Tutor to Resolve the Eternal Question in Phenolphthalein-Based Titration Balraj B. Rathod, Sahana Murthy, and Subhajit Bandyopadhyay, J. Chem. Educ., 2019, 96 (3), pp 486–494 DOI: 10.1021/acs.jchemed.8b00708

    - Introducing Electron Probability Density to High School Students Using a Spiral Drawing Toy Mikhail Kurushkin and Chantal Tracey, J. Chem. Educ., 2019, 96 (3), pp 500–502 DOI: 10.1021/acs.jchemed.8b00391
- février
    - Evidence for the Importance of Laboratory Courses, editorial : Stacey Lowery Bretz, J. Chem. Educ., 2019, 96 (2), pp 193–195 DOI: 10.1021/acs.jchemed.8b00874
    - Characterizing Peer Review Comments and Revision from a Writing-to-Learn Assignment Focused on Lewis Structures S. A. Finkenstaedt-Quinn, E. P. Snyder-White, M. C. Connor, A. Ruggles Gere, and G. V. Shultz, J. Chem. Educ., 2019, 96 (2), pp 227–237 DOI: 10.1021/acs.jchemed.8b00711
    - Form versus Function: A Comparison of Lewis Structure Drawing Tools and the Extraneous Cognitive Load They Induce Patrick L. Duffy, Kory M. Enneking, Tyler W. Gampp, Khatijah Amir Hakim, Amelia F. Coleman, Krista V. Laforest, Dylan M. Paulson, Erik T. Paulson, Justin D. Shepard, Jessica M. Tiettmeyer†, Kristina M. Mazzarone‖, and Nathaniel P. Grove, J. Chem. Educ., 2019, 96 (2), pp 238–247 DOI: 10.1021/acs.jchemed.8b00574
    - Escape ClassRoom: Can You Solve a Crime Using the Analytical Process? Marta Ferreiro-González, Antonio Amores-Arrocha, Estrella Espada-Bellido, María José Aliaño-Gonzalez, Mercedes Vázquez-Espinosa, Ana V. González-de-Peredo, Pau Sancho-Galán, José Ángel Álvarez-Saura, Gerardo F. Barbero , and Cristina Cejudo-Bastante, J. Chem. Educ., 2019, 96 (2), pp 267–273 DOI: 10.1021/acs.jchemed.8b00601
    - Exploring Acid–Base Chemistry by Making and Monitoring Red-Cabbage Sauerkraut: A Fresh Twist on the Classic Cabbage-Indicator Experiment, Jacqueline L. Linder, Sumeja Aljic, Hamzah M. Shroof, Zachary B. Di Giusto, James M. Franklin, Shane Keaney, Christopher P. Le, Olivia K. George, Andrew M. Castaneda, Lloyd S. Fisher, Virginia A. Young, and Adam M. Kiefer, J. Chem. Educ., 2019, 96 (2), pp 304–307 DOI: 10.1021/acs.jchemed.8b00767
    - Applying Chemistry Knowledge to Code, Construct, and Demonstrate an Arduino–Carbon Dioxide Fountain Seong-Joo Kang , Hye-Won Yeo, and Jihyun Yoon, J. Chem. Educ., 2019, 96 (2), pp 313–316 DOI: 10.1021/acs.jchemed.8b00663
    - Multidisciplinary Learning: Redox Chemistry and Pigment History Marcie B. Wiggins, Emma Heath, and Jocelyn Alcántara-García, J. Chem. Educ., 2019, 96 (2), pp 317–322 DOI: 10.1021/acs.jchemed.8b00358
    - Detecting Microplastics in Soil and Sediment in an Undergraduate Environmental Chemistry Laboratory Experiment That Promotes Skill Building and Encourages Environmental Awareness Laura Rowe, Maria Kubalewski, Robert Clark, Emily Statza, Thomas Goyne, Katie Leach, and Julie Peller, J. Chem. Educ., 2019, 96 (2), pp 323–328 DOI: 10.1021/acs.jchemed.8b00392
    - Listening to pH Samuel C. Costa and Julio C. B. Fernandes, J. Chem. Educ., 2019, 96 (2), pp 372–376 DOI: 10.1021/acs.jchemed.8b00641
    - Measuring CO2 with an Arduino: Creating a Low-Cost, Pocket-Sized Device with Flexible Applications That Yields Benefits for Students and Schools Hernan Pino, Vanesa Pastor, Carme Grimalt-Álvaro, and Víctor López, J. Chem. Educ., 2019, 96 (2), pp 377–381 DOI: 10.1021/acs.jchemed.8b00473
    - A Digital Periodic Table That Instructors Can Use in the Classroom To Highlight Elements and Illustrate Periodic Trends Matthew E. Lopper, J. Chem. Educ., 2019, 96 (2), pp 387–389 DOI: 10.1021/acs.jchemed.8b00616
- janvier
    - Chemistry Unbound: Designing a New Four-Year Undergraduate Curriculum Tracy L. McGill, Leah C. Williams, Douglas R. Mulford, Simon B. Blakey, Robert J. Harris, James T. Kindt, David G. Lynn, Patricia A. Marsteller, Frank E. McDonald, and Nichole L. Powell, J.

Chem. Educ., 2019, 96 (1), pp 35–46 DOI: 10.1021/acs.jchemed.8b00585 (open access article)
  - VSEPR-Plus: Correct Molecular and Electronic Structures Can Lead to Better Student Conceptual Models Brian J. Esselman and Stephen B. Block, J. Chem. Educ., 2019, 96 (1), pp 75–81 DOI: 10.1021/acs.jchemed.8b00316
  - Teaching Boyle's Law and Charles' Law through Experiments that Use Novel, Inexpensive Equipment Yielding Accurate Results Taweetham Limpanuparb, Siradanai Kanithasevi, Maytouch Lojanarungsiri, and Puh Pakwilaikiat, J. Chem. Educ., 2019, 96 (1), pp 169–174 DOI: 10.1021/acs.jchemed.8b00460

2018

- décembre
  - College Students Teaching Chemistry through Outreach: Conceptual Understanding of the Elephant Toothpaste Reaction and Making Liquid Nitrogen Ice Cream Justin M. Pratt and Ellen J. Yezierski, , J. Chem. Educ., 2018, 95 (12), pp 2091–2102 DOI: 10.1021/acs.jchemed.8b00688
  - Using Symbolic and Graphical Forms To Analyze Students' Mathematical Reasoning in Chemical Kinetics Jon-Marc G. Rodriguez, Stephanie Santos-Diaz, Kinsey Bain, and Marcy H. Towns, J. Chem. Educ., 2018, 95 (12), pp 2114–2125 DOI: 10.1021/acs.jchemed.8b00584
  - A Nonlinear, "Sticky" Web of Study for Chemistry: A Graphical Curricular Tool for Teaching and Learning Chemistry Built upon the Interconnection of Core Chemical Principles James D. Martin and Katherine A. Nock, J. Chem. Educ., 2018, 95 (12), pp 2134–2140 DOI: 10.1021/acs.jchemed.7b00878
    - *N.B.* : attention de considérer aussi les critiques à propos de Carol Dweck
- novembre
  - Importance of Understanding Fundamental Chemical Mechanisms Vicente Talanquer, J. Chem. Educ., 2018, 95 (11), pp 1905–1911 DOI: 10.1021/acs.jchemed.8b00508
  - What Prospective Chemistry Teachers Know about Chemistry: An Analysis of Praxis Chemistry Subject Assessment Category Performance Lisa Shah, Jeremy Schneider, Rebekah Fallin, Kimberly Linenberger Cortes, Herman E. Ray, and Gregory T. Rushton, J. Chem. Educ., 2018, 95 (11), pp 1912–1921 DOI: 10.1021/acs.jchemed.8b00365
  - Electronic Laboratory Notebooks Allow for Modifications in a General, Organic, and Biochemistry Chemistry Laboratory To Increase Authenticity of the Student Experience Amber J. Dood, Lisa M. Johnson, and Justin M. Shorb, J. Chem. Educ., 2018, 95 (11), pp 1922–1928 DOI: 10.1021/acs.jchemed.8b00140
  - Investigating NOx Concentrations on an Urban University Campus Using Passive Air Samplers and UV–Vis Spectroscopy Cole M. Crosby, Richard A. Maldonado, Ahyun Hong, Ryan L. Caylor, Kristine L. Kuhn, and Matthew E. Wise, J. Chem. Educ., 2018, 95 (11), pp 2023–2027 DOI: 10.1021/acs.jchemed.8b00175
- octobre
  - Adapting to the Large-Scale Advanced Placement Chemistry Reform: An Examination of Teachers' Challenges and Instructional Practices Christian Fischer, Arthur Eisenkraft, Barry Fishman, Nicolas Hübner, and Frances Lawrenz, J. Chem. Educ., 2018, 95 (10), pp 1701–1710 DOI: 10.1021/acs.jchemed.8b00151
  - Impact of an Atoms-First Approach on Student Outcomes in a Two-Semester General Chemistry Course George Chitiyo, Darek W. Potter, and Chad E. Rezsnyak, J. Chem. Educ., 2018, 95 (10), pp 1711–1716 DOI: 10.1021/acs.jchemed.8b00195
  - Chemistry Demonstrations and Visual Attention: Does the Setup Matter? Evidence from a

    - Double-Blinded Eye-Tracking Study Andreas Nehring and Sebastian Busch, J. Chem. Educ., 2018, 95 (10), pp 1724–1735 DOI: 10.1021/acs.jchemed.8b00133
    - Playing with Fire: Chemical Safety Expertise Required Samuella B. Sigmann, J. Chem. Educ., 2018, 95 (10), pp 1736–1746 DOI: 10.1021/acs.jchemed.8b00152
    - From Water to H2O: Using the Human Dimension of Science To Teach the Nature of Science José Luis Aparicio and María P. Elizalde, J. Chem. Educ., 2018, 95 (10), pp 1763–1770 DOI: 10.1021/acs.jchemed.8b00060
    - Incorporating Stories of Sedatives, Spoiled Sweet Clover Hay, and Plants from the Amazon Rainforest into a Pharmaceutical Chemistry Course To Engage Students and Introduce Drug Design Strategies Eneko Larrañeta, J. Chem. Educ., 2018, 95 (10), pp 1778–1786 DOI: 10.1021/acs.jchemed.8b00063
    - How Batteries Store and Release Energy: Explaining Basic Electrochemistry Klaus Schmidt-Rohr, J. Chem. Educ., 2018, 95 (10), pp 1801–1810 DOI: 10.1021/acs.jchemed.8b00479
    - Electromotive Force versus Electrical Potential Difference: Approaching (but Not Yet at) Equilibrium Leandro da Silva Rodrigues, Jones de Andrade, and Luiz H. S. Gasparotto, J. Chem. Educ., 2018, 95 (10), pp 1811–1815 DOI: 10.1021/acs.jchemed.8b00249
    - Buffers in Context: Baby Wipes As a Buffer System Jon-Marc G. Rodriguez, Sarah Hensiek, Jeanne R. Meyer, Cynthia J. Harwood, and Marcy H. Towns, J. Chem. Educ., 2018, 95 (10), pp 1816–1820 DOI: 10.1021/acs.jchemed.8b00378
    - Comparative Analysis of Fuel Composition and Physical Properties of Biodiesel, Diesel, Kerosene, and Jet Fuel Timm A. Knoerzer, Elise M. Hill, Todd A. Davis, Scott T. Iacono, Jane E. Johnson, and Gary J. Balaich, J. Chem. Educ., 2018, 95 (10), pp 1821–1826 DOI: 10.1021/acs.jchemed.8b00216
- septembre
    - Analysis and Identification of Major Organic Acids in Wine and Fruit Juices by Paper Chromatography Dulani Samarasekara, Courtney Hill, and Deb Mlsna, J. Chem. Educ., 2018, 95 (9), pp 1621–1625 DOI: 10.1021/acs.jchemed.8b00129
    - Approximate Relations in pH Calculations for Aqueous Solutions of Extremely Weak Acids: A Topic for Problem-Based Learning Renata Bellová, Danica Melicherčíková, and Peter Tomčík, J. Chem. Educ., 2018, 95 (9), pp 1548–1553 DOI: 10.1021/acs.jchemed.8b00086
    - Demonstrating CO2 Sequestration Using Olivine and Carbonated Beverages with Secondary School Students To Investigate pH and Electrical Conductivity Concepts Johan A. Linthorst and Johanna van der Wal-Veuger, J. Chem. Educ., 2018, 95 (9), pp 1612–1614 DOI: 10.1021/acs.jchemed.7b00680
    - Easy Illustration of Salt Damage in Stone Francesco Caruso, Timothy Wangler, and Robert J. Flatt, J. Chem. Educ., 2018, 95 (9), pp 1615–1620 DOI: 10.1021/acs.jchemed.7b00815
- août
    - Pedagogical Content Knowledge of Chemical Kinetics: Experiment Selection Criteria To Address Students' Intuitive Conceptions Ainoa Marzabal, Virginia Delgado, Patricia Moreira, Lorena Barrientos, and Jeannette Moreno, J. Chem. Educ., 2018, 95 (8), pp 1245–1249 DOI: 10.1021/acs.jchemed.8b00296
    - Whether and How Authentic Contexts Using a Virtual Chemistry Lab Support Learning Jodi L. Davenport, Anna N. Rafferty, and David J. Yaron, J. Chem. Educ., 2018, 95 (8), pp 1250–1259 DOI: 10.1021/acs.jchemed.8b00048
    - Using Writing Assignments as an Intervention to Strengthen Acid–Base Skills Charles T. Cox, Jr., Jennifer Schwartz Poehlmann, Caitlin Ortega, and Julio C. Lopez, J. Chem. Educ., 2018, 95 (8), pp 1276–1283 DOI: 10.1021/acs.jchemed.8b00018
    - Chemistry of Candy: A Sweet Approach to Teaching Nonscience Majors Jennifer Logan Bayline, Halie M. Tucci, David W. Miller, Kaitlin D. Roderick, and Patricia A. Brletic, J.

Chem. Educ., 2018, 95 (8), pp 1307–1315 DOI: 10.1021/acs.jchemed.7b00739
  - Sweet, Sweet Science: Addressing the Gender Gap in STEM Disciplines through a One-Day High School Program in Sugar Chemistry Mindy Levine and Dana J. DiScenza, J. Chem. Educ., 2018, 95 (8), pp 1316–1322 DOI: 10.1021/acs.jchemed.7b00900
  - Writing Prompts Help Improve Expression of Conceptual Understanding in Chemistry Talitha Visser, T. Maaswinkel, F. Coenders, and S. McKenney, J. Chem. Educ., 2018, 95 (8), pp 1331–1335 DOI: 10.1021/acs.jchemed.7b00798
  - Ancient Alchemy in the Classroom: A Honey-Based, Deflagrating Pyrotechnic A. V. Wolfenden, N. L. kilah, J. Chem. Educ., 2018, 95 (8), pp 1350–1353 DOI: 10.1021/acs.jchemed.7b00978
- juillet
  - Identifying the Scope of Safety Issues and Challenges to Safety Management in Swedish Middle School and High School Chemistry Education Linda Schenk, Ivan A. Taher, and Mattias Öberg, J. Chem. Educ., 2018, 95 (7), pp 1132–1139 DOI: 10.1021/acs.jchemed.8b00054
  - Tap It Fast! Playing a Molecular Symmetry Game for Practice and Formative Assessment of Students' Understanding of Symmetry Concepts Ricardo Dagnoni Huelsmann, Andrei Felipe Vailati, Lucas Ribeiro de Laia, Patrícia Salvador Tessaro, and Fernando Roberto Xavier, J. Chem. Educ., 2018, 95 (7), pp 1151–1155 DOI: 10.1021/acs.jchemed.7b00849
  - Cost-Effective Wireless Microcontroller for Internet Connectivity of Open-Source Chemical Devices Conan Mercer and Dónal Leech, J. Chem. Educ., 2018, 95 (7), pp 1221–1225 DOI: 10.1021/acs.jchemed.8b00200
- juin
  - The InChI Code Paul J. Karol, J. Chem. Educ., 2018, 95 (6), pp 911–912 DOI: 10.1021/acs.jchemed.8b00090
  - A Single Reaction Thread Ties Multiple Core Concepts in an Introductory Chemistry Course Meredith H. Barbee, Robert G. Carden, Julia H. R. Johnson, Cameron L. Brown , Dorian A. Canelas, and Stephen L. Craig, J. Chem. Educ., 2018, 95 (6), pp 939–946 DOI: 10.1021/acs.jchemed.7b00977
  - Expanding the Educational Toolset for Chemistry Outreach: Providing a Chemical View of Climate Change through Hands-On Activities and Demonstrations Supplemented with TED-Ed Videos Solaire A. Finkenstaedt-Quinn, Natalie V. Hudson-Smith, Matthew J. Styles, Michael K. Maudal, Adam R. Juelfs, and Christy L. Haynes, J. Chem. Educ., 2018, 95 (6), pp 985–990 DOI: 10.1021/acs.jchemed.7b00948
  - Prediction! The VSEPR Game: Using Cards and Molecular Model Building To Actively Enhance Students' Understanding of Molecular Geometry Erlina, Chris Cane, and Dylan P. Williams, J. Chem. Educ., 2018, 95 (6), pp 991–995 DOI: 10.1021/acs.jchemed.7b00687
  - Escape Classroom: The Leblanc Process—An Educational "Escape Game" Nicolas Dietrich, J. Chem. Educ., 2018, 95 (6), pp 996–999 DOI: 10.1021/acs.jchemed.7b00690
  - Unexpected Discovery: A Guided-Inquiry Experiment on the Reaction Kinetics of Zinc with Sulfuric Acid Martin Rusek, Pavel Beneš, and John Carroll, J. Chem. Educ., 2018, 95 (6), pp 1018–1021 DOI: 10.1021/acs.jchemed.7b00110
  - Mobile Augmented Reality Assisted Chemical Education: Insights from Elements 4D Shuxia Yang, Bing Mei, and Xiaoyu Yue, J. Chem. Educ., 2018, 95 (6), pp 1060–1062 DOI: 10.1021/acs.jchemed.8b00017
  - Continuous Flow Science in an Undergraduate Teaching Laboratory: Bleach-Mediated Oxidation in a Biphasic System Vanessa Kairouz and Shawn K. Collins, J. Chem. Educ., 2018, 95 (6), pp 1069–1072 DOI: 10.1021/acs.jchemed.7b00412
- mai
  - Developing High School Students' Self-Efficacy and Perceptions about Inquiry and Laboratory Skills through Argument-Driven Inquiry Guluzar Eymur, J. Chem. Educ., 2018,

95 (5), pp 709–715 DOI: 10.1021/acs.jchemed.7b00934
    - Zero-Order Chemical Kinetics as a Context To Investigate Student Understanding of Catalysts and Half-Life Kinsey Bain, Jon-Marc G. Rodriguez, and Marcy H. Towns, J. Chem. Educ., 2018, 95 (5), pp 716–725 DOI: 10.1021/acs.jchemed.7b00974
    - MOL: Developing a European-Style Board Game To Teach Organic Chemistry Eduardo Triboni and Gabriel Weber, J. Chem. Educ., 2018, 95 (5), pp 791–803 DOI: 10.1021/acs.jchemed.7b00408
    - Measuring Yeast Fermentation Kinetics with a Homemade Water Displacement Volumetric Gasometer Richard B. Weinberg, J. Chem. Educ., 2018, 95 (5), pp 828–832 DOI: 10.1021/acs.jchemed.7b00043
    - Teaching Electrochemistry in the General Chemistry Laboratory through Corrosion Exercises Richard W. Sanders, Gregory L. Crettol, Joseph D. Brown, Patrick T. Plummer, Tara M. Schendorf, Alex Oliphant, Susan B. Swithenbank, Robert F. Ferrante, and Joshua P. Gray, J. Chem. Educ., 2018, 95 (5), pp 842–846 DOI: 10.1021/acs.jchemed.7b00416
- avril
    - Dissolving Salts in Water: Students' Particulate Explanations of Temperature Changes Timothy N. Abell and Stacey Lowery Bretz, J. Chem. Educ., 2018, 95 (4), pp 504–511 DOI: 10.1021/acs.jchemed.7b00845
    - Applying Le Châtelier's Principle To Model Strong Acid–Strong Base Titration Philippe H. Mercier, J. Chem. Educ., 2018, 95 (4), pp 521–527 DOI: 10.1021/acs.jchemed.7b00575
    - Exploring the Mysterious Substances, X and Y: Challenging Students' Thinking on Acid–Base Chemistry and Chemical Equilibrium Ingo Eilks, Ozcan Gulacar, and Jose Sandoval, J. Chem. Educ., 2018, 95 (4), pp 601–604 DOI: 10.1021/acs.jchemed.7b00404
    - Acid–Base Behavior of 100 Element Oxides: Visual and Mathematical Representations Mikhail Kurushkin and Dmitry Kurushkin, J. Chem. Educ., 2018, 95 (4), pp 678–681 DOI: 10.1021/acs.jchemed.7b00576
    - Recovery of Silver Nitrate from Silver Chloride Waste James von Dollen, Sofia Oliva, Sarah Max, and Jennifer Esbenshade, J. Chem. Educ., 2018, 95 (4), pp 682–685 DOI: 10.1021/acs.jchemed.7b00713
- mars
    - Making Sense of Phenomena from Sequential Images versus Illustrated Text Karina C. Scalco , Vicente Talanquer , Keila B. Kiill, and Marcia R. Cordeiro J. Chem. Educ., 2018, 95 (3), pp 347–354 DOI: 10.1021/acs.jchemed.7b00716
    - Discovering the Chemical Elements in Food Antonio Joaquín Franco-Mariscal J. Chem. Educ., 2018, 95 (3), pp 403–409 DOI: 10.1021/acs.jchemed.7b00218
    - Chemical Pursuit: A Modified Trivia Board Game Blakely M. Adair and Lyle V. McAfee, J. Chem. Educ., 2018, 95 (3), pp 416–418 DOI: 10.1021/acs.jchemed.6b00946
    - Demonstrations of Magnetism and Oxidation by Combustion of Iron Supplement Tablets Max J. Palmer, Keri A. Martinez, Mayuresh G. Gadgil, and Dean J. Campbell J. Chem. Educ., 2018, 95 (3), pp 423–427 DOI: 10.1021/acs.jchemed.7b00475
- février
    - Problem-Based Approach to Teaching Advanced Chemistry Laboratories and Developing Students' Critical Thinking Skills Joseph G. Quattrucci, J. Chem. Educ., 2018, 95 (2), pp 259–266 DOI: 10.1021/acs.jchemed.7b00558
    - Lab-on-a-Chip: Frontier Science in the Classroom Jan Jaap Wietsma, Jan T. van der Veen, Wilfred Buesink, Albert van den Berg, and Mathieu Odijk, J. Chem. Educ., 2018, 95 (2), pp 267–275 DOI: 10.1021/acs.jchemed.7b00506
    - The People Periodic Table: A Framework for Engaging Introductory Chemistry Students Adam Hoffman and Mark Hennessy, J. Chem. Educ., 2018, 95 (2), pp 281–285 DOI: 10.1021/acs.jchemed.7b00226

  - Open-Source Low-Cost Wireless Potentiometric Instrument for pH Determination Experiments Hao Jin, Yiheng Qin, Si Pan, Arif U. Alam, Shurong Dong, Raja Ghosh , and M. Jamal Deen, J. Chem. Educ., 2018, 95 (2), pp 326–330 DOI: 10.1021/acs.jchemed.7b00479
- janvier
  - Development of the Flame Test Concept Inventory: Measuring Student Thinking about Atomic Emission Stacey Lowery Bretz and Ana Vasquez Murata Mayo, J. Chem. Educ., 2018, 95 (1), pp 17–27 DOI: 10.1021/acs.jchemed.7b00594
  - Analyzing General Chemistry Texts' Treatment of Rates of Change Concepts in Reaction Kinetics Reveals Missing Conceptual Links Sherry Seethaler, John Czworkowski, and Lynda Wynn, J. Chem. Educ., 2018, 95 (1), pp 28–36 DOI: 10.1021/acs.jchemed.7b00238
  - Geometrical Description of Chemical Equilibrium and Le Châtelier's Principle: Two-Component Systems Igor Novak, J. Chem. Educ., 2018, 95 (1), pp 84–87 DOI: 10.1021/acs.jchemed.7b00665
  - A Simplified Method for the 3D Printing of Molecular Models for Chemical Education Oliver A. H. Jones and Michelle J. S. Spencer, J. Chem. Educ., 2018, 95 (1), pp 88–96 DOI: 10.1021/acs.jchemed.7b00533
  - MolPrint3D: Enhanced 3D Printing of Ball-and-Stick Molecular Models Paul J. Paukstelis, J. Chem. Educ., 2018, 95 (1), pp 169–172 DOI: 10.1021/acs.jchemed.7b00549
  - Demonstrating Principles of Spectrophotometry by Constructing a Simple, Low-Cost, Functional Spectrophotometer Utilizing the Light Sensor on a Smartphone Bill S. Hosker, J. Chem. Educ., 2018, 95 (1), pp 178–181 DOI: 10.1021/acs.jchemed.7b00548

2017

- décembre
  - Concept Inventories: Predicting the Wrong Answer May Boost Performance Vicente Talanquer, Journal of Chemical Education 2017 94 (12), 1805-1810 DOI: 10.1021/acs.jchemed.7b00427
  - Comparing Student Performance Using Computer and Paper-Based Tests: Results from Two Studies in General Chemistry Anna A. Prisacari, Thomas A. Holme, and Jared Danielson, Journal of Chemical Education 2017 94 (12), 1822-1830 DOI: 10.1021/acs.jchemed.7b00274
  - Reforming a Large Foundational Course: Successes and Challenges Vicente Talanquer and John Pollard, Journal of Chemical Education 2017 94 (12), 1844-1851 DOI: 10.1021/acs.jchemed.7b00397 **undergraduate**
  - Practicing What We Preach: Assessing "Critical Thinking" in Organic Chemistry Ryan L. Stowe and Melanie M. Cooper, Journal of Chemical Education 2017 94 (12), 1852-1859 DOI: 10.1021/acs.jchemed.7b00335 **undergraduate**
  - Tailoring Clicker Technology to Problem-Based Learning: What's the Best Approach? Russell J. Pearson, Journal of Chemical Education 2017 94 (12), 1866-1872 DOI: 10.1021/acs.jchemed.7b00270 **undergraduate**
  - Introduction to Stochastic Simulations for Chemical and Physical Processes: Principles and Applications Charles J. Weiss, Journal of Chemical Education 2017 94 (12), 1904-1910 DOI: 10.1021/acs.jchemed.7b00395 **physical-chemistry undergraduate; programming**
  - How Is the Freezing Point of a Binary Mixture of Liquids Related to the Composition? A Guided Inquiry Experiment Sally S. Hunnicutt, Alexander Grushow, and Rob Whitnell, Journal of Chemical Education 2017 94 (12), 1983-1988 DOI: 10.1021/acs.jchemed.7b00409 **physical-chemistry undergraduate**
  - Determining the Speed of Sound and Heat Capacity Ratios of Gases by Acoustic Interferometry Thomas D. Varberg, Bradley W. Pearlman, Ian A. Wyse, Samuel P. Gleason,

Dalir H. P. Kellett, and Kenneth L. Moffett, Journal of Chemical Education 2017 94 (12), 1995-1998 DOI: 10.1021/acs.jchemed.7b00526 **physical-chemistry undergraduate**

- novembre
  - Polymer Day: Outreach Experiments for High School Students Jeffrey M. Ting, Ralm G. Ricarte, Deborah K. Schneiderman, Stacey A. Saba, Yaming Jiang, Marc A. Hillmyer, Frank S. Bates, Theresa M. Reineke, Christopher W. Macosko, and Timothy P. Lodge, J. Chem. Educ., 2017, 94 (11), pp 1629–1638 DOI: 10.1021/acs.jchemed.6b00767
  - Augmenting Primary and Secondary Education with Polymer Science and Engineering Rose K. Cersonsky, Leanna L. Foster, Taeyong Ahn, Ryan J. Hall, Harry L. van der Laan, and Timothy F. Scott, J. Chem. Educ., 2017, 94 (11), pp 1639–1646 DOI: 10.1021/acs.jchemed.6b00805
  - Illustrating Plastic Production and End-of-Life Plastic Treatment with Interlocking Building Blocks Stephan Enthaler, J. Chem. Educ., 2017, 94 (11), pp 1746–1751 DOI: 10.1021/acs.jchemed.6b00888
- octobre
  - A(nother) Modification of the Ammonia Fountain Demonstration Ben Ruekberg and David L. Freeman, J. Chem. Educ., 2017, 94 (10), pp 1397–1398 DOI: 10.1021/acs.jchemed.7b00295
  - Unpacking “Active Learning”: A Combination of Flipped Classroom and Collaboration Support Is More Effective but Collaboration Support Alone Is Not Martina A. Rau, Kristopher Kennedy, Lucas Oxtoby, Mark Bollom, and John W. Moore, J. Chem. Educ., 2017, 94 (10), pp 1406–1414 DOI: 10.1021/acs.jchemed.7b00240
  - Differential Use of Study Approaches by Students of Different Achievement Levels Diane M. Bunce, Regis Komperda, Maria J. Schroeder, Debra K. Dillner, Shirley Lin, Melonie A. Teichert, and JudithAnn R. Hartman, J. Chem. Educ., 2017, 94 (10), pp 1415–1424 DOI: 10.1021/acs.jchemed.7b00202
  - Illustrating the Basic Functioning of Mass Analyzers in Mass Spectrometers with Ball-Rolling Mechanisms Ryo Horikoshi, Fumitaka Takeiri, Riho Mikita, Yoji Kobayashi, and Hiroshi Kageyama, J. Chem. Educ., 2017, 94 (10), pp 1502–1506 DOI: 10.1021/acs.jchemed.7b00297
  - Bird’s-Eye View of Sampling Sites: Using Unmanned Aerial Vehicles To Make Chemistry Fieldwork Videos Fun Man Fung and Simon Francis Watts, J. Chem. Educ., 2017, 94 (10), pp 1557–1561 DOI: 10.1021/acs.jchemed.6b00985
  - Exploring Matter: An Interactive, Inexpensive Chemistry Exhibit for Museums Steven Murov and Arnold Chavez, J. Chem. Educ., 2017, 94 (10), pp 1571–1579 DOI: 10.1021/acs.jchemed.6b01024
- septembre
  - Students’ Concept-Building Approaches: A Novel Predictor of Success in Chemistry Courses Regina F. Frey , Michael J. Cahill, and Mark A. McDaniel, J. Chem. Educ., 2017, 94 (9), pp 1185–1194 DOI: 10.1021/acs.jchemed.7b00059
  - Investigating the Antioxidant Capacity of Fruits and Fruit Byproducts through an Introductory Food Chemistry Experiment for High School Cristina Soares, Manuela Correia, Cristina Delerue-Matos, and M. Fátima Barroso, J. Chem. Educ., 2017, 94 (9), pp 1291–1295 DOI: 10.1021/acs.jchemed.7b00045
  - Determination of Titratable Acidity in Wine Using Potentiometric, Conductometric, and Photometric Methods Dietrich A. Volmer, Luana Curbani, Timothy A. Parker, Jennifer Garcia, Linda D. Schultz, and Endler Marcel Borges, J. Chem. Educ., 2017, 94 (9), pp 1296–1302 DOI: 10.1021/acs.jchemed.6b00891
- août
  - Transforming a Traditional Laboratory to an Inquiry-Based Course: Importance of Training

TAs when Redesigning a Curriculum Lindsay B. Wheeler, Charles P. Clark, and Charles M. Grisham, J. Chem. Educ., 2017, 94 (8), pp 1019–1026 DOI: 10.1021/acs.jchemed.6b00831
  - Beyond “Inert” Ideas to Teaching General Chemistry from Rich Contexts: Visualizing the Chemistry of Climate Change (VC3) Peter G. Mahaffy, Thomas A. Holme, Leah Martin-Visscher, Brian E. Martin, Ashley Versprille, Mary Kirchhoff, Lallie McKenzie, and Marcy Towns, J. Chem. Educ., 2017, 94 (8), pp 1027–1035 DOI: 10.1021/acs.jchemed.6b01009
  - Campus as a Living Laboratory for Sustainability: The Chemistry Connection Timothy Lindstrom and Catherine Middlecamp, J. Chem. Educ., 2017, 94 (8), pp 1036–1042 DOI: 10.1021/acs.jchemed.6b00624
  - A Forensic Experiment: The Case of the Crime at the Cinema J. M. Valente Nabais and Sara D. Costa, J. Chem. Educ., 2017, 94 (8), pp 1111–1117 DOI: 10.1021/acs.jchemed.6b00942
  - Using Beads and Divided Containers To Study Kinetic and Equilibrium Isotope Effects in the Laboratory and in the Classroom Dean J. Campbell, Emily R. Brewer, Keri A. Martinez, and Tamara J. Fitzjarrald, J. Chem. Educ., 2017, 94 (8), pp 1118–1123 DOI: 10.1021/acs.jchemed.6b01004
- juillet
  - Three-Dimensional (3D) Printers in Libraries: Perspective and Preliminary Safety Analysis Neelam Bharti and Shailendra Singh, J. Chem. Educ., 2017, 94 (7), pp 879–885 DOI: 10.1021/acs.jchemed.6b00745
  - 3D Printing of Molecular Models with Calculated Geometries and p Orbital Isosurfaces Felix A. Carroll and David N. Blauch, J. Chem. Educ., 2017, 94 (7), pp 886–891 DOI: 10.1021/acs.jchemed.6b00933
  - An Inquiry Experience with High School Students To Develop an Understanding of Intermolecular Forces by Relating Boiling Point Trends and Molecular Structure Melinda Ogden, J. Chem. Educ., 2017, 94 (7), pp 897–902 DOI: 10.1021/acs.jchemed.6b00697
  - Another Twist of the Foam: An Effective Test Considering a Quantitative Approach to “Elephant’s Toothpaste” Franco Hernando, Santiago Laperuta, Jeanine Van Kuijl, Nihuel Laurin, Federico Sacks, and Andrés Ciolino, J. Chem. Educ., 2017, 94 (7), pp 907–910 DOI: 10.1021/acs.jchemed.7b00040
  - Are Aqueous Solutions of Amphiprotic Anions Acidic, Basic, or Neutral? A Demonstration with Common pH Indicators Jervee M. Punzalan and Voltaire G. Organo, J. Chem. Educ., 2017, 94 (7), pp 911–915 DOI: 10.1021/acs.jchemed.6b00711
  - Quantifying Protein Concentrations Using Smartphone Colorimetry: A New Method for an Established Test Clifford T. Gee, Eric Kehoe, William C. K. Pomerantz, and R. Lee Penn, J. Chem. Educ., 2017, 94 (7), pp 941–945 DOI: 10.1021/acs.jchemed.6b00676
- juin
  - pKa Values in the Undergraduate Curriculum: What Is the Real pKa of Water? Todd P. Silverstein and Stephen T. Heller, J. Chem. Educ., 2017, 94 (6), pp 690–695 DOI: 10.1021/acs.jchemed.6b00623
  - Blue Bottle Experiment: Learning Chemistry without Knowing the Chemicals Taweetham Limpanuparb, Cherprang Areekul, Punchalee Montriwat, and Urawadee Rajchakit, J. Chem. Educ., 2017, 94 (6), pp 730–737 DOI: 10.1021/acs.jchemed.6b00844
  - Inexpensive Miniature Programmable Magnetic Stirrer from Reconfigured Computer Parts Conan Mercer and Dónal Leech, J. Chem. Educ., 2017, 94 (6), pp 816–818 DOI: 10.1021/acs.jchemed.7b00184
- mai
  - Suggestion of a Viewpoint Change for the Classification Criteria of Redox Reactions Seoung-Hey Paik, Sungki Kim, and Kihyang Kim, J. Chem. Educ., 2017, 94 (5), pp 563–568 DOI: 10.1021/acs.jchemed.6b00593
  - A Glowing Recommendation: A Project-Based Cooperative Laboratory Activity To Promote

Use of the Scientific and Engineering Practices, Justin H. Carmel, Joseph S. Ward, and Melanie M. Cooper, J. Chem. Educ., 2017, 94 (5), pp 626–631 DOI: 10.1021/acs.jchemed.6b00628
    - Getting the Argument Started: A Variation on the Density Investigation Joi P. Walker and Steven F. Wolf, J. Chem. Educ., 2017, 94 (5), pp 632–635 DOI: 10.1021/acs.jchemed.6b00621
    - Determining a Solubility Product Constant by Potentiometric Titration To Increase Students' Conceptual Understanding of Potentiometry and Titrations Lauren E. Grabowski and Scott R. Goode, J. Chem. Educ., 2017, 94 (5), pp 636–639 DOI: 10.1021/acs.jchemed.6b00460
- avril
    - Assessing Student Knowledge of Chemistry and Climate Science Concepts Associated with Climate Change: Resources To Inform Teaching and Learning, Ashley Versprille, Adam Zabih, Thomas A. Holme, Lallie McKenzie, Peter Mahaffy, Brian Martin and Marcy Towns, J. Chem. Educ., 2017, 94 (4), pp 407–417 DOI: 10.1021/acs.jchemed.6b00759
    - What We Don't Test: What an Analysis of Unreleased ACS Exam Items Reveals about Content Coverage in General Chemistry Assessments, Jessica J. Reed, Sachel M. Villafañe, Jeffrey R. Raker, Thomas A. Holme, and Kristen L. Murphy, J. Chem. Educ., 2017, 94 (4), pp 418–428 DOI: 10.1021/acs.jchemed.6b00863
    - A Tasty Approach to Statistical Experimental Design in High School Chemistry: The Best Lemon Cake, Lucia Liguori, J. Chem. Educ., 2017, 94 (4), pp 465–470 DOI: 10.1021/acs.jchemed.6b00369
    - CO2 Dry Cleaning: A Benign Solvent Demonstration Accessible to K–8 Audiences, Reuben Hudson, Henry M. Ackerman, Lindsay K. Gallo, Addison S. Gwinner, Anna Krauss, John D. Sears, Alexandra Bishop, Kristin N. Esdale, and Jeffrey L. Katz, J. Chem. Educ., 2017, 94 (4), pp 480–482 DOI: 10.1021/acs.jchemed.6b00412
    - Rapid Production of a Porous Cellulose Acetate Membrane for Water Filtration using Readily Available Chemicals, Adrian Kaiser, Wendelin J. Stark , and Robert N. Grass, J. Chem. Educ., 2017, 94 (4), pp 483–487 DOI: 10.1021/acs.jchemed.6b00776
    - "Greening" a Familiar General Chemistry Experiment: Coffee Cup Calorimetry to Determine the Enthalpy of Neutralization of an Acid–Base Reaction and the Specific Heat Capacity of Metals, A. M. R. P. Bopegedera and K. Nishanthi R. Perera, J. Chem. Educ., 2017, 94 (4), pp 494–499 DOI: 10.1021/acs.jchemed.6b00189
- mars
    - Unraveling the Complexities: An Investigation of the Factors That Induce Load in Chemistry Students Constructing Lewis Structures Jessica M. Tiettmeyer, Amelia F. Coleman, Ryan S. Balok, Tyler W. Gampp, Patrick L. Duffy, Kristina M. Mazzarone, and Nathaniel P. Grove, J. Chem. Educ., 2017, 94 (3), pp 282–288 DOI: 10.1021/acs.jchemed.6b00363
    - Understanding Chemical Equilibrium: The Role of Gas Phases and Mixing Contributions in the Minimum of Free Energy Plots, J. Pablo Tomba, J. Chem. Educ., 2017, 94 (3), pp 327–334 DOI: 10.1021/acs.jchemed.6b00726
    - Unboiling an Egg: An Introduction to Circular Dichroism and Protein Refolding John P. Hoben, Jianing Wang, and Anne-Frances Miller, J. Chem. Educ., 2017, 94 (3), pp 356–360 DOI: 10.1021/acs.jchemed.6b00319
    - Calculating the Confidence and Prediction Limits of a Rate Constant at a Given Temperature from an Arrhenius Equation Using Excel, Ronald A. Hites, J. Chem. Educ., 2017, 94 (3), pp 398–400 DOI: 10.1021/acs.jchemed.6b00842
- février
    - Mapping the Teaching of History of Chemistry in Europe Ignacio Suay-Matallana, José

Ramón Bertomeu Sánchez, J. Chem. Educ., 2017, 94 (2), pp 133–136 DOI: 10.1021/acs.jchemed.6b00401
    - The Chemistry of Photography: Still a Terrific Laboratory Course for Nonscience Majors Simeen Sattar, J. Chem. Educ., 2017, 94 (2), pp 183–189 DOI: 10.1021/acs.jchemed.6b00400
    - Using Interlocking Toy Building Blocks To Assess Conceptual Understanding In Chemistry Michael J. Geyer, J. Chem. Educ., 2017, 94 (2), pp 202–205 DOI: 10.1021/acs.jchemed.6b00551
    - Using Students' Conceptions of Air To Evaluate a Guided-Inquiry Activity Classifying Matter Using Particulate Models D. Amanda Vilardo, Ann H. MacKenzie, and Ellen J. Yezierski, J. Chem. Educ., 2017, 94 (2), pp 206–210 DOI: 10.1021/acs.jchemed.5b01011
    - Self-Motion of Sodium Benzoate Flakes on a Water Surface: A Demonstration Katherine V. Darvesh and Earl Martin, J. Chem. Educ., 2017, 94 (2), pp 226–229 DOI: 10.1021/acs.jchemed.6b00658
    - Demonstrating the Effect of Surfactant on Water Retention of Waxy Leaf Surfaces Yu-Chun Chiu, Matthew A. Jenks, Michelle Richards-Babb, Betsy B. Ratcliff, John A. Juvik, and Kang-Mo Ku, J. Chem. Educ., 2017, 94 (2), pp 230–234 DOI: 10.1021/acs.jchemed.6b00546
    - Building Large Molecular Models with Plastic Screw-On Bottle Caps and Sturdy Connectors Dawid Siodłak, J. Chem. Educ., 2017, 94 (2), pp 256–259 DOI: 10.1021/acs.jchemed.6b00576
- janvier
    - Choice of Study Resources in General Chemistry by Students Who Have Little Time To Study Diane M. Bunce, Regis Komperda , Debra K. Dillner, Shirley Lin, Maria J. Schroeder, and Judith Ann R. Hartman, J. Chem. Educ., 2017, 94 (1), pp 11–18 DOI: 10.1021/acs.jchemed.6b00285
    - Characterizing Teaching Assistants' Knowledge and Beliefs Following Professional Development Activities within an Inquiry-Based General Chemistry Context Lindsay B. Wheeler, Jennifer L. Maeng, Brooke A. Whitworth, J. Chem. Educ., 2017, 94 (1), pp 19–28 DOI: 10.1021/acs.jchemed.6b00373
    - Authentic Performance in the Instrumental Analysis Laboratory: Building a Visible Spectrophotometer Prototype Mark V. Wilson and Erin Wilson, J. Chem. Educ., 2017, 94 (1), pp 44–51 DOI: 10.1021/acs.jchemed.6b00515
    - An Inexpensive Programmable Dual-Syringe Pump for the Chemistry Laboratory, Mark S. Cubberley and William A. Hess, J. Chem. Educ., 2017, 94 (1), pp 72–74 DOI: 10.1021/acs.jchemed.6b00598
    - Simultaneous Introduction of Redox and Coordination Chemistry Concepts in a Single Laboratory Experiment Philip J. Ferko, Jeffrey R. Withers, Hung Nguyen, Joshua Ema, Tim Ema, Charles Allison, Christian Dornhoefer, Nigam P. Rath, and Stephen M. Holmes, J. Chem. Educ., 2017, 94 (1), pp 95–100 DOI: 10.1021/acs.jchemed.6b00256
    - Alternative Hydrogen Peroxide Sources for Peroxyoxalate "Glowstick" Chemiluminescence Demonstrations Iain A. Smellie, Joanna K. D Aldred (née Prentis), Benjamin Bower, Amber Cochrane, Laurie Macfarlane, Hollie B. McCarron, Roxana O'Hara, Iain L. J. Patterson, Marie I. Thomson, and Jessica M. Walker, J. Chem. Educ., 2017, 94 (1), pp 112–114 DOI: 10.1021/acs.jchemed.6b00536

2016

- décembre
    - A Parallel Controlled Study of the Effectiveness of a Partially Flipped Organic Chemistry

    - Course on Student Performance, Perceptions, and Course Completion, James C. Shattuck, J. Chem. Educ., 2016, 93 (12), pp 1984–1992 DOI: 10.1021/acs.jchemed.6b00393
    - Using Demonstrations Involving Combustion and Acid–Base Chemistry To Show Hydration of Carbon Dioxide, Sulfur Dioxide, and Magnesium Oxide and Their Relevance for Environmental Climate Science, J. Chem. Educ., 2016, 93 (12), pp 2063–2067 DOI: 10.1021/acs.jchemed.6b00310
- novembre
    - Score Increase and Partial-Credit Validity When Administering Multiple-Choice Tests Using an Answer-Until-Correct Format, Aaron D. Slepkov, Andrew J. Vreugdenhil, and Ralph C. Shiell, J. Chem. Educ., 2016, 93 (11), pp 1839–1846 DOI: 10.1021/acs.jchemed.6b00028
    - Atomic Tiles: Manipulative Resources for Exploring Bonding and Molecular Structure, Alan L. Kiste, Rebecca G. Hooper, Gregory E. Scott, and Seth D. Bush, J. Chem. Educ., 2016, 93 (11), pp 1900–1903 DOI: 10.1021/acs.jchemed.6b00361
    - A Colorful Demonstration to Visualize and Inquire into Essential Elements of Chemical Equilibrium, Ingo Eilks and Ozcan Gulacar, J. Chem. Educ., 2016, 93 (11), pp 1904–1907 DOI: 10.1021/acs.jchemed.6b00252
    - Stepwise Inquiry into Hard Water in a High School Chemistry Laboratory, Mami Kakisako, Kazuyuki Nishikawa, Masayoshi Nakano, Kana S. Harada, Tomoyuki Tatsuoka, and Nobuyoshi Koga, J. Chem. Educ., 2016, 93 (11), pp 1923–1928 DOI: 10.1021/acs.jchemed.6b00217
    - Reflections on “YouTestTube.com”: An Online Video-Sharing Platform To Engage Students with Chemistry Laboratory Classes, Stephen McClean, Kenneth G. McCartan, Sheryl Meskin, Beronia Gorges, and W. Paul Hagan, J. Chem. Educ., 2016, 93 (11), pp 1863–1870 DOI: 10.1021/acs.jchemed.6b00045
- octobre
    - Investigating Students’ Reasoning about Acid–Base Reactions, Melanie M. Cooper, Hovig Kouyoumdjian, and Sonia M. Underwood, J. Chem. Educ., 2016, 93 (10), pp 1703–1712, **Article ASAP** DOI: 10.1021/acs.jchemed.6b00417 **ACS Editors' Choice (open access)**
    - Investigating Dissolution and Precipitation Phenomena with a Smartphone Microscope Gregg J. Lumetta and Edgar Arcia, J. Chem. Educ., 2016, 93 (10), pp 1754–1759 DOI: 10.1021/acs.jchemed.6b00248
    - Kinetic Explorations of the Candy–Cola Soda Geyser Trevor P. T. Sims and Thomas S. Kuntzleman, J. Chem. Educ., 2016, 93 (10), pp 1809–1813 DOI: 10.1021/acs.jchemed.6b00263
    - Simple and Inexpensive UV-Photometer Using LEDs as Both Light Source and Detector Eivind V. Kvittingen, Lise Kvittingen, Birte Johanne Sjursnes, and Richard Verley, J. Chem. Educ., 2016, 93 (10), pp 1814–1817 DOI: 10.1021/acs.jchemed.6b00156
- septembre
    - Development of a Three-Tier Test as a Valid Diagnostic Tool for Identification of Misconceptions Related to Carbohydrates, Dušica D. Milenković, Tamara N. Hrin, Mirjana D. Segedinac, and Saša Horvat, J. Chem. Educ., 2016, 93 (9), pp 1514–1520 DOI: 10.1021/acs.jchemed.6b00261
    - Introducing Inquiry-Based Methodologies during Initial Secondary Education Teacher Training Using an Open-Ended Problem about Chemical Change, Iñigo Rodríguez-Arteche and M. Mercedes Martínez-Aznar, J. Chem. Educ., 2016, 93 (9), pp 1528–1535 DOI: 10.1021/acs.jchemed.5b01037
- août
    - Connecting Protein Structure to Intermolecular Interactions: A Computer Modeling Laboratory Mohammed Abualia, Lianne Schroeder, Megan Garcia, Patrick L. Daubenmire, Donald J. Wink, and Ginevra A. Clark, J. Chem. Educ., 2016, 93 (8), pp 1353–1363 DOI:

10.1021/acs.jchemed.5b00910
    - Identifying Misconceptions Related to Chemical Bonding Concepts in the Slovak School System Using the Bonding Representations Inventory as a Diagnostic Tool, Michal Vrabec and Miroslav Prokša, J. Chem. Educ., 2016, 93 (8), pp 1364–1370 DOI: 10.1021/acs.jchemed.5b00953
    - FlashPhotol: Using a Flash Photolysis Apparatus Simulator To Introduce Students to the Kinetics of Transient Species and Fast Reactions Stephen W. Bigger, J. Chem. Educ., 2016, 93 (8), pp 1475–1477 DOI: 10.1021/acs.jchemed.5b00896
- juillet
    - Optimization and Design of an Absorbance Spectrometer Controlled Using a Raspberry Pi To Improve Analytical Skills Kristelle Bougot-Robin, Jack Paget, Stephen C. Atkins, and Joshua B. Edel, J. Chem. Educ., 2016, 93 (7), pp 1232–1240 DOI: 10.1021/acs.jchemed.5b01006
    - A Game-Based Approach To Learning the Idea of Chemical Elements and Their Periodic Classification Antonio Joaquín Franco-Mariscal, José María Oliva-Martínez, Ángel Blanco-López, and Enrique España-Ramos, J. Chem. Educ., 2016, 93 (7), pp 1173–1190 DOI: 10.1021/acs.jchemed.5b00846
    - An Intensive Training Program for Effective Teaching Assistants in Chemistry Vera Dragisich, Valerie Keller, and Meishan Zhao, J. Chem. Educ., 2016, 93 (7), pp 1204–1210 DOI: 10.1021/acs.jchemed.5b00577
    - Piloting Blended Strategies To Resolve Laboratory Capacity Issues in a First-Semester General Chemistry Course Shayna Burchett, Jack Hayes, Annalise Pfaff, Emmalou T. Satterfield, Amy Skyles, and Klaus Woelk, J. Chem. Educ., 2016, 93 (7), pp 1217–1222 DOI: 10.1021/acs.jchemed.6b00078
    - Construction and Characterization of a Compact, Portable, Low-Cost Colorimeter for the Chemistry Lab Carrie M. Clippard, William Hughes, Balwant S. Chohan, Danny G. Sykes, J. Chem. Educ., 2016, 93 (7), pp 1241–1248 DOI: 10.1021/acs.jchemed.5b00729
    - Studying Equilibrium in the Chemical Reaction between Ferric and Iodide Ions in Solution Using a Simple and Inexpensive Approach Pavel Anatolyevich Nikolaychuk and Alyona Olegovna Kuvaeva, J. Chem. Educ., 2016, 93 (7), pp 1267–1269 DOI: 10.1021/acs.jchemed.5b00958
    - User-Friendly 3D Printed Colorimeter Models for Student Exploration of Instrument Design and Performance Lon A. Porter Jr., Benjamin M. Washer, Mazin H. Hakim, and Richard F. Dallinger, J. Chem. Educ., 2016, 93 (7), pp 1305–1309 DOI: 10.1021/acs.jchemed.6b00041
    - An Inexpensive, Open-Source USB Arduino Data Acquisition Device for Chemical Instrumentation James P. Grinias, Jason T. Whitfield, Erik D. Guetschow, and Robert T. Kennedy, J. Chem. Educ., 2016, 93 (7), pp 1316–1319 DOI: 10.1021/acs.jchemed.6b00262
    - A Chemical Instrumentation Course on Microcontrollers and Op Amps. Construction of a pH Meter Nikos J. Papadopoulos and Andreas Jannakoudakis, J. Chem. Educ., 2016, 93 (7), pp 1323–1325 DOI: 10.1021/acs.jchemed.5b00743
- juin
    - Effectiveness of Inquiry-Based Lessons Using Particulate Level Models To Develop High School Students' Understanding of Conceptual Stoichiometry, Stephanie Kimberlin and Ellen Yezierski, J. Chem. Educ., 2016, 93 (6), pp 1002–1009 DOI: 10.1021/acs.jchemed.5b01010
    - Insights into How Students Learn the Difference between a Weak Acid and a Strong Acid from Cartoon Tutorials Employing Visualizations, Resa M. Kelly and Sevil Akaygun, J. Chem. Educ., 2016, 93 (6), pp 1010–1019 DOI: 10.1021/acs.jchemed.6b00034
- mai
    - Thinking Like a Chemist: Development of a Chemistry Card-Sorting Task To Probe Conceptual Expertise Felicia E. Krieter, Ryan W. Julius, Kimberly D. Tanner, Seth D. Bush,

    and Gregory E. Scott, J. Chem. Educ., 2016, 93 (5), pp 811–820 DOI: 10.1021/acs.jchemed.5b00992
  - Establishing the Validity of Using Network Analysis Software for Measuring Students' Mental Storage of Chemistry Concepts Kelly Y. Neiles, Ivy Todd, and Diane M. Bunce, J. Chem. Educ., 2016, 93 (5), pp 821–831 DOI: 10.1021/acs.jchemed.5b00748
  - Correct Use of Helmholtz and Gibbs Function Differences, ΔA and ΔG: The van't Hoff Reaction Box Leslie Glasser, J. Chem. Educ., 2016, 93 (5), pp 978–980 DOI: 10.1021/acs.jchemed.5b00925
  - Investigating General Chemistry Students' Metacognitive Monitoring of Their Exam Performance by Measuring Postdiction Accuracies over Time Morgan J. Hawker, Lisa Dysleski, and Dawn Rickey, J. Chem. Educ., 2016, 93 (5), pp 832–840 DOI: 10.1021/acs.jchemed.5b00705
- avril
  - A Quantum Chemistry Concept Inventory for Physical Chemistry Classes Marilu Dick-Perez, Cynthia J. Luxford, Theresa L. Windus, and Thomas Holme J. Chem. Educ., 2016, 93 (4), pp 605–612 DOI: 10.1021/acs.jchemed.5b00781 (college chemistry)
  - "Can" You Really Make a Battery Out of That? Michael A. Parkes, Thomas Chen, Billy Wu, Vladimir Yufit, and Gregory J. Offer, J. Chem. Educ., 2016, 93 (4), pp 681–686 DOI: 10.1021/acs.jchemed.5b00496
  - Development and Implementation of a Simple, Engaging Acid Rain Neutralization Experiment and Corresponding Animated Instructional Video for Introductory Chemistry Students Danielle Rand, Craig J. Yennie, Patrick Lynch, Gregory Lowry, James Budarz, Wenlei Zhu, and Li-Qiong Wang, J. Chem. Educ., 2016, 93 (4), pp 722–728 DOI: 10.1021/acs.jchemed.5b00635
  - Using ChemDuino, Excel, and PowerPoint as Tools for Real-Time Measurement Representation in Class Malte Walkowiak and Andreas Nehring, J. Chem. Educ., 2016, 93 (4), pp 778–780 DOI: 10.1021/acs.jchemed.5b00923
- mars
  - Improving Information Literacy Skills through Learning To Use and Edit Wikipedia: A Chemistry Perspective, Martin A. Walker and Ye Li, J. Chem. Educ., 2016, 93 (3), pp 509–515 DOI: 10.1021/acs.jchemed.5b00525 + comment
- février
  - Using Cooperative Learning To Teach Chemistry: A Meta-analytic Review Abdi-Rizak M. Warfa, J. Chem. Educ. 2016, 93(2), 248-255 DOI: 10.1021/acs.jchemed.5b00608
  - Quantifying Gold Nanoparticle Concentration in a Dietary Supplement Using Smartphone Colorimetry and Google Applications Antonio R. Campos, Cassandra M. Knutson, Theodore R. Knutson, Abbie R. Mozzetti, Christy L. Haynes, and R. Lee Penn, J. Chem. Educ., 2016, 93 (2), pp 318–321 DOI: 10.1021/acs.jchemed.5b00385
  - Using Interactive Psychrometric Charts to Visualize and Explore Psychrometric Processes, Péter Erdélyi and Róbert Rajkó, J. Chem. Educ., 2016, 93 (2), pp 391–393 DOI: 10.1021/acs.jchemed.5b00779
- janvier
  - A "Flipped Classroom" Reality Check, Norbert J. Pienta, J. Chem. Educ., 2016, 93 (1), pp 1–2 DOI: 10.1021/acs.jchemed.5b00996 **editorial**
  - Central Ideas in Chemistry: An Alternative Perspective Vicente Talanquer, J. Chem. Educ. 2016, 93, 1, 3-8 DOI: 10.1021/acs.jchemed.5b00434
  - Five Things Chemists (and Other Science Faculty) Should Know about the Education Research Literature S. Seethaler, J. Chem. Educ., 2016, 93 (1), pp 9–12 DOI: 10.1021/acs.jchemed.5b00109 (commentaire)
  - Effect of Computer Simulations at the Particulate and Macroscopic Levels on Students'

Understanding of the Particulate Nature of Matter Hui Tang and Michael R. Abraham, J. Chem. Educ., 2016, 93 (1), pp 31–38 DOI: 10.1021/acs.jchemed.5b00599
    - Encouraging Higher-Order Thinking in General Chemistry by Scaffolding Student Learning Using Marzano's Taxonomy Santiago Toledo and Justin M. Dubas, J. Chem. Educ., 2016, 93 (1), pp 64–69 DOI: 10.1021/acs.jchemed.5b00184
    - Representation and Analysis of Chemistry Core Ideas in Science Education Standards between China and the United States Yanlan Wan and Hualin Bi, J. Chem. Educ., 2016, 93 (1), pp 70–78 DOI: 10.1021/ed500861g
    - Identifying Liquid–Gas System Misconceptions and Addressing Them Using a Laboratory Exercise on Pressure–Temperature Diagrams of a Mixed Gas Involving Liquid–Vapor Equilibrium Masahiro Yoshikawa and Nobuyoshi Koga, J. Chem. Educ., 2016, 93 (1), pp 79–85 DOI: 10.1021/acs.jchemed.5b00107
    - Teaching UV–Vis Spectroscopy with a 3D-Printable Smartphone Spectrophotometer Elise K. Grasse, Morgan H. Torcasio, and Adam W. Smith, J. Chem. Educ., 2016, 93 (1), pp 146–151 DOI: 10.1021/acs.jchemed.5b00654
    - Chemistry and Art in a Bag: An Easy-To-Implement Outreach Activity Making and Painting with a Copper-Based Pigment Anne C. Gaquere-Parker, N. Allie Doles, and Cass D. Parker, J. Chem. Educ., 2016, 93 (1), pp 152–153 DOI: 10.1021/acs.jchemed.5b00364
    - Build Your Own Photometer: A Guided-Inquiry Experiment To Introduce Analytical Instrumentation Jessie J. Wang, José R. Rodríguez Núñez, E. Jane Maxwell, and W. Russ Algar, J. Chem. Educ., 2016, 93 (1), pp 166–171 DOI: 10.1021/acs.jchemed.5b00426
    - Kinetics, Reaction Orders, Rate Laws, and Their Relation to Mechanisms: A Hands-On Introduction for High School Students Using Portable Spectrophotometry Jack M. Carraher, Sarah M. Curry, and Jean-Philippe Tessonnier, J. Chem. Educ., 2016, 93 (1), pp 172–174 DOI: 10.1021/acs.jchemed.5b00640
    - Integrating Chemistry Laboratory Instrumentation into the Industrial Internet: Building, Programming, and Experimenting with an Automatic Titrator Nicole Famularo, Yana Kholod, and Dmytro Kosenkov, J. Chem. Educ., 2016, 93 (1), pp 175–181 DOI: 10.1021/acs.jchemed.5b00494

2015

- décembre
    - Are Noncovalent Interactions an Achilles Heel in Chemistry Education? A Comparison of Instructional Approaches Leah C. Williams, Sonia M. Underwood, Michael W. Klymkowsky, and Melanie M. Cooper, J. Chem. Educ., 2015, 92 (12), pp 1979–1987 DOI: 10.1021/acs.jchemed.5b00619
    - The Digital Pipetting Badge: A Method To Improve Student Hands-On Laboratory Skills Marcy Towns, Cynthia J. Harwood, M. Brooke Robertshaw, Jason Fish, and Kevin O'Shea, J. Chem. Educ., 2015, 92 (12), pp 2038–2044 DOI: 10.1021/acs.jchemed.5b00464
    - Implementation of Problem-Based Learning in Environmental Chemistry Stina Jansson, Hanna Söderström, Patrik L. Andersson, and Malin L. Nording, J. Chem. Educ., 2015, 92 (12), pp 2080–2086 DOI: 10.1021/ed500970y
- novembre
    - Exploring the Structure and Function of the Chemistry Self-Concept Inventory with High School Chemistry Students Sara E. Nielsen and Ellen Yezierski, J. Chem. Educ., 2015, 92 (11), pp 1782–1789 DOI: 10.1021/acs.jchemed.5b00302 (+ ref sur CSCI)
- octobre
    - ChemDuino: Adapting Arduino for Low-Cost Chemical Measurements in Lecture and Laboratory Štěpánka Kubínová and Jan Šlégr, J. Chem. Educ., 2015, 92 (10), pp

1751–1753 DOI: 10.1021/ed5008102
    - Assembling and Using an LED-Based Detector To Monitor Absorbance Changes during Acid–Base Titrations Willy G. Santos and Éder T. G. Cavalheiro, J. Chem. Educ., 2015, 92 (10), pp 1709–1715 DOI: 10.1021/ed500931p
    - Improvements to the Whoosh Bottle Rocket Car Demonstration Dean J. Campbell, Felicia A. Staiger, and Chaitanya N. Jujjavarapu, J. Chem. Educ., 2015, 92 (10), pp 1687–1691 DOI: 10.1021/acs.jchemed.5b00518
    - Variations on the “Blue-Bottle” Demonstration Using Food Items That Contain FD&C Blue #1Felicia A. Staiger, Joshua P. Peterson, and Dean J. Campbell, J. Chem. Educ., 2015, 92 (10), pp 1684–1686 DOI: 10.1021/acs.jchemed.5b00190
    - Exploring the Everyday Context of Chemical Elements: Discovering the Elements of Car Components Antonio Joaquín Franco-Mariscal, J. Chem. Educ., 2015, 92 (10), pp 1672–1677 DOI: 10.1021/acs.jchemed.5b00164
    - Approaches To Determining the Oxidation State of Nitrogen and Carbon Atoms in Organic Compounds for High School Students Kamil Jurowski, Małgorzata Krystyna Krzeczkowska, and Anna Jurowska, J. Chem. Educ., 2015, 92 (10), pp 1645–1652 DOI: 10.1021/ed500645v
    - Students’ Understanding of Analogy after a CORE (Chemical Observations, Representations, Experimentation) Learning Cycle, General Chemistry Experiment Shirly Avargil, Mitchell R. M. Bruce, François G. Amar, and Alice E. Bruce, J. Chem. Educ., 2015, 92 (10), pp 1626–1638 DOI: 10.1021/acs.jchemed.5b00230
    - Uncovering Chemical Thinking in Students’ Decision Making: A Fuel-Choice Scenario Gregory Banks, Michael Clinchot, Steven Cullipher, Robert Huie, Jennifer Lambertz, Rebecca Lewis, Courtney Ngai, Hannah Sevian, Gabriela Szteinberg, Vicente Talanquer, and Melissa Weinrich, J. Chem. Educ., 2015, 92 (10), pp 1610–1618 DOI: 10.1021/acs.jchemed.5b00119
    - What Is a Kilogram in the Revised International System of Units (SI)? Richard S. Davis, J. Chem. Educ., 2015, 92 (10), pp 1604–1609 DOI: 10.1021/acs.jchemed.5b00285
    - The Mole and Amount of Substance in Chemistry and Education: Beyond Official Definitions Carmen J. Giunta, J. Chem. Educ. 2015, 92(10), 1593-1597 DOI: 10.1021/ed5007376
- septembre
    - Design, Implementation, and Evaluation of a Flipped Format General Chemistry Course Gabriela C. Weaver and Hannah G. Sturtevant, J. Chem. Educ., 2015, 92 (9), pp 1437–1448 DOI: 10.1021/acs.jchemed.5b00316
    - Defining Conceptual Understanding in General Chemistry Thomas A. Holme, Cynthia J. Luxford, and Alexandra Brandriet, J. Chem. Educ., 2015, 92 (9), pp 1477–1483 DOI: 10.1021/acs.jchemed.5b00218 ACS Editors' Choice
    - Understanding the Relationship Among Arrhenius, Brønsted–Lowry, and Lewis Theories Seoung-Hey Paik, J. Chem. Educ., 2015, 92 (9), pp 1484–1489 DOI: 10.1021/ed500891w
    - The Dynamic Density Bottle: A Make-and-Take, Guided Inquiry Activity on Density Thomas S. Kuntzleman, J. Chem. Educ., 2015, 92 (9), pp 1503–1506 DOI: 10.1021/ed500830w
    - Using a Laboratory Inquiry with High School Students To Determine the Reaction Stoichiometry of Neutralization by a Thermochemical Approach Tomoyuki Tatsuoka, Kana Shigedomi, and Nobuyoshi Koga, J. Chem. Educ., 2015, 92 (9), pp 1526–1530 DOI: 10.1021/ed500947t
- août
    - Teaching Beginning Chemistry Students Simple Lewis Dot Structures Peter Nassiff and Wendy A. Czerwinski, J. Chem. Educ., 2015, 92 (8), pp 1409–1411 DOI: 10.1021/ed5007162

  - Student Understanding of Intermolecular Forces: A Multimodal Study Melanie M. Cooper, Leah C. Williams, and Sonia M. Underwood, J. Chem. Educ., 2015, 92 (8), pp 1288–1298 DOI: 10.1021/acs.jchemed.5b00169
  - Why Ask Why? Melanie M. Cooper, J. Chem. Educ., 2015, 92 (8), pp 1273–1279 DOI: 10.1021/acs.jchemed.5b00203
- juillet
  - A Comparison of Carbon Dioxide Emissions from Electric Vehicles to Emissions from Internal Combustion Vehicles Daniel J. Berger and Andrew D. Jorgensen, J. Chem. Educ., 2015, 92 (7), pp 1204–1208 DOI: 10.1021/acs.jchemed.5b00125
  - Multiple-Choice Exams and Guessing: Results from a One-Year Study of General Chemistry Tests Designed To Discourage Guessing Mark L. Campbell, J. Chem. Educ., 2015, 92 (7), pp 1194–1200 DOI: 10.1021/ed500465q
  - Implementation and Student Testing of a Web-Based, Student-Centered Stereochemistry Tutorial Nicola J. Burrmann and John W. Moore, J. Chem. Educ., 2015, 92 (7), pp 1178–1187 DOI: 10.1021/ed500635d
- juin
  - Student Fabrication and Use of Simple, Low-Cost, Paper-Based Galvanic Cells To Investigate Electrochemistry Anchalee Chatmontree, Sanoe Chairam, Saksri Supasorn, Maliwan Amatatongchai, Purim Jarujamrus, Suparb Tamuang, and Ekasith Somsook, J. Chem. Educ., 2015, 92 (6), pp 1044–1048 DOI: 10.1021/acs.jchemed.5b00117
  - Understanding Atomic Structure: Is There a More Direct and Compelling Connection between Atomic Line Spectra and the Quantization of an Atom’s Energy? Robert C. Rittenhouse, J. Chem. Educ., 2015, 92 (6), pp 1035–1039 DOI: 10.1021/ed5007234
  - Implementing an Equilibrium Law Teaching Sequence for Secondary School Students To Learn Chemical Equilibrium Marco Ghirardi, Fabio Marchetti, Claudio Pettinari, Alberto Regis, and Ezio Roletto, J. Chem. Educ., 2015, 92 (6), pp 1008–1015 DOI: 10.1021/ed500658s
- mai
  - Integration of Nanoparticle-Based Paper Sensors into the Classroom: An Example of Application for Rapid Colorimetric Analysis of Antioxidants Erica Sharpe and Silvana Andreescu, J. Chem. Educ., 2015, 92 (5), pp 886–891 DOI: 10.1021/ed400851m
  - Laboratory Production of Lemon Liqueur (Limoncello) by Conventional Maceration and a Two-Syringe System To Illustrate Rapid Solid–Liquid Dynamic Extraction Daniele Naviglio, Domenico Montesano, and Monica Gallo, J. Chem. Educ., 2015, 92 (5), pp 911–915 DOI: 10.1021/ed400379g
  - Using Flavor Chemistry To Design and Synthesize Artificial Scents and Flavors Jessica L. Epstein, Michael Castaldi, Grishma Patel, Peter Telidecki, and Kevin Karakkatt, J. Chem. Educ., 2015, 92 (5), pp 954–957 DOI: 10.1021/ed500615a
- avril
  - Making Sense of Students’ Actions in an Open-Ended Virtual Laboratory Environment Ya’akov (Kobi) Gal, Oriel Uzan, Robert Belford, Michael Karabinos, and David Yaron, J. Chem. Educ., 2015, 92 (4), pp 610–616 DOI: 10.1021/ed500531a
  - A Molecular Explanation of How the Fog Is Produced when Dry Ice Is Placed in Water Thomas S. Kuntzleman, Nathan Ford, Jin-Hwan No, and Mark E. Ott, J. Chem. Educ., 2015, 92 (4), pp 643–648 DOI: 10.1021/ed400754n
  - The Importance of Kinetic Metastability: Some Common Everyday Examples William B. Jensen, J. Chem. Educ., 2015, 92 (4), pp 649–654 DOI: 10.1021/ed500743r
- mars
  - Forensic Chemistry: The Revelation of Latent Fingerprints J. Brent Friesen, J. Chem. Educ., 2015, 92 (3), pp 497–504 DOI: 10.1021/ed400597u et Activities Designed for Fingerprint Dusting and the Chemical Revelation of Latent Fingerprints J. Brent Friesen, J. Chem.

Educ., 2015, 92 (3), pp 505–508 DOI: 10.1021/ed500406v
  - Using Latex Balls and Acrylic Resin Plates To Investigate the Stacking Arrangement and Packing Efficiency of Metal Crystals Atsushi Ohashi, J. Chem. Educ., 2015, 92 (3), pp 512–516 DOI: 10.1021/ed5006954
  - The Oxidation of Iron: Experiment, Simulation, and Analysis in Introductory Chemistry Frederic E. Schubert, J. Chem. Educ., 2015, 92 (3), pp 517–520 DOI: 10.1021/ed5001729
- février
  - Intuitive Judgments Govern Students' Answering Patterns in Multiple-Choice Exercises in Organic Chemistry Nicole Graulich, J. Chem. Educ., 2015, 92 (2), pp 205–211 DOI: 10.1021/ed500641n
  - Students' Understandings of Acid Strength: How Meaningful Is Reliability When Measuring Alternative Conceptions? Stacey Lowery Bretz, LaKeisha McClary, Journal of Chemical Education 2015, 92, 2, 212-219 DOI: 10.1021/ed5005195
  - Students' Perceptions about the Use of Educational Games as a Tool for Teaching the Periodic Table of Elements at the High School Level Antonio Joaquín Franco-Mariscal, José María Oliva-Martínez, and M. L. Almoraima Gil, J. Chem. Educ., 2015, 92 (2), pp 278–285 DOI: 10.1021/ed4003578
- janvier
  - Electrolysis of Water in the Secondary School Science Laboratory with Inexpensive Microfluidics T. A. Davis, S. L. Athey, M. L. Vandevender, C. L. Crihfield, C. C. E. Kolanko, S. Shao, M. C. G. Ellington, J. K. Dicks, J. S. Carver, and L. A. Holland, J. Chem. Educ., 2015, 92 (1), pp 116–119 DOI: 10.1021/ed400757m
  - Designing, Constructing, and Using an Inexpensive Electronic Buret Tingting Cao, Qing Zhang, and Jonathan E. Thompson, J. Chem. Educ., 2015, 92 (1), pp 106–109 DOI: 10.1021/ed500509p
  - Low-Cost Magnetic Stirrer from Recycled Computer Parts with Optional Hot Plate Armando M. Guidote Jr., Giselle Mae M. Pacot, and Paul M. Cabacungan, J. Chem. Educ., 2015, 92 (1), pp 102–105 DOI: 10.1021/ed500153r
  - Using Wikis To Develop Collaborative Communities in an Environmental Chemistry Course Laura E. Pence and Harry E. Pence, J. Chem. Educ., 2015, 92 (1), pp 86–89 DOI: 10.1021/ed5001137

2014

- décembre
  - KinChem: A Computational Resource for Teaching and Learning Chemical Kinetics José Nunes da Silva Júnior, Mary Anne Sousa Lima, Eduardo Henrique Silva Sousa, Francisco Serra Oliveira Alexandre, and Antonio José Melo Leite Júnior, J. Chem. Educ., 2014, 91 (12), pp 2203–2205 DOI: 10.1021/ed500433c
  - From Voltage to Absorbance and Chemical Kinetics Using a Homemade Colorimeter Jorge Delgado, Iraís A. Quintero-Ortega, and Arturo Vega-Gonzalez, J. Chem. Educ., 2014, 91 (12), pp 2158–2162 DOI: 10.1021/ed400813c
  - X-ray Crystallography: One Century of Nobel Prizes Simona Galli, J. Chem. Educ., 2014, 91 (12), pp 2009–2012 DOI: 10.1021/ed500343x
- novembre
  - Developing and Implementing a Simple, Affordable Hydrogen Fuel Cell Laboratory in Introductory Chemistry Kristina Klara, Ning Hou, Allison Lawman, Liheng Wu, Drew Morrill, Alfred Tente, and Li-Qiong Wang, J. Chem. Educ., 2014, 91 (11), pp 1924–1928 DOI: 10.1021/ed4007875

  - Fostering Innovation through an Active Learning Activity Inspired by the Baghdad Battery Xu Lu and Franklin Anariba, J. Chem. Educ., 2014, 91 (11), pp 1929–1933 DOI: 10.1021/ed400869c
  - Using Paperclips To Explain Empirical Formulas to Students Peter Nassiff and Wendy A. Czerwinski, J. Chem. Educ., 2014, 91 (11), pp 1934–1938 DOI: 10.1021/ed4008793
  - Field and In-Lab Determination of Ca2+ in Seawater Robin Stoodley, Jose R. Rodriguez Nuñez, and Tessa Bartz, J. Chem. Educ., 2014, 91 (11), pp 1954–1957 DOI: 10.1021/ed4005722
- octobre
  - Evidence-Based Approaches to Improving Chemical Equilibrium InstructionJodi L. Davenport, Gaea Leinhardt, James Greeno, Kenneth Koedinger, David Klahr, Michael Karabinos, and David J. Yaron, J. Chem. Educ., 2014, 91 (10), pp 1517–1525 DOI: 10.1021/ed5002009
  - Conflicts in Chemistry: The Case of Plastics, A Role-Playing Game for High School Chemistry Students Deborah H. Cook J. Chem. Educ., 2014, 91 (10), pp 1580–1586 DOI: 10.1021/ed4007277
  - Using the Socioscientific Context of Climate Change To Teach Chemical Content and the Nature of Science Charity Flener-Lovitt, J. Chem. Educ., 2014, 91 (10), pp 1587–1593 DOI: 10.1021/ed4006985
  - Polymer Basics: Classroom Activities Manipulating Paper Clips To Introduce the Structures and Properties of Polymers Yunusa Umar, J. Chem. Educ., 2014, 91 (10), pp 1667–1670 DOI: 10.1021/ed400551c
- septembre - september 2014, special “AP chemistry curriculum framework”
  - Integrating “Big Ideas” with a Traditional Topic Sequence in the AP Chemistry Course: First Steps Christopher Kennedy, J. Chem. Educ., 2014, 91 (9), pp 1280–1283 DOI: 10.1021/ed5000263
  - How the Chemistry Modeling Curriculum Engages Students in Seven Science Practices Outlined by the College Board Erica Posthuma-Adams, J. Chem. Educ., 2014, 91 (9), pp 1284–1290 DOI: 10.1021/ed400911a
  - Integrating Particulate Representations into AP Chemistry and Introductory Chemistry Courses Stephen G. Prilliman, J. Chem. Educ., 2014, 91 (9), pp 1291–1298 DOI: 10.1021/ed5000197
  - Effects of the Flipped Classroom Model on Student Performance for Advanced Placement High School Chemistry Students David Schultz, Stacy Duffield, Seth C. Rasmussen, and Justin Wageman, J. Chem. Educ., 2014, 91 (9), pp 1334–1339 DOI: 10.1021/ed400868x
  - The New AP Chemistry Exam: Its Rationale, Content, and Scoring Paul D. Price and Roger W. Kugel, J. Chem. Educ., 2014, 91 (9), pp 1340–1346 DOI: 10.1021/ed500034t
  - Guide To Developing High-Quality, Reliable, and Valid Multiple-Choice Assessments Marcy H. Towns, J. Chem. Educ., 2014 91 (9), pp 1426–1431 DOI: 10.1021/ed500076x (article ACS Editors' Choice open access).
- août
  - Chemistry Education: Ten Heuristics To Tame Vicente Talanquer, J. Chem. Educ., 2014, 91 (8), pp 1091–1097 DOI: 10.1021/ed4008765
  - The Kimball Free-Cloud Model: A Failed Innovation in Chemical Education? William B. Jensen, J. Chem. Educ., 2014, 91 (8), pp 1106–1124 DOI: 10.1021/ed400341d
  - The Development of the Redox Concept Inventory as a Measure of Students’ Symbolic and Particulate Redox Understandings and Confidence Alexandra R. Brandriet and Stacey Lowery Bretz, J. Chem. Educ., 2014, 91 (8), pp 1132–1144 DOI: 10.1021/ed500051n
  - A Simple Educational Method for the Measurement of Liquid Binary Diffusivities Nicholas P. Rice, Martin P. de Beer, and Mark E. Williamson, J. Chem. Educ., 2014, 91 (8), pp 1185–1190 DOI: 10.1021/ed400776s

  - PhET Interactive Simulations: Transformative Tools for Teaching Chemistry Emily B. Moore, Julia M. Chamberlain, Robert Parson, and Katherine K. Perkins, J. Chem. Educ., 2014, 91 (8), pp 1191–1197 DOI: 10.1021/ed4005084
  - A Discovery Chemistry Experiment on Buffers Suzanne E. Kulevich, Richard S. Herrick, and Kenneth V. Mills, J. Chem. Educ., 2014, 91 (8), pp 1207–1211 DOI: 10.1021/ed400377a
- juillet
  - Differences in General Cognitive Abilities and Domain-Specific Skills of Higher- and Lower-Achieving Students in Stoichiometry Ozcan Gulacar, Ingo Eilks, and Charles R. Bowman, J. Chem. Educ., 2014, 91 (7), pp 961–968 DOI: 10.1021/ed400894b
- juin
  - Development of a Handmade Conductivity Measurement Apparatus and Application to Vegetables and Fruits Seng Set and Masakazu Kita, J. Chem. Educ., 2014, 91 (6), pp 892–897 DOI: 10.1021/ed400611q
  - An Effective Method of Introducing the Periodic Table as a Crossword Puzzle at the High School Level Sushama D. Joag, J. Chem. Educ., 2014, 91 (6), pp 864–867 DOI: 10.1021/ed400091w
- mai
  - Open-Source Electronics As a Technological Aid in Chemical Education Pawel L. Urban, J. Chem. Educ., 2014, 91 (5), pp 751–752 DOI: 10.1021/ed4009073 (+ ce site)
  - Construction of a Photometer as an Instructional Tool for Electronics and Instrumentation Robert L. McClain, J. Chem. Educ., 2014, 91 (5), pp 747–750 DOI: 10.1021/ed400784x
  - Application of the Second Law of Thermodynamics To Explain the Working of Toys Erick Castellón, J. Chem. Educ., 2014, 91 (5), pp 687–691 DOI: 10.1021/ed400085z
  - Using Audience Response Systems during Interactive Lectures To Promote Active Learning and Conceptual Understanding of Stoichiometry Sandra Cotes and José Cotuá, J. Chem. Educ., 2014, 91 (5), pp 673–677 DOI: 10.1021/ed400111m
  - Evaluating the Content and Response Process Validity of Data from the Chemical Concepts Inventory Paul Schwartz and Jack Barbera, Journal of Chemical Education 2014, 91 (5), 630-640. DOI: 10.1021/ed400716p
- avril
  - The Aqueous Proton Is Hydrated by More Than One Water Molecule: Is the Hydronium Ion a Useful Concept? Todd P. Silverstein, J. Chem. Educ., 2014, 91 (4), pp 08–610 DOI: 10.1021/ed400559t (cf. aussi cet article, wp1 et wp2)
  - Use of Freely Available and Open Source Tools for In Silico Screening in Chemical Biology Gareth W. Price, Phillip S. Gould, and Andrew Marsh, J. Chem. Educ., 2014, 91 (4), pp 602–604 DOI: 10.1021/ed400302u
  - Synthesis, Dehydration, and Rehydration of Calcium Sulfate (Gypsum, Plaster of Paris) Gergely Sirokman, J. Chem. Educ., 2014, 91 (4), pp 557–559 DOI: 10.1021/ed400004b (TP)
  - General Procedure for the Easy Calculation of pH in an Introductory Course of General or Analytical Chemistry Gemma Cepriá and Luis Salvatella, J. Chem. Educ., 2014, 91 (4), pp 524–530 DOI: 10.1021/ed400089j
- mars
  - Quantifying the Soda Geyser Christopher J. Huber and Aaron M. Massari, J. Chem. Educ., 2014, 91 (3), pp 428–431 DOI: 10.1021/ed300694n
  - Unpacking the Meaning of the Mole Concept for Secondary School Teachers and Students Su-Chi Fang, Christina Hart, and David Clarke, J. Chem. Educ., 2014, 91 (3), pp 351–356 DOI: 10.1021/ed400128x
  - The Biology and Chemistry of Brewing: An Interdisciplinary Course Paul D. Hooker, William A. Deutschman, and Brian J. Avery, J. Chem. Educ., 2014, 91 (3), pp 336–339 DOI:

10.1021/ed400523m
    - SQER3: An Instructional Framework for Using Scientific Inquiry To Design Classroom Demonstrations Donna M. Chamely-Wiik, Jerome E. Haky, Deborah W. Louda, and Nancy Romance, J. Chem. Educ., 2014, 91 (3), pp 329–335 DOI: 10.1021/ed300689n (yc questionnement conductivité boisson énergisante)
    - Development of the Bonding Representations Inventory To Identify Student Misconceptions about Covalent and Ionic Bonding Representations Cynthia J. Luxford and Stacey Lowery Bretz, J. Chem. Educ., 2014, 91 (3), pp 312–320, ET **Article ASAP & ACS Editors' Choice** DOI: 10.1021/ed400700q
- février
    - ZnO-Based Sunscreen: The Perfect Example To Introduce Nanoparticles in an Undergraduate or High School Chemistry Lab Wanda J. Guedens, Monique Reynders, Heidi Van den Rul, Ken Elen, An Hardy, and Marlies K. Van Bael, J. Chem. Educ., 2014, 91 (2), pp 259–263 DOI: 10.1021/ed300851a
    - A New Higher Education Curriculum in Organic Chemistry: What Questions Should Be Asked? David L. Lafarge, Ludovic M. Morge, and Martine M. Méheut, J. Chem. Educ., 2014, 91 (2), pp 173–178 DOI: 10.1021/ed300746e + cette thèse
    - Alcohol Pharmacology Education Partnership: Using Chemistry and Biology Concepts To Educate High School Students about Alcohol Elizabeth A. Godin, Nicole Kwiek, Suzanne S. Sikes, Myra J. Halpin, Carolyn A. Weinbaum, Lane F. Burgette, Jerome P. Reiter, and Rochelle D. Schwartz-Bloom, J. Chem. Educ., 2014, 91 (2), pp 165–172 DOI: 10.1021/ed4000958
- janvier
    - Chemistry in Past and New Science Frameworks and Standards: Gains, Losses, and Missed Opportunities Vicente Talanquer and Hannah Sevian, J. Chem. Educ., 2014, 91 (1), pp 24–29 DOI: 10.1021/ed400134c
    - A Teaching Sequence for Learning the Concept of Chemical Equilibrium in Secondary School Education Marco Ghirardi, Fabio Marchetti, Claudio Pettinari, Alberto Regis, and Ezio Roletto, J. Chem. Educ., 2014, 91 (1), pp 59–65 DOI: 10.1021/ed3002336
    - Using Paper-Based Diagnostics with High School Students To Model Forensic Investigation and Colorimetric Analysis Rebekah R. Ravgiala, Stefi Weisburd, Raymond Sleeper, Andres Martinez, Dorota Rozkiewicz, George M. Whitesides, and Kathryn A. Hollar, J. Chem. Educ., 2014, 91 (1), pp 107–111 DOI: 10.1021/ed300261a
    - Microfluidics for High School Chemistry Students Melissa Hemling, John A. Crooks, Piercen M. Oliver, Katie Brenner, Jennifer Gilbertson, George C. Lisensky, and Douglas B. Weibel, J. Chem. Educ., 2014, 91 (1), pp 112–115 DOI: 10.1021/ed4003018

2013

- Décembre
    - How Multimedia-Based Learning and Molecular Visualization Change the Landscape of Chemical Education Research Loretta L. Jones, J. Chem. Educ., 2013, 90 (12), pp 1571–1576 DOI: 10.1021/ed4001206
    - Using Ordered Multiple-Choice Items To Assess Students' Understanding of the Structure and Composition of Matter Jan C. Hadenfeldt, Sascha Bernholt, Xiufeng Liu, Knut Neumann, and Ilka Parchmann, J. Chem. Educ., 2013, 90 (12), pp 1602–1608 DOI: 10.1021/ed3006192
    - Roles of Terminology, Experience, and Energy Concepts in Student Conceptions of Freezing and Boiling Paul G. Jasien , J. Chem. Educ., 2013, 90 (12), pp 1609–1615 DOI: 10.1021/ed2007668

    - What Do Chemists Mean When They Talk about Elements? Elena Ghibaudi, Alberto Regis, and Ezio Roletto, J. Chem. Educ., 2013, 90 (12), pp 1626–1631 DOI: 10.1021/ed3004275
    - Solution Preparation and Conductivity Measurements: An Experiment for Introductory Chemistry Zeynep Eslek and Aysen Tulpar, J. Chem. Educ., 2013, 90 (12), pp 1665–1667 DOI: 10.1021/ed300593t
    - Following Precipitation Reactions with Conductivity Measurements Zeynep Eslek and Aysen Tulpar, J. Chem. Educ., 2013, 90 (12), pp 1668–1670 DOI: 10.1021/ed300594
- Novembre
    - When Atoms Want Vicente Talanquer, J. Chem. Educ., 2013, 90 (11), pp 1419–1424 DOI: 10.1021/ed400311x
    - Climate Change: A Demonstration with a Teaching Moment Steven Murov, J. Chem. Educ., 2013, 90 (11), pp 1486–1487 DOI: 10.1021/ed400363u
- Octobre
    - Easy Demonstration of the Marangoni Effect by Prolonged and Directional Motion: "Soap Boat 2.0" Charles Renney, Ashley Brewer, and Tiddo Jonathan Mooibroek J. Chem. Educ., 2013, 90 (10), pp 1353–1357 DOI: 10.1021/ed400316a
    - An Open-Ended Project: Building a High Performance, yet Simple, Household Battery Ping Y. Furlan, Thomas Krupa, Humza Naqiv, and Kyle Anderson, J. Chem. Educ., 2013, 90 (10), pp 1341–1345 DOI: 10.1021/ed4000603
    - Polytomous versus Dichotomous Scoring on Multiple-Choice Examinations: Development of a Rubric for Rating Partial Credit Megan L. Grunert, Jeffrey R. Raker, Kristen L. Murphy, and Thomas A. Holme, J. Chem. Educ., 2013, 90 (10), pp 1310–1315, DOI: 10.1021/ed400247d
- Septembre
    - Building Molecular Models Using Screw-On Bottle Caps Dawid Siodłak, J. Chem. Educ., 2013, 90 (9), pp 1247–1249 DOI: 10.1021/ed400126p
    - Introducing Colorimetric Analysis with Camera Phones and Digital Cameras: An Activity for High School or General Chemistry Eric Kehoe and R. Lee Penn, J. Chem. Educ., 2013, 90 (9), pp 1191–1195 DOI: 10.1021/ed300567p
    - Changing the First-Year Chemistry Laboratory Manual To Implement a Problem-Based Approach That Improves Student Engagement Thamara Laredo, J. Chem. Educ., 2013, 90 (9), pp 1151–1154 DOI: 10.1021/ed300313m
    - A Process for Developing Introductory Science Laboratory Learning Goals To Enhance Student Learning and Instructional Alignment Jennifer M. Duis, Laurel L. Schafer, Sophia Nussbaum, and Jaclyn J. Stewart, J. Chem. Educ., 2013, 90 (9), pp 1144–1150 DOI: 10.1021/ed4000102
    - Chemistry, Life, the Universe, and Everything: A New Approach to General Chemistry, and a Model for Curriculum Reform Melanie Cooper and Michael Klymkowsky, J. Chem. Educ., 2013, 90 (9), pp 1116–1122 DOI: 10.1021/ed300456y
- Août
    - Fastest Fingers: A Molecule-Building Game for Teaching Organic Chemistry Michael L. Eastwood, J. Chem. Educ., 2013, 90 (8), pp 1038–1041 DOI: 10.1021/ed3004462
    - The Color-Changing Sports Drink: An Ingestible Demonstration Rhonda L. Stoddard and J. Scott McIndoe, J. Chem. Educ., 2013, 90 (8), pp 1032–1034 DOI: 10.1021/ed3007346
    - Discovering Periodicity: Hands-On, Minds-On Organization of the Periodic Table by Visualizing the Unseen Jodye Selco, Mary Bruno, and Sue Chan, J. Chem. Educ., 2013, 90 (8), pp 995–1002 DOI: 10.1021/ed300623b
    - Effect of Teaching Metacognitive Learning Strategies on Performance in General Chemistry Courses Elzbieta Cook, Eugene Kennedy, and Saundra Y. McGuire J. Chem. Educ., 2013, 90 (8), pp 961–967 DOI: 10.1021/ed300686h

- Juillet
    - The Method of Continuous Variation: A Laboratory Investigation of the Formula of a Precipitate William R. Furlong , Miles A. Rubinski , and Ramee Indralingam, J. Chem. Educ., 2013, 90 (7), pp 937–940 DOI: 10.1021/ed3004337
    - Fact or Fiction? General Chemistry Helps Students Determine the Legitimacy of Television Program Situations Mark A. Milanick and Ruth L. Prewitt, J. Chem. Educ., 2013, 90 (7), pp 904–906 DOI: 10.1021/ed300155p
    - Incorporating a Soap Industry Case Study To Motivate and Engage Students in the Chemistry of Daily Life Mohammad A. Chowdhury, J. Chem. Educ., 2013, 90 (7), pp 866–872 DOI: 10.1021/ed300072e
    - Chemistry Education: Ten Facets To Shape Us Vicente Talanquer, J. Chem. Educ., 2013, 90 (7), pp 832–838 DOI: 10.1021/ed300881v
- Juin
    - Plant Pigment Identification: A Classroom and Outreach Activity Kathleen C. A. Garber et al J. Chem. Educ., 2013, 90 (6), pp 755–759 DOI: 10.1021/ed200823t
    - Concept Learning versus Problem Solving: Evaluating a Threat to the Validity of a Particulate Gas Law Question Michael J. Sangern C. Kevin Vaughn , and David A. Binkley J. Chem. Educ., 2013, 90 (6), pp 700–709 DOI: 10.1021/ed200809a
    - Chemistry and the Next Generation Science Standards, Melanie M. Cooper, J. Chem. Educ., 2013, 90 (6), pp 679–680 DOI: 10.1021/ed400284c
- Mai
- Avril
    - Sustainable Mobility, Future Fuels, and the Periodic Table, Timothy J. Wallington et al, J. Chem. Educ., 2013, 90 (4), pp 440–445 DOI: 10.1021/ed3004269
- Mars
    - Opera and Poison: A Secret and Enjoyable Approach To Teaching and Learning Chemistry, João Paulo André, J. Chem. Educ., 2013, 90 (3), pp 352–357 DOI: 10.1021/ed300445b
    - Chemistry on the Go: Review of Chemistry Apps on Smartphones, Diana Libman and Ling Huang, J. Chem. Educ., 2013, 90 (3), pp 320–325 DOI: 10.1021/ed300329e
    - What Faculty Interviews Reveal about Meaningful Learning in the Undergraduate Chemistry Laboratory Stacey Lowery Bretz, Michael Fay, Laura B. Bruck, Marcy H. Towns, J. Chem. Educ. 2013, 90(3), 281-288 DOI: 10.1021/ed300384r
- février
- janvier
    - A Comprehensive General Chemistry Demonstration, Ryan D. Sweeder and Kathleen A. Jeffery, J. Chem. Educ., 2013, 90 (1), pp 96–98 DOI: 10.1021/ed300367y

Les plus lus en 2013 :

- Cyclic voltammetry, Peter T. Kissinger, William R. Heineman, DOI: 10.1021ed060p702
- A Guide to the Elements (Stwertka, Albert) Daniel Berger DOI: 10.1021/ed074p627.1
- Opera and Poison: A Secret and Enjoyable Approach To Teaching and Learning Chemistry, Jo o Paulo Andr DOI: 10.1021/ed300445b
- Chemistry on the Go: Review of Chemistry Apps on Smartphones, Diana Libman, Ling Huang DOI: 10.1021/ed300329e
- Aerobic Alcohol Oxidation Using a Copper(I)/TEMPO Catalyst System: A Green, Catalytic Oxidation Reaction for the Undergraduate Organic Chemistry Laboratory, Nicholas J. Hill, Jessica M. Hoover, Shannon S. Stahl, DOI: 10.1021/ed300368q
- Chemistry and the Next Generation Science Standards, Melanie M. Cooper DOI: 10.1021/ed400284c
- A Comprehensive General Chemistry Demonstration, Ryan D. Sweeder, Kathleen A. Jeffery DOI:

10.1021/ed300367y
- Online Courses in Chemistry: Salvation or Downfall?, Norbert J. Pienta DOI: 10.1021/ed400097s
- Beer's law without calculus, Richard C. Pinkerton DOI: 10.1021/ed041p366
- Learning Chemistry for an Exciting (and Uncertain) Future, Catherine H. Middlecamp DOI: 10.1021/ed400078m

2012

- Chemistry Education: Ten Dichotomies We Live By, Vicente Talanquer, J. Chem. Educ., 2012, 89 (11), pp 1340–1344 DOI: 10.1021/ed300150r
- We Need To Update the Teaching of Valence Theory, Huw O. Pritchard, J. Chem. Educ., 2012, 89 (3), pp 301–303 DOI: 10.1021/ed2004752

2011

- My Acid Can Beat Up Your Acid! Alice Putti J. Chem. Educ., 2011, 88 (9), pp 1278–1280 DOI: 10.1021/ed100849b
- What Can Be Learned from Laboratory Activities? Revisiting 32 Years of Research Michael R. Abraham, J. Chem. Educ., 2011, 88 (8), pp 1020–1025 DOI: 10.1021/ed100774d
- What’s the Diagnosis? An Inquiry-Based Activity Focusing on Mole−Mass Conversions Laura B. Bruck, Marcy H. Towns, J. Chem. Educ. 2011, 88(4), 440-442 DOI: 10.1021/ed100466j

2010

- You Can’t Get There from Here A. H. Johnstone, J. Chem. Educ. 2010, 87, 1, 22–29 DOI: 10.1021/ed800026d

2009

- Chemistry in the National Science Education Standards: Models for Meaningful Learning in the High School Chemistry Classroom, 2nd Edition (Stacey Lowery Bretz, Ed.), book review, J. Chem. Educ. 2009, 86(4), 435 DOI: 10.1021/ed086p435

2008

- Teaching Avogadro's Hypothesis and Helping Students to See the World Differently Brett Criswell, J. Chem. Educ., 2008, 85 (10), p 1372 DOI: 10.1021/ed085p1372
- The Chemical Adventures of Sherlock Holmes: The Serpentine Remains Ken Shaw, J. Chem. Educ., 2008, 85 (4), p 507 DOI: 10.1021/ed085p507

2007

- Mistake of Having Students Be Mendeleev for Just a Day, Brett Criswell, J. Chem. Educ., 2007, 84 (7), p 1140 DOI: 10.1021/ed084p1140

2006

- Negative pH Does Exist Kieran F. Lim, J. Chem. Educ., 2006, 83 (10), p 1465 DOI: 10.1021/ed083p1465
- Using a Spreadsheet to Fit Experimental pH Titration Data to a Theoretical Expression: Estimation of Analyte Concentration and Ka John Burnett and William A. Burns, J. Chem. Educ. 2006, 83, 8, 1190 DOI: 10.1021/ed083p1190
- Give Them Money: The Boltzmann Game, a Classroom or Laboratory Activity Modeling Entropy Changes and the Distribution of Energy in Chemical Systems Bridget Michalek, Robert M. Hanson, J. Chem. Educ., 2006, 83 (4), p 581 DOI: 10.1021/ed083p581

2005

- Equilibrium Constants and Water Activity David Keeports, J. Chem. Educ., 2005, 82 (7), p 999 DOI: 10.1021/ed082p999
- Evaluating Students' Conceptual Understanding of Balanced Equations and Stoichiometric Ratios Using a Particulate Drawing Michael J. Sanger, J. Chem. Educ., 2005, 82 (1), p 131 DOI: 10.1021/ed082p131

2004

- Critical Thinking in the Chemistry Classroom and Beyond Claus Jacob , J. Chem. Educ. 2004, 81, 8, 1216 DOI: 10.1021/ed081p1216

2002

- An Inventory for Alternate Conceptions among First-Semester General Chemistry Students Douglas R. Mulford & William R. Robinson, J. Chem. Educ., 2002, 79 (6), p 739 DOI: 10.1021/ed079p739 (y compris **tests**)

2000

- Developing an Intuitive Approach to Moles Hans de Grys, Dawn M. Wakeley, J. Chem. Educ. 2000, 77(8), 1007 DOI: 10.1021/ed077p1007
- Illustrating thermodynamic concepts using a hero's engine Pedro L. Muiño, and James R. Hodgson, J. Chem. Educ., 2000, 77 (5), p 615 DOI: 10.1021/ed077p615
- A quantitative literature review of cooperative learning effects on high school and college chemistry achievement Bowen, C., J. Chem. Educ. 2000, 77(1), 116– 119 DOI: 10.1021/ed077p116

1999

- A Review of Laboratory Instruction Styles Daniel S. Domin, J. Chem. Educ., 1999, 76 (4), p 543 DOI: 10.1021/ed076p543
- Improving Teaching and Learning through Chemistry Education Research: A Look to the Future Dorothy Gabel, J. Chem. Educ., 1999, 76 (4), p 548 DOI: 10.1021/ed076p548

- The Complexity of Teaching and Learning Chemical Equilibrium Louise Tyson, David F. Treagust, Robert B. Bucat, J. Chem. Educ. 1999, 76(4), 554 DOI: 10.1021/ed076p554

1998

- Demonstrations of the Enormity of Avogadro's Number Damon Diemente, J. Chem. Educ. 1998, 75(12), 1565 DOI: 10.1021/ed075p1565

1997

- Research in Chemical Education - the Third Branch of Our Profession Journal of Chemical Education 1997, 74 (9) , 1076. DOI: 10.1021/ed074p1076
- Buffer Index and Buffer Capacity for a Simple Buffer Solution Veronica Chiriac, and Gabriel Balea, J. Chem. Educ., 1997, 74 (8), p 937 DOI: 10.1021/ed074p937
- Turkish Secondary Students' Conceptions of the Introductory Concepts Alipasa Ayas, Ayhan Demirbas, J. Chem. Educ. 1997, 74(5), 518 DOI: 10.1021/ed074p518

1996

- What's a Mole for? Sheryl Dominic, J. Chem. Educ. 1996, 73(4), 309 DOI: 10.1021/ed073p309
- The Size of a Mole Miriam Toloudis, J. Chem. Educ. 1996, 73(4), 348 DOI: 10.1021/ed073p348

1994

- The Mole Concept: Developing an Instrument To Assess Conceptual Understanding Shanthi R. Krishnan Ann C. Howe, J. Chem. Educ. 1994, 71(8), 653 DOI: 10.1021/ed071p653

1993

- A mole of M&M's Carmela Merlo, Kathleen E. Turner, J. Chem. Educ., 1993, 70(6), 453 DOI: 10.1021/ed070p453

1992

- A mole of salt crystals—Or how big is the Avogadro number? William Hoyt, J. Chem. Educ., 1992, 69(6), 496 DOI: 10.1021/ed069p496

1991

- The critical point and the number of degrees of freedom Rubin Battino, J. Chem. Educ. 1991, 68, 4, 276 DOI: 10.1021/ed068p276
- A mole mnemonic Bernard S. Brown, J. Chem. educ. 1991, 68(12), 1039 DOI: 10.1021/ed068p1039.2

1990

- Concept learning versus problem solving: Revisited Barbara A. Sawrey, J. Chem. Educ. 1990, 67(3), 253 DOI: 10.1021/ed067p253
- A proposition about the quantity of which mole is the SI unit Romeu C. Rocha-Filho, J. Chem. Educ. 1990, 67(2), 139 DOI: 10.1021/ed067p139

1989

- How to visualize Avogadro's number Henk van Lubeck, J. Chem. Educ., 1989, 66(9), 762 DOI: 10.1021/ed066p762

1987

- Concept learning versus problem solving: Is there a difference? Susan C. Nurrenbern, Miles Pickering, J. Chem. Educ. 1987, 64(6), 508 DOI: 10.1021/ed064p508

1986

- Analogies for Avogadro's number Paul S. Poskozim, James W. Wazorick, Permsook Tiempetpaisal, Joyce Albin Poskozim, J. Chem. Educ. 1986, 63(2), 125 DOI: 10.1021/ed063p125

1985

- Gram formula weights and fruit salad Wayne L. Felty, J. Chem. Educ. 1985, 62(1), 61 DOI: 10.1021/ed062p61.1
- Five Avogadro's number problems David Todd, J. Chem. Educ. 1985, 62(1), 76 DOI: 10.1021/ed062p76

1984

- Abegg, Lewis, Langmuir, and the octet rule William B. Jensen, J. Chem. Educ., 1984, 61 (3), p 191 DOI: 10.1021/ed061p191

1982

- Investigation of secondary school students' understanding of the mole concept in Italy R. Cervellati A. Montuschi D. Perugini N. Grimellini-Tomasini B. Pecori Balandi, J. Chem. Educ. 1982, 59(10), 852 DOI: 10.1021/ed059p852
- "Chemical Amount" or "Chemiance": Proposed names for the quantity measured in mole units George Gorin, J. Chem. Educ. 1982, 59(6), 508 DOI: 10.1021/ed059p508

1978

- The mole Doris Kolb, J. Chem. Educ., 1978, 55(11), 728 DOI: 10.1021/ed055p728

1976

- A study of student perceptions of the mole concept S. Novick J. Menis, J. Chem. Educ. 1976, 53(11) 720 DOI: 10.1021/ed053p720

1975

- Piaget for chemists. Explaining what "good" students cannot understand J. Dudley Herron J. Chem. Educ., 1975, 52 (3), p 146 DOI: 10.1021/ed052p146 **article d'intérêt didactique**

1973

- The mole and Avogadro's number. A forced fusion of ideas for teaching purposes Robert M. Hawthorne Jr., J. Chem. Educ., 1973, 50(4), 282 DOI: 10.1021/ed050p282

1961

- The mole and related quantities E. A. Guggenheim, J. Chem. Educ., 1961, 38(2), 86 DOI: 10.1021/ed038p86

1952

- A simple demonstration of the Carnot cycle George Calingaert, J. Chem. Educ., 1952, 29 (8), p 405 DOI: 10.1021/ed029p405

1929

- Some methods of determining Avogadro's number Arthur A. Sunier, J. Chem. Educ. 1929,6(2), 299 DOI: 10.1021/ed006p299

Parmis les plus lus entre juillet et septembre 2012

- Articles
  - Orbitals: Some Fiction and Some Facts, Jochen Autschbach (DOI: 10.1021/ed200673w)
  - 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)
- Editorials

  - Share the Wonder, Deanna M. Cullen (DOI: 10.1021/ed300459v)
  - What We Do and Don't Know about Teaching and Learning Science: The National Research Council Weighs in on Discipline-Based Education Research, Norbert J. Pienta (DOI: 10.1021/ed300354t)
  - 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)
  - What Are the "Foundations of Inorganic Chemistry"? Two Answers, Gary P. Wulfsberg (DOI: 10.1021/ed200678u)
- Letters
  - The Misinterpretation of Entropy as "Disorder", Frank L. Lambert (DOI: 10.1021/ed2002708)
  - Falling Enzyme Activity as Temperature Rises: Negative Activation Energy or Denaturation?, Todd P. Silverstein (DOI: 10.1021/ed200497r)
  - Retire the Hybrid Atomic Orbital? Not So Fast, Nivaldo J. Tro (DOI: 10.1021/ed2006289)
- Classroom Activities
  - JCE Classroom Activity #105. A Sticky Situation: Chewing Gum and Solubility, Ingrid Montes-González, Jose A. Cintron-Maldonado, Ilia E. Pérez-Medina, Verónica Montes-Berríos, Saurie N. Román-López (DOI: 10.1021/ed800135j)
  - Color My Nanoworld, Adam D. McFarland, Christy L. Haynes, Chad A. Mirkin, Richard P. Van Duyne, Hilary A. Godwin (DOI: 10.1021/ed081p544A)
  - JCE Classroom Activity #112: Guessing the Number of Candies in the Jar-Who Needs Guessing?, Stephanie Ryan, Donald J. Wink (DOI: 10.1021/ed1009943)
- Laboratory Experiments
  - Preparation of Gold Nanoparticles Using Tea: A Green Chemistry Experiment, R. K. Sharma, Shikha Gulati, Shilpa Mehtan (DOI: 10.1021/ed2002175)
  - Evaluating Sustainability: Soap versus Biodiesel Production from Plant Oils, Nicola L. B. Pohl, Jennifer M. Streff, Steve Brokman (DOI: 10.1021/ed100451d)
  - Discovering 13C NMR, 1H NMR, and IR Spectroscopy in the General Chemistry Laboratory through a Sequence of Guided-Inquiry Exercises, H. Darrell Iler, David Justice, Shari Brauer, Amanda Landis (DOI: 10.1021/ed2005664)
- Book & Media Reviews
  - Review of Letters to a Young Chemist, Sarai Flynn, Markel Harris, Luis D. Montes (DOI: 10.1021/ed3003397)
  - Review of A Student's Guide to Data and Error Analysis, Lawton Shaw (DOI: 10.1021/ed300332s)
  - Review of Nature of Science in General Chemistry Textbooks, Thomas A. Holme (DOI: 10.1021/ed300372y)

Parmis les plus lus entre lus entre avril et juin 2012

- Articles
  - Beer as a Teaching Aid in the Classroom and Laboratory, Jasminka N. Korolija, Jovica V. Plavsic, Dragan Marinkovic, Ljuba M. Mandic
  - The infrared spectra of four isotopes in HCl: A molecular structure experiment, L. Willard Richards
  - The Chemistry of Perfume: A Laboratory Course for Nonscience Majors, Jennifer L. Logan,

Craig E. Rumbaugh
- Reports
  - The Environmental Chemistry of Trace Atmospheric Gases, William C. Trogler
  - A Spreadsheet Exercise To Teach the Fourier Transform in FTIR Spectrometry, Brent Shepherd and Michael K. Bellamy
  - QR-Coded Audio Periodic Table of the Elements: A Mobile-Learning Tool, Vasco D. B. Bonifácio
- Letters
  - The Misinterpretation of Entropy as “Disorder”, Frank L. Lambert
  - Retire the Hybrid Atomic Orbital? Not So Fast, Nivaldo J. Tro
    - En réponse à l'article Is It Time To Retire the Hybrid Atomic Orbital? de Alexander Grushow
  - Replace Band Theory in Introductory Chemistry, Stephen J. Hawkes
- Editorials
  - Navigating the Landscape of Assessment, Stacey Lowery Bretz
  - What Do You Do? I Teach Chemistry!, Gregory T. Rushton
  - Improving High School Chemistry Teaching via the “Trickle Up” Effect: A Perspective on the New AP Chemistry Curriculum Framework, Gregory T. Rushton
- Commentaries
  - Hyperconjugation: A More Coherent Approach, Joseph J. Mullins
  - What Are Elements and Compounds?, Rollie J. Myers
  - Summer 2012 Book and Media Recommendations, Cheryl B. Frech, Brian P. Coppola, Hal Harris, and C. M. Woodbridge
- Laboratory Experiments
  - Isolation and Analysis of Essential Oils from Spices, Stephen K. O’Shea, Daniel D. Von Riesen, and Lauren L. Rossi
  - Synthesis of Two Local Anesthetics from Toluene: An Organic Multistep Synthesis in a Project-Oriented Laboratory Course, Patricia Demare and Ignacio Regla
  - Galvanic Cells and the Determination of Equilibrium Constants, Jonathan L. Brosmer and Dennis G. Peters

"classroom activities" les plus populaires des 15 dernières années (1997-2012)

- JCE Classroom Activities Virtual Issue: Celebrating 15 Years with the 15 Greatest Hits, 1997–2012, Erica K. Jacobsen
- 62 Color My Nanoworld, A. D. McFarland, C. L. Haynes, C. A. Mirkin, R. P. Van Duyne, H. A. Godwin
- 89 Colorful Lather Printing, S. A. S. Hershberger, M. Nance, A. M. Sarquis, L. M. Hogue
- 105 A Sticky Situation: Chewing Gum and Solubility, I. M. Montes-González, J. A. Cintron-Maldonado, I. E. Párez-Medina, V. Montes-Berríos, S. N. Román-López
- 106 Sequestration of Divalent Metal Ion by Superabsorbent Polymer in Diapers, C. Yueh-Huey, J.-Y. Lin, L.-P. Lin, H. Liang, J.-F. Yaung
- 67 Flame Tests: Which Ion Causes the Color?, M. J. Sanger
- 107 And the Oscar Goes to...A Chemist!, C. R. Howder, K. D. Groen, T. S. Kuntzleman
- 108 Using Archimedes’ Principle To Explain Floating and Sinking Cans, M. J. Sanger
- 104 A Novel, Simplified Scheme for Plastics Identification, M. E. Harris, B. Walker
- 109 My Acid Can Beat Up Your Acid!, A. Putti
- 73 Colors in Liquid Crystals, G. Lisensky, E. Boatman

- 103 Enjoy a Hot Drink, Thanks to Chemistry!, G. Pinto, M. T. Oliver-Hoyo, J. A. Llorens-Molina
- 93 Aluminum—Air Battery, M. Tamez, J. H. Yu
- 100 How Heavy Is a Balloon? Using the Ideal Gas Law, B. O. Johnson, H. Van Milligan
- 41 Tick Tock, a Vitamin C Clock, S. W. Wright
- 91 Fluorescent Fun: Using a Homemade Fluorometer, M. F. Wahab

Forensic Chemistry Resources from the Journal of Chemical Education

Solving a Mystery

- The Chemical Adventures of Sherlock Holmes: Sherlock Holmes Goes Virtual, Erica K. Jacobsen, Journal of Chemical Education 2011 88 (4), 368-369 DOI: 10.1021/ed200021z
- Crime Scene Investigation in the Art World: The Case of the Missing Masterpiece, Katharine J. Harmon, Lisa M. Miller, and Julie T. Millard Journal of Chemical Education 2009 86 (7), 817 DOI: 10.1021/ed086p817
- Activities for Middle School Students To Sleuth a Chemistry "Whodunit" and Investigate the Scientific Method, Audrey F. Meyer, Cassandra M. Knutson, Solaire A. Finkenstaedt-Quinn, Sarah M. Gruba, Ben M. Meyer, John W. Thompson, Melissa A. Maurer-Jones, Sharon Halderman, Ayesha S. Tillman, Lizanne DeStefano, and Christy L. Haynes, Journal of Chemical Education 2014 91 (3), 410-413 DOI: 10.1021/ed4006562
- Using Paper-Based Diagnostics with High School Students To Model Forensic Investigation and Colorimetric Analysis, Rebekah R. Ravgiala, Stefi Weisburd, Raymond Sleeper, Andres Martinez, Dorota Rozkiewicz, George M. Whitesides, and Kathryn A. Hollar, Journal of Chemical Education 2014 91 (1), 107-111 DOI: 10.1021/ed300261a

Forensic Chemistry in the Undergraduate Curriculum

- A Multi-Technique Forensic Experiment for a Nonscience-Major Chemistry Course, Paul S. Szalay, Lois Anne Zook-Gerdau, and Eric J. Schurter, Journal of Chemical Education 2011 88 (10), 1419-1421 DOI: 10.1021/ed101087b
- An Interdisciplinary Guided Inquiry Laboratory for First Year Undergraduate Forensic Science Students, Sarah L. Cresswell and Wendy A. Loughlin, Journal of Chemical Education 2015 92 (10), 1730-1735 DOI: 10.1021/acs.jchemed.5b00183
- Exploring Perspectives and Identifying Potential Challenges Encountered with Crime Scene Investigations when Developing Chemistry Curricula, A Bakarr Kanu, Megan Pajski, Machelle Hartman, Irene Kimaru, Susan Marine, and Lawrence J. Kaplan, Journal of Chemical Education 2015 92 (8), 1353-1358 DOI: 10.1021/ed500671x
- Forensics as a Gateway: Promoting Undergraduate Interest in Science, and Graduate Student Professional Development through a First-Year Seminar Course, Louise K. Charkoudian, Jared J. Heymann, Marc J. Adler, Kathryn L. Haas, Kassy A. Mies, and James F. Bonk, Journal of Chemical Education 2008 85 (6), 807 DOI: 10.1021/ed085p807

Analysis of Evidence: Fingerprints, Arson, Poison, and Illicit Drugs

- Forensic Chemistry: The Revelation of Latent Fingerprints, J. Brent Friesen, Journal of Chemical Education 2015 92 (3), 497-504 DOI: 10.1021/ed400597u
- Activities Designed for Fingerprint Dusting and the Chemical Revelation of Latent Fingerprints, J. Brent Friesen, Journal of Chemical Education 2015 92 (3), 505-508 DOI: 10.1021/ed500406v

- Inquiry-Based Arson Investigation for General Chemistry Using GC-MS, Maurer, M.; Bukowski, M.; Menachery, M.; Zatorsky, A., Journal of Chemical Education 2010, 87, 311– 313 DOI: 10.1021/ed800083b
- Using The Poisoner's Handbook in Conjunction with Teaching a First-Term General/Organic/Biochemistry Course, Daniel R. Zuidema and Lindsey B. Herndon, Journal of Chemical Education 2016 93 (1), 98-102 DOI: 10.1021/acs.jchemed.5b00205
- Using Laboratory Chemicals To Imitate Illicit Drugs in a Forensic Chemistry Activity, Shawn Hasan, Deborah Bromfield-Lee, Maria T. Oliver-Hoyo, and Jose A. Cintron-Maldonado, Journal of Chemical Education 2008 85 (6), 813 DOI: 10.1021/ed085p813

Articles de Chemistry Education Research and Practice

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 :

- Celebrating our 2020 Prize and Award winners, 2020
- 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
- Celebrating the 2016 RSC Prize and Award Winners, 2016
- Teaching And Learning About The Interface Between Chemistry And Biology, 2015
- Physical Chemistry Education, 2014
- The Application of Technology to Enhance Chemistry Education, 2013
- Sustainable Development and Green Chemistry in Chemistry Education, 2012
- Diagnostic Assessment in Chemistry, 2011
- Evidentially-Based Curriculum Development, 2010
- 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
- Chemical Education Research in Glasgow in Perspective, 2006
- Chemistry and Environmental Education, 2004
- Teaching Chemistry and Physics, 2003
- Structural Concepts, Part II, 2002
- Structural Concepts: Contributions from Science, Science Education, History and Philosophy of Science, 2001

Advance articles

- …

2023

- Fixme #4 October
- Volume 24, 01 July 2023, Issue 3, Page 785 to 1099
  - Learning to teach chemical bonding: a framework for preservice teacher educators - Chemistry Education Research and Practice (RSC Publishing)
  - Enhancing academic performance and student success through learning analytics-based personalised feedback emails in first-year chemistry - Chemistry Education Research and Practice (RSC Publishing)
  - Impacts of the flipped classroom on student performance and problem solving skills in secondary school chemistry courses - Chemistry Education Research and Practice (RSC Publishing)
- Fixme #2 April
- Volume 24, 01 January 2023, Issue 1, Page 1 to 383
  - Guided inquiry-based learning in secondary-school chemistry classes: a case study - Chemistry Education Research and Practice (RSC Publishing)
  - Understanding covalent bonding – a scan across the Croatian education system - Chemistry Education Research and Practice (RSC Publishing)
  - Inoculating students against science-based manipulation strategies in social media: debunking the concept of 'water with conductivity extract' - Chemistry Education Research and Practice (RSC Publishing)
  - Pre-service chemistry teachers' knowledge of the coordination number and the oxidation number in coordination compounds - Chemistry Education Research and Practice (RSC

    - Publishing)
    - Secondary chemistry teacher learning: precursors for and mechanisms of pedagogical conceptual change - Chemistry Education Research and Practice (RSC Publishing)
    - Developing green chemistry educational principles by exploring the pedagogical content knowledge of secondary and pre-secondary school teachers - Chemistry Education Research and Practice (RSC Publishing)
    - Looking for solutions: students' use of infrared cameras in calorimetry labs - Chemistry Education Research and Practice (RSC Publishing)

2022

- Volume 23, 01 April 2022, Issue 2, Page 277 to 507
    - Pedagogical chemistry sensemaking: a novel conceptual framework to facilitate pedagogical sensemaking in model-based lesson planning
    - How do we know when students are learning? Shining a light on chemistry education practitioner research articles - Chemistry Education Research and Practice (RSC Publishing)
    - VR in chemistry, a review of scientific research on advanced atomic/molecular visualization - Chemistry Education Research and Practice (RSC Publishing)
    - Development of the Water Instrument: a comprehensive measure of students' knowledge of fundamental concepts in general chemistry - Chemistry Education Research and Practice (RSC Publishing)
    - Student teachers' problem-based investigations of chemical phenomena in the nearby outdoor environment - Chemistry Education Research and Practice (RSC Publishing)
    - Benefits of desirable difficulties: comparing the influence of mixed practice to that of categorized sets of questions on students' problem-solving performance in chemistry - Chemistry Education Research and Practice (RSC Publishing)
    - Problem solving in chemistry supported by metacognitive scaffolding: teaching associates' perspectives and practices - Chemistry Education Research and Practice (RSC Publishing)
- Volume 23, 01 January 2022, Issue 1, Page 1 to 275
    - Development of a framework to capture abstraction in physical chemistry problem solving
    - 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

2021

- Volume 22, 01 October 2021, Issue 4, Page 803 to 1092
    - Considerations of sample size in chemistry education research: numbers do count but context matters more!
    - Discipline-specific cognitive factors that influence grade 9 students' performance in chemistry
    - Incorporating concept development activities into a flipped classroom structure: using PhET simulations to put a twist on the flip
    - Examining learning of atomic level ideas about precipitation reactions with a resources

framework
    - Student perspectives on chemistry intelligence and their implications for measuring chemistry-specific mindset
    - The impact of representations of chemical bonding on students' predictions of chemical properties
    - Teaching of experimental design skills: results from a longitudinal study
    - Preservice teachers' enactment of formative assessment using rubrics in the inquiry-based chemistry laboratory
- Volume 22, 01 July 2021, Issue 3, Page 555 to 801
    - Writing a review article: what to do with my literature review
    - Student success and the high school-university transition: 100 years of chemistry education research
    - The role of visuospatial thinking in students' predictions of molecular geometry
    - Effects of a context-based approach with prediction–observation–explanation on conceptual understanding of the states of matter, heat and temperature)
    - Creating and testing an activity with interdisciplinary connections: entropy to osmosis
    - Chemistry instructors' intentions toward developing, teaching, and assessing student representational competence skills - Chemistry Education Research and Practice (RSC Publishing)
    - 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)
- Volume 22, 01 April 2021, Issue 2, Page 227 to 553
    - The topic-specific nature of experienced chemistry teachers' pedagogical content knowledge in the topics of interactions between chemical species and states of matter - Chemistry Education Research and Practice (RSC Publishing)
    - 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)
    - Examining the sources of high school chemistry teachers' practical knowledge of teaching with practical work: from the teachers' perspective - Chemistry Education Research and Practice (RSC Publishing)
    - Students' understanding of molar concentration - Chemistry Education Research and Practice (RSC Publishing)
- Volume 22, 01 January 2021, Issue 1, Page 1 to 225
    - Implementation of self-regulatory instruction to promote students' achievement and learning strategies in the high school chemistry classroom - Chemistry Education Research and Practice (RSC Publishing)
    - 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)

2020

- Volume 21, 01 October 2020, Issue 4, Page 1015 to 1221
  - Pre-service chemistry teachers' pedagogical content knowledge for integrated STEM development with LESMeR model - Chemistry Education Research and Practice (RSC Publishing)
  - 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)
  - Examining the effect of lab instructions on students' critical thinking during a chemical inquiry practical - Chemistry Education Research and Practice (RSC Publishing)
- Volume 21, 01 July 2020, Issue 3, Page 687 to 1013
  - Electrolysis: What textbooks don't tell us - Chemistry Education Research and Practice (RSC Publishing)
  - Pre-university students' perceptions about the life cycle of bioplastics and fossil-based plastics - Chemistry Education Research and Practice (RSC Publishing)
  - Capturing student conceptions of thermodynamics and kinetics using writing - Chemistry Education Research and Practice (RSC Publishing)
  - Video-based instruction on safety rules in the chemistry laboratory: its effect on student achievement - Chemistry Education Research and Practice (RSC Publishing)
  - The impact of coupling assessments on conceptual understanding and connection-making in chemical equilibrium and acid–base chemistry - Chemistry Education Research and Practice (RSC Publishing)
- Volume 21, 01 April 2020, Issue 2, Page 483 to 685
  - Student-generated video in chemistry education - Chemistry Education Research and Practice (RSC Publishing)
  - Increasing chemistry students' knowledge, confidence, and conceptual understanding of pH using a collaborative computer pH simulation - Chemistry Education Research and Practice (RSC Publishing)
  - Development of a measurement instrument to assess students' proficiency levels regarding galvanic cells - Chemistry Education Research and Practice (RSC Publishing)
- Volume 21, Issue 1 page 1 to 482
  - Revisiting the use of concept maps in a large enrollment general chemistry course: implementation and assessment
  - Impact of basic arithmetic skills on success in first-semester general chemistry
  - 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
    - Epistemological problems underlying pre-service chemistry teachers' aims to use practical work in school science
    - Secondary school students' chemistry self-concepts: gender and culture, and the impact of chemistry self-concept on learning behaviour
    - Secondary school students' acquisition of science capital in the field of chemistry
    - A teacher perspective on Scrum methodology in secondary chemistry education
    - How to promote chemical literacy? On-line question posing and communicating with scientists
    - Students' competence in translating between different types of chemical representations

2019

- Volume 20, Issue 4 page 651 to 936
    - Visualizations and representations in chemistry education - editorial - Resa Kelly and Sevil Akaygun, Chem. Educ. Res. Pract., 2019,20, 657-658 DOI: 10.1039/C9RP90009H
    - Attraction vs. repulsion – learning about forces and energy in chemical bonding with the ELI-Chem simulation Asnat R. Zohar and Sharona T. Levy, Chem. Educ. Res. Pract., 2019,20, 667-684 DOI: 10.1039/C9RP00007K
    - Supporting students' conceptual understanding of kinetics using screencasts and simulations outside of the classroom Ryan D. Sweeder, Deborah G. Herrington and Jessica R. VandenPlas, Chem. Educ. Res. Pract., 2019,20, 685-698 DOI: 10.1039/C9RP00008A
    - South African university students' attitudes towards chemistry learning in a virtually simulated learning environment Mafor Penn and Umesh Ramnarain, Chem. Educ. Res. Pract., 2019,20, 699-709 DOI: 10.1039/C9RP00014C
    - Representational challenges in animated chemistry: self-generated animations as a means to encourage students' reflections on sub-micro processes in laboratory exercises Astrid Berg, Daniel Orraryd, Alma Jahic Pettersson and Magnus Hultén, Chem. Educ. Res. Pract., 2019,20, 710-737 DOI: 10.1039/C8RP00288F (open access)
    - Two studies comparing students' explanations of an oxidation–reduction reaction after viewing a single computer animation: the effect of varying the complexity of visual images and depicting water molecules Martin H. Cole, Deborah P. Rosenthal and Michael J. Sanger, Chem. Educ. Res. Pract., 2019,20, 738-759 DOI: 10.1039/C9RP00065H
    - Multiple representations in the development of students' cognitive structures about the saponification reaction Mónica Baptista, Iva Martins, Teresa Conceição and Pedro Reis, Chem. Educ. Res. Pract., 2019,20, 760-771 DOI: 10.1039/C9RP00018F
    - What you see is what you learn? The role of visual model comprehension for academic success in chemistry Thomas Dickmann, Maria Opfermann, Elmar Dammann, Martin Lang and Stefan Rumann, Chem. Educ. Res. Pract., 2019,20, 804-820 DOI: 10.1039/C9RP00016J
    - Exploring prospective chemistry teachers' perceptions of precipitation, conception of precipitation reactions and visualization of the sub-microscopic level of precipitation reactions Canan Nakiboğlu and Nuri Nakiboğlu, Chem. Educ. Res. Pract., 2019,20, 873-889 DOI: 10.1039/C9RP00109C
- Volume 20, Issue 3 page 443 to 649
    - Application and testing of a framework for characterizing the quality of scientific reasoning in chemistry students' writing on ocean acidification Alena Moon, Robert Moeller, Anne Ruggles Gere and Ginger V. Shultz, Chem. Educ. Res. Pract., 2019,20,

484-494 DOI: 10.1039/C9RP00005D
    - Evaluating the effectiveness of Integrated STEM-lab activities in improving secondary school students' understanding of electrolysis Noor Haslina Daman Huri and Mageswary Karpudewan, Chem. Educ. Res. Pract., 2019,20, 495-508 DOI: 10.1039/C9RP00021F
    - Effect of practicum courses on pre-service teachers' beliefs towards chemistry teaching: a year-long case study Yezdan Boz, Betul Ekiz-Kiran and Elif Selcan Kutucu, Chem. Educ. Res. Pract., 2019,20, 509-521 DOI: 10.1039/C9RP00022D
    - Designing play-based learning chemistry activities in the preschool environment Karina Adbo and Clara Vidal Carulla, Chem. Educ. Res. Pract., 2019, 20, 542-553 DOI: 10.1039/C8RP00306H
    - The impact of students' educational background, interest in learning, formal reasoning and visualisation abilities on gas context-based exercises achievements with submicro-animations Jerneja Pavlin, Saša A. Glažar, Miha Slapničar and Iztok Devetak, Chem. Educ. Res. Pract., 2019,20, 633-649 DOI: 10.1039/C8RP00189H
- Volume 20, Issue 2 page 331 to 442
    - University chemistry students' interpretations of multiple representations of the helium atom Zahilyn D. Roche Allreda and Stacey Lowery Bretz, Chem. Educ. Res. Pract., 2019,20, 358-368 DOI: 10.1039/C8RP00296G
    - Development and use of a multiple-choice item writing flaws evaluation instrument in the context of general chemistry Jared Breakall, Christopher Randles and Roy Tasker, Chem. Educ. Res. Pract., 2019,20, 369-382 DOI: 10.1039/C8RP00262B
    - Analysis of the role of a writing-to-learn assignment in student understanding of organic acid–base concepts Jennifer A. Schmidt-McCormack, Jessyca A. Judge, Kellie Spahr, Ellen Yang, Raymond Pugh, Ashley Karlin, Atia Sattar, Barry C. Thompson, Anne Ruggles Gere and Ginger V. Shultz, Chem. Educ. Res. Pract., 2019,20, 383-398 DOI: 10.1039/C8RP00260F
    - A web-based ionisation energy diagnostic instrument: exploiting the affordances of technology Kim Chwee Daniel Tan, Keith S. Taber, Yong Qiang Liew and Kay Liang Alan Teo, Chem. Educ. Res. Pract., 2019,20, 412-427 DOI: 10.1039/C8RP00215K
- Volume 20, Issue 1, page 1 to 329
    - The influence of the explicit nature of science instruction embedded in the Argument-Driven Inquiry method in chemistry laboratories on high school students' conceptions about the nature of science Guluzar Eymura, Chem. Educ. Res. Pract., 2019,20, 17-29 DOI: 10.1039/C8RP00135A
    - Analysis of text difficulty in lower-secondary chemistry textbooks Martin Rusek and Karel Vojíř, Chem. Educ. Res. Pract., 2019,20, 85-94 DOI: 10.1039/C8RP00141C
    - A novel practical pedagogy for terminal assessment Naomi Hennah, Chem. Educ. Res. Pract., 2019,20, 95-106 DOI: 10.1039/C8RP00186C
    - Representations of chemical phenomena in secondary school chemistry textbooks Johnson Enero Upahi and Umesh Ramnarain, Chem. Educ. Res. Pract., 2019,20, 146-159 DOI: 10.1039/C8RP00191J
    - A phenomenographic study of 10th grade students' understanding of electrolytes Shanshan Lu, Hualin Bi and Xiufeng Liu, Chem. Educ. Res. Pract., 2019,20, 204-212 DOI: 10.1039/C8RP00125A
    - The effects of microcomputer-based laboratories on students macro, micro, and symbolic representations when learning about net ionic reactions Jianqiang Ye, Shanshan Lu and Hualin Bi, Chem. Educ. Res. Pract., 2019,20, 288-301 DOI: 10.1039/C8RP00165K
    - Profiling the combinations of multiple representations used in large-class teaching: pathways to inclusive practices João Elias Vidueira Ferreira and Gwendolyn Angela Lawrie, Chem. Educ. Res. Pract., 2019,20, 902-923 DOI: 10.1039/C9RP00001A

2018

- Volume 19, Issue 4, page 983 to 1318
  - Learning progressions and teaching sequences – old wine in new skins? Sascha Bernholt and Hannah Sevian, Chem. Educ. Res. Pract., 2018,19, 989-997 DOI: 10.1039/C8RP90009D
  - Student progression on chemical symbol representation abilities at different grade levels (Grades 10–12) across gender Shaohui Chi, Zuhao Wang, Ma Luo, Yuqin Yang and Min Huang, Chem. Educ. Res. Pract., 2018,19, 1055-1064 DOI: 10.1039/C8RP00010G
  - Using student-generated animations: the challenge of dynamic chemical models in states of matter and the invisibility of the particles Zeynep Yaseen, Chem. Educ. Res. Pract., 2018,19, 1166-1185 DOI: 10.1039/C8RP00136G
  - Teaching and learning chemical bonding: research-based evidence for misconceptions and conceptual difficulties experienced by students in upper secondary schools and the effect of an enriched text Georgios Tsaparlis, Eleni T. Pappa and Bill Byers, Chem. Educ. Res. Pract., 2018,19, 1253-1269 DOI: 10.1039/C8RP00035B
- Volume 19, Issue 3, page 639 to 982
  - The challenges of learning and teaching chemical bonding at different school levels using electrostatic interactions instead of the octet rule as a teaching model Jarkko Joki and Maija Aksela, Chem. Educ. Res. Pract., 2018,19, 834-845 DOI: 10.1039/C8RP00045J
    - *cf.* Avoiding bonding misconceptions - Students' understanding regresses after teachers introduce the octet rule, Education in Chemistry (RSC), sept. 2018, David Read.
  - Undergraduate chemistry students' misconceptions about reaction coordinate diagrams Roshan Lamichhane, Cathrine Reck and Adam V. Maltese, Chem. Educ. Res. Pract., 2018,19, 834-845 DOI: 10.1039/C8RP00045J
- Volume 19, Issue 2, page 399 to 637
  - Low-achieving students' attitudes towards learning chemistry and chemistry teaching methods P. Kousa, R. Kavonius and M. Aksela, Chem. Educ. Res. Pract., 2018,19, 431-441 DOI: 10.1039/C7RP00226B
  - Improving the interest of high-school students toward chemistry by crime scene investigation A. Basso, C. Chiorri, F. Bracco, M. M. Carnasciali, M. Alloisio and M. Grotti, Chem. Educ. Res. Pract., 2018,19, 558-566 DOI: 10.1039/C7RP00232G
- Volume 19, Issue 1, page 1 to 397
  - Interactions of chemistry teachers with gifted students in a regular high-school chemistry classroom, Naama Bennya and Ron Blonder, Chem. Educ. Res. Pract., 2018,19, 122-134 DOI: 10.1039/C7RP00127D
  - Secondary school chemistry teacher's current use of laboratory activities and the impact of expense on their laboratory choices, Sarah B. Boesdorfer and Robin A. Livermore, Chem. Educ. Res. Pract., 2018,19, 135-148 Chem. Educ. Res. Pract., 2018,19, 135-148
  - Development of pre-service chemistry teachers' technological pedagogical content knowledge Ayla Cetin-Dindar, Yezdan Boz, Demet Yildiran Sonmez and Nilgun Demirci Cele, Chem. Educ. Res. Pract., 2018,19, 167-183 DOI: 10.1039/C7RP00175D
  - Using a multi-tier diagnostic test to explore the nature of students' alternative conceptions on reaction kinetics, Yaw Kai Yan and R. Subramaniam, Chem. Educ. Res. Pract., 2018,19, 213-226 DOI: 10.1039/C7RP00143F
  - Students' visualisation of chemical reactions – insights into the particle model and the atomic model, Maurice M. W. Cheng, Chem. Educ. Res. Pract., 2018,19, 227-239 DOI: 10.1039/C6RP00235H
  - The role of teacher questions in the chemistry classroom, Sofie Weiss Dohrn and Niels

Bonderup Dohn, Chem. Educ. Res. Pract., 2018,19, 352-363 DOI: 10.1039/C7RP00196G

2017

- Studying the consistency between and within the student mental models for atomic structure Nikolaos Zarkadis, George Papageorgiou and Dimitrios Stamovlasis, Chem. Educ. Res. Pract., 2017, 18, 893-902, DOI: 10.1039/C7RP00135E
- Engaging students in analyzing and interpreting data to construct mathematical models: an analysis of students' reasoning in a method of initial rates task Nicole M. Becker, Charlie A. Rupp and Alexandra Brandriet, Chem. Educ. Res. Pract., 2017,18, 798-810, DOI: 10.1039/C6RP00205F
- 'Triangulation:' an expression for stimulating metacognitive reflection regarding the use of 'triplet' representations for chemistry learning Gregory P. Thomas, Chem.Educ.Res.Pract, 2017. DOI: 10.1039/c6rp00227g
  - discuté ici : Triangulation to tame the Triplet Getting your students to think about how they learn
- Scaffolding the development of problem-solving skills in chemistry: guiding novice students out of dead ends and false starts Elizabeth Yuriev, Som Naidu, Luke S. Schembri and Jennifer L. Short, Chem. Educ. Res. Pract., 2017, 18, 486-504 DOI: 10.1039/C7RP00009J
- Argumentation to foster pre-service science teachers' knowledge, competency, and attitude on the domains of chemical literacy of acids and bases C. Cigdemoglu, H. O. Arslan and A. Cam, Chem. Educ. Res. Pract., 2017, 18, 288 DOI: 10.1039/C6RP00167J

2016

- An inquiry-based approach of traditional 'step-by-step' experiments, L. Szalay and Z. Tóthb, Chem. Educ. Res. Pract., 2016,17, 923-961 DOI: 10.1039/C6RP00044D
- Exploring the impact of argumentation on pre-service science teachers' conceptual understanding of chemical equilibrium, Mehmet Aydeniz and Alev Dogan, Chem. Educ. Res. Pract., 2016, DOI: 10.1039/C5RP00170F (cf. ici)
- Is the oxygen atom static or dynamic? The effect of generating animations on students' mental models of atomic structure, Sevil Akayguna Chem. Educ. Res. Pract., 2016, 17, 788-807 DOI: 10.1039/C6RP00067C
- A review of research on the teaching and learning of chemical kinetics Kinsey Bain and Marcy H. Towns, Chem. Educ. Res. Pract., 2016,17, 246-262 DOI: 10.1039/C5RP00176E

2015

- Doing it for themselves: students creating a high quality peer-learning environment, Kyle W. Galloway and Simon Burns, Chem. Educ. Res. Pract., 2015, DOI: 10.1039/C4RP00209A (cf. eic)
- Diagnostic assessment of student misconceptions about the particulate nature of matter from ontological perspective Dilek Özalp and Ajda Kahveci, Chem. Educ. Res. Pract., 2015, 16, 619-639, DOI: 10.1039/C5RP00096C
- …

2014

- Prospective pedagogy for teaching chemical bonding for smart and sustainable learning, Harkirat S. Dhindsa and David F. Treagust, Chem. Educ. Res. Pract., 2014,15, 435-446 DOI: 10.1039/C4RP00059E (cf. eic)
- Measuring meta-ignorance through the lens of confidence: examining students' redox misconceptions about oxidation numbers, charge, and electron transfer, Alexandra R. Brandriet and Stacey Lowery Bretz, Chem. Educ. Res. Pract., 2014,15, 729-746 DOI: 10.1039/C4RP00129J
- College chemistry students' use of memorized algorithms in chemical reactions, James M. Nyachwaya, Abdi-Rizak M. Warfa, Gillian H. Roehrig and Jamie L. Schneider. Chem. Educ. Res. Pract., 2014,15, 81-93 DOI: 10.1039/C3RP00114H

2013

- Representations of chemical bonding models in school textbooks – help or hindrance for understanding? , Anna Bergqvist, Michal Drechsler, Onno De Jong and Shu-Nu Chang Rundgren, Chem. Educ. Res. Pract., 2013, 14, 589-606. DOI: 10.1039/C3RP20159G
- Case study applications in chemistry lesson: gases, liquids, and solids Yıldızay Ayyıldız and Leman Tarhan, Chem. Educ. Res. Pract., 2013,14, 408-420 DOI: 10.1039/C3RP20152J
- Moving beyond definitions: what student-generated models reveal about their understanding of covalent bonding and ionic bonding Cynthia J. Luxford and Stacey Lowery Bretz, Chem. Educ. Res. Pract., 2013,14, 214-222. DOI: 10.1039/C3RP20154F
- Implementation and assessment of Cognitive Load Theory (CLT) based questions in an electronic homework and testing system Derek A. Behmke and Charles H. Atwood, Chem. Educ. Res. Pract., 2013, 14, 47-256 DOI: 10.1039/C3RP20153H
- Semantic mistakes and didactic difficulties in teaching the “amount of substance” concept: a useful model Bülent Pekdağ and Nursen Azizoğlu, Chem. Educ. Res. Pract., 2013, 14, 117-129 DOI: 10.1039/C2RP20132A

2010

- Can animations effectively substitute for traditional teaching methods? Part I: preparation and testing of materials Roberto Ma. Gregorius, Rhodora Santos, Judith B. Dano and Jose J. Gutierrez Chem. Educ. Res. Pract., 2010,11, 253-261 DOI: 10.1039/C0RP90006K
- Can animations effectively substitute for traditional teaching methods? Part II: Potential for differentiated learning Roberto Ma. Gregorius, Rhodora Santos, Judith B. Dano and Jose J. Gutierrez Chem. Educ. Res. Pract., 2010,11, 262-266 DOI: 10.1039/C0RP90007A

2009

- Different models used to interpret chemical changes: analysis of a curriculum and its impact on French students' reasoning Isabelle Kermen and Martine Méheut, Chem. Educ. Res. Pract., 2009,10, 24-34 DOI: 10.1039/B901457H
- Applying cognitive theory to chemistry instruction: the case for worked examples Kent J. Crippen and David W. Brooks, Chem. Educ. Res. Pract., 2009, 10, 35-41 DOI: 10.1039/B901458F

2008

- Reliable multi method assessment of metacognition use in chemistry problem solving Melanie M. Cooper, Santiago Sandi–Urena and Ron Stevens, Chem. Educ. Res. Pract., 2008, 9, 18-24 DOI: 10.1039/B801287N

2006

- Definition of 'element' Peter G. Nelson, Chem. Educ. Res. Pract., 2006, 7(4), 288-289 DOI: 10.1039/B6RP90015A

2005

- Conceptual change achieved through a new teaching program on acids and bases Gökhan Demircioglu, Alipasa Ayas and Hülya Demircioglu, Chem. Educ. Res. Pract., 2005,6, 36-51 DOI: 10.1039/B4RP90003K

2003

- Basic chemical concepts Peter G. NELSON, Chem. Educ. Res. Pract., Vol 4(1), pp 19-24, 2003 DOI: 10.1039/B2RP90033E
- Chemical phenomena versus chemical reactions: do students make the connection? Georgios TSAPARLIS, Chem. Educ. Res. Pract., Vol 4(1), pp 31-43, 2003 DOI: 10.1039/B2RP90035A

2002

- Teaching chemistry progressively: from substances, to atoms and molecules, to electrons and nuclei Peter G. NELSON, Chem. Educ. Res. Pract., Vol 3 n°2, pp 215-228, 2002 DOI: 10.1039/B2RP90017C
- The learning and teaching of the concepts « amount of substance » and « mole » : a review of the literature, Carlos FURIÓ, Rafael AZCONA and Jenaro GUISASOLA Chem. Educ. Res. Pract., vol.3, n°3, pg 277-292, 2002 DOI: 10.1039/B2RP90023H

2001

- Building the structural concepts of chemistry : some considerations from educational research Keith S. TABER, Chem. Educ. Res. Pract., vol.2 123-158, 2001 DOI: 10.1039/B1RP90014E

2000

- Travaux pratiques en chimie et représentation de la réaction chimique par l'équation-bilan dans les registres macroscopique et microscopique: une étude en classe de seconde (15 - 16 ans) André LAUGIER and Alain DUMON, Chem. Educ. Res. Pract., 2000, vol.1, n°1, 61-75 DOI: 10.1039/A9RP90007A

International Journal of Science Education

- The qualitatively different conceptions of 1 mol Helge Strömdahl , Aina Tullberg & Leif Lybeck, International Journal of Science Education: Vol 16, No 1, Pages 17-26, 1994 DOI: 10.1080/0950069940160102
- Students' conceptions of 1 mol and educators' conceptions of how they teach 'the mole' Aina Tullberg , Helge Strömdahl & Leif Lybeck, International Journal of Science Education: Vol 16, No 2, Pages 145-156, 1994 DOI: 10.1080/0950069940160204
- The 'Mole Environment' studyware: applying multidimensional analysis to quantitative chemistry problems Yehudit J. Dori & Mira Hameiri, International Journal of Science Education, 1998, 20:3, 317-333, DOI: 10.1080/0950069980200305
- Difficulties in teaching the concepts of 'amount of substance' and 'mole' CarloS. Furió, RafaeL. Azcona, Jenaro Guisasola & Mary Ratcliffe, International Journal of Science Education, 2000, 22:12, 1285-1304, DOI: 10.1080/095006900750036262
    - An investigation into chemical engineering students' understanding of the mole and the use of concrete activities to promote conceptual change Jennifer M. Case & Duncan M. Fraser, International Journal of Science Education, 1999, 21:12, 1237-1249, DOI: 10.1080/095006999290048
- International Journal of Science Education: Vol 40, No 10 **Context-based Learning and Teaching in STEM**
    - Designing context-based teaching materials by transforming authentic scientific modelling practices in chemistry Gjalt T. Prins, Astrid M.W. Bulte & Albert Pilot International Journal of Science Education Volume 40, 2018 - Issue 10 Pages 1108-1135 DOI: 10.1080/09500693.2018.1470347
    - Context characteristics and their effects on students' situational interest in chemistry Sebastian Habig, Janet Blankenburg, Helena van Vorst, Sabine Fechner, Ilka Parchmann & Elke Sumfleth International Journal of Science Education Volume 40, 2018 - Issue 10 Pages 1154-1175 DOI: 10.1080/09500693.2018.1470349
    - Using model-based scaffolds to support students solving context-based chemistry problems Karolina Broman, Sascha Bernholt & Ilka Parchmann, International Journal of Science Education - Volume 40, 2018 - Issue 10 Pages 1176-1197 DOI: 10.1080/09500693.2018.1470350
    - Comparison of learning in two context-based university chemistry classes Hannah Sevian, Deirdre Hugi-Cleary, Courtney Ngai, Florence Wanjiku & Jesse Mhel Baldoria International Journal of Science Education - Volume 40, 2018 - Issue 10 Pages 1239-1262 DOI: 10.1080/09500693.2018.1470353

Articles parus dans d'autres revues

- Teaching the Mole Werner Dierks, European Journal of Science Education, 1981, 3:2, 145-158, DOI: 10.1080/0140528810030205
- Analyzing difficulties with mole-concept tasks by using familiar analog tasks Dorothy Gabel, Robert D. Sherwood, Journal of Research in Science Teaching, Volume 21, Issue 8, November 1984, pages 843-851 DOI: 10.1002/tea.3660210808
- A content analysis of the presentation of the mole concept in chemistry textbooks John R. Staver, Andrew T. Lumpe, Journal of Research in Science Teaching Volume 30, Issue 4, April 1993, Pages 321-337 DOI: 10.1002/tea.3660300402
- Two investigations of students' understanding of the mole concept and its use in problem solving John R. Staver, Andrew T. Lumpe, Journal of Research in Science Teaching Volume 32,

Issue 2, February 1995, Pages 177-193 DOI: 10.1002/tea.3660320207
- The Importance of History and Philosophy of Science in Correcting Distorted Views of 'Amount of Substance' and 'Mole' Concepts in Chemistry Teaching Kira Padilla, Carles Furio-Mas, Sci & Educ (2008) 17: 403. DOI: 10.1007/s11191-007-9098-2
- Learning chemistry in a metacognitive environment. 2008, Richard Pulmones Asia-Pacific Education Researcher, 16(2), 165–183. DOI: 10.3860/taper.v16i2.258 lien RG, lien 2
- Teaching-Learning of Chemistry: Analysis of Representations of Learners on the Modeling of Chemical Transformation El Hassane Touli, Mohammed Talbi, Mohamed, Radid, Procedia - Social and Behavioral Sciences Volume 46, 2012, Pages 47-52 DOI: 10.1016/j.sbspro.2012.05.065
- Transfer in chemistry: a study of students' abilities in transferring mathematical knowledge to chemistry Richard A. Hoban , Odilla E. Finlayson & Brien C. Nolan International Journal of Mathematical Education in Science and Technology Volume 44, 2013 - Issue 1 Pages 14-35 DOI: 10.1080/0020739X.2012.690895
- The efficiency of worked examples compared to erroneous examples, tutored problem solving, and problem solving in computer-based learning environments Computers in Human Behavior Volume 55, Part A, February 2016, Pages 87-99 DOI: 10.1016/j.chb.2015.08.038
- Interleaved presentation benefits science category learning Eglington, L. G., & Kang, S. H. K. (2017) Journal of Applied Research in Memory and Cognition, 6(4), 475-485. DOI: 10.1016/j.jarmac.2017.07.005 → students chemical categories (comparison of interleaved and blocked practice)
- Chemistry Education Research—From Personal Empiricism to Evidence, Theory, and Informed Practice Melanie M. Cooper and Ryan L. Stowe, Chem. Rev., 2018, 118(12), 6053-6087 DOI: 10.1021/acs.chemrev.8b00020 **Open Access & Review of Chemistry Education Research**
- Quand l'élève devient auteur : analyse didactique d'un atelier BD-chimie Isabelle Kermen, Cécile De Hosson, Laurence Bordenave - Telling Science, drawing Science - Science en récit, Science en images https://tsds2019.sciencesconf.org/230855, Angoulème 2019
- Technology Integration in Chemistry Education and Research (TICER) Editor(s): Tanya Gupta, Robert E. Belford, ACS 2019 Volume 1318 ISBN: 9780841234390 DOI: DOI: 10.1021/bk-2019-1318 → nombreux articles
- Improving First-Semester General Chemistry Student Success Through Retrieval Practice Saul R. Trevino, Elizabeth Trevino, and Mary Osterloh - Enhancing Retention in Introductory Chemistry Courses: Teaching Practices and Assessments, Chapter 4, pp 69-75 ACS Symposium Series Vol. 1330 (ACS Publications) DOI: 10.1021/bk-2019-1330.ch004
- Constructing a Periodic Table: A Proposed Practice Activity for High School Chemistry Classes Guerra, G. , Felicio, C. , Ferreira, J. and Noll, M. (2019) Creative Education, 10, 677-689. DOI: 10.4236/ce.2019.104050

- **Stacey Lowery Bretz**
  - A Chronology of Assessment in Chemistry Education Stacey Lowery Bretz, in “Trajectories of Chemistry Education Innovation and Reform”, Chapter 10, 2013, 145-153 ACS Symposium Series, Volume 1145 DOI: 10.1021/bk-2013-1145.ch010
  - Qualitative Research Designs in Chemistry Education Research Stacey Lowery Bretz, in “Nuts and Bolts of Chemical Education Research”, Chapter 7, 2008, 79-99 ACS Symposium Series, Volume 976 DOI: 10.1021/bk-2008-0976.ch007
  - Designing Assessment Tools To Measure Students' Conceptual Knowledge of Chemistry Stacey Lowery Bretz, in “Tools of Chemistry Education Research”, Chapter 9, 2014, 155-168 ACS Symposium Series, Volume 1166 DOI: 10.1021/bk-2014-1166.ch009
  - Faculty Goals, Inquiry, and Meaningful Learning in the Undergraduate Chemistry Laboratory Stacey Lowery Bretz, Kelli Rush Galloway, Joanna OrzelElizabeth Gross, in “Technology and Assessment Strategies for Improving Student Learning in Chemistry”,

Chapter 6, 2016, 101-115 ACS Symposium Series, Volume 1235 DOI: 10.1021/bk-2016-1235.ch006

Thèses de doctorat, PhD Thesis

- Histoire du concept de Mole (1869-1969) : à la croisée des disciplines physique et chimie par Christiane Chabas-Bues, Thèse de doctorat en Philosophie sous la direction de Bernadette Bensaude-Vincent, Paris 10, 1999 → article Histoire du concept de mole (1869-1969) à la croisée des disciplines physique et chimie, L'actualité chimique, N° 239 octobre 2000, pp39-42
- theses.fr – David Cross , Les connaissances professionnelles de l'enseignant : reconstruction a partir d'un corpus vidéo de situations de classe de chimie (2009)
- theses.fr – David Lafarge , Analyse didactique de l'enseignement-apprentissage de la chimie organique jusqu'à bac+2 pour envisager sa restructuration (2010)
- Investigating Students' Understandings of the Symbolic, Macroscopic, and Particulate Domains of Oxidation-Reduction and the Development of the Redox Concept Inventory Brandriet, Alexandra R, 2014, Miami University
- theses.fr – Ali Nouiri, Analyse de l'action didactique, de sa continuité et de ses déterminants : cas de l'enseignement de titrage acide-base en classes terminales tunisiennes (2016)
- theses.fr – Sophie Canac , Le langage symbolique de la chimie en tant que méta-niveau entre registre empirique et registre des modèles : une problématique de l'enseignement-apprentissage de chimie (2017)
- Construction d'outils didactiques pour remédier aux difficultés d'apprentissage du concept de concentration en chimie dans le secondaire supérieur - Appui sur les neurosciences cognitives Bénédicte Willame, Institut de Recherches en Didactiques et Education de l'UNamur, thèse 2017
    - Les difficultés rencontrées dans l'apprentissage du concept de concentration en chimie Willame, B. et Snauwaert, P. (2015) Spiral-E Revue de recherches en éducation, 55(1), 177-205. DOI: 10.3406/spira.2015.1743
    - ENTRAINEMENT AU CONTRÔLE INHIBITEUR ET APPRENTISSAGE EN CHIMIE DANS LE SECONDAIRE SUPÉRIEUR : FAVORISER UN CHANGEMENT DE PRÉVALENCE CONCEPTUELLE Bénédicte WILLAME et Philippe SNAUWAERT 2018 5(2) 73-92 — Neuroeducation DOI: 10.24046/neuroed.20180502.73 - 005-002-003_Willame+&+Snauwaert_final.pdf
- L'équation chimique, un sujet d'étude pour diagnostiquer les difficultés d'apprentissage de la langue symbolique des chimistes dans l'enseignement secondaire belge : Développement d'une séquence de leçons en s'appuyant sur un modèle des niveaux de signification Jérémy Dehon, Département de Chimie, Institut de Recherches en Didactiques et Education de l'UNamur, thèse 2018
- Thèse Laureline Van Overmeir, ULB, 2019 "L'enseignement de la chimie organique dans le secondaire belge francophone : des conceptions alternatives à de nouvelles approches pédagogiques". Promoteur : Prof. Cécile Moucheron. La thèse propose deux séquences d'apprentissage :
- Analyse de l'activité étudiante lors de séances de laboratoire de chimie: vers une compréhension des raisonnements adoptés lors de l'écriture de résultats expérimentaux et de l'acquisition des techniques de dilution et de titrage colorimétrique. Thèse de Céline Picron, UNamur, 10 sept. 2020. Promoteur : Ph. SNAUWAERT lien direct
- Analyse et développement des méthodes et pratiques d'enseignement liées à l'éducation à l'environnement et à la gestion des déchets pour les enseignants des lycées et collèges dans le domaine de la chimie au Burkina Faso. Thèse présentée par Issa ZONGO en vue de l'obtention du grade académique de docteur en sciences (ULB) et en sciences/Didactique des sciences (Université Norbert ZONGO UNZ - Burkina Faso) - Année académique 2021-2022 (défense publique le 10 octobre 2022, promoteurs : Prof. Cécile Moucheron, ULB, et Dr Moussa

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