



Acceptability of a submission for publication in the *Journal of Chemical Education* depends on its usefulness to our readers (its content) and on its meeting standards of quality (its presentation).

### CONTENT. A publishable submission should:

- ✓ have pedagogical content, showing at least one of the following
  - how the subject discussed would fit into the curriculum
  - how it might improve presentation of chemistry in classrooms, laboratories, textbooks, or other media
  - some other clearly stated pedagogical component
- ✓ appeal to either
  - a general audience (the majority of our readers)
  - a clearly identifiable special audience (a specialized portion of our readers)
- ✓ be useful to its intended audience
- ✓ be original (not duplicate previously published material)
- ✓ be accurate and up to date
- ✓ include a thoroughly researched bibliography
- ✓ include complete hazard/safety information

### PRESENTATION. A publishable submission should:

- ✓ include a useful, accurate **Abstract**, suitable for publication in *JCE Online*
- ✓ begin with a clear and concise **Introduction**, stating why a reader should take the time to read it
- ✓ recognize and cite recent relevant publications, especially in *JCE*
- ✓ be concise—of a length appropriate for its content and importance to chemical education
- ✓ be written in clear and proper English, at a level suitable for its intended audience
- ✓ conform with *JCE* supplemental guidelines (e.g., for lab experiments, *JCE* Classroom Activities)
- ✓ include illustrations and tables that convey information effectively, but only those needed to clarify the content
- ✓ be appropriate for the medium in which publication is sought (print, *JCE Online*, *JCE Software*, etc.); if more than one medium is necessary to make the submission useful to *JCE* readers (e.g., print and the author's Web site), then all media should be reviewed

### COMMENTS.

Your comments should be aimed at helping the author improve the manuscript and should be provided even if you think the manuscript should never appear in *JCE*. Other reviewers' evaluations may lead the Editor to request a revision for possible publication and the author will benefit from seeing your criticisms. If the clearest way to comment is to mark the manuscript, feel free to do so. We will send marked manuscript copies to the author along with copies of the reviewers' comments.

### RETURNING YOUR REVIEW.

We strongly encourage you to email your review to [jcereviews@chem.wisc.edu](mailto:jcereviews@chem.wisc.edu). If you do, we will remove all identifying text before sending the review to the author.

Your review should include the **manuscript number** and your **reviewer number** (both appear in the letter from the Editor that was sent with the manuscript), and your **general evaluation code** (see the list below). We suggest that you put these items at the top, followed by your detailed comments. If your review is on paper (as opposed to the more convenient email method), print it on *plain* paper, not on letterhead.

✉ If you do not use Email or if you are returning a marked manuscript, the Journal's mailing address is:

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✉ Please include our street address and extended Zip code—it will help avoid postal delays.

### General Evaluation Codes

- |  |  |
|--|--|
| <input type="checkbox"/> <b>A</b> Acceptable as is                             | <input type="checkbox"/> <b>F</b> Not suitable   |
| <input type="checkbox"/> <b>B</b> Needs minor revision before acceptance       | <input type="checkbox"/> <b>F(a)</b> Not suitable—No apparent pedagogical content          |
| <input type="checkbox"/> <b>B/C</b> Needs revision and possibly further review | <input type="checkbox"/> <b>F(b)</b> Not suitable—Most or all has been published elsewhere |
| <input type="checkbox"/> <b>C</b> Needs major revision and further review      | <input type="checkbox"/> <b>F(c)</b> Not suitable—Not sufficiently useful for our readers  |
| <input type="checkbox"/> <b>D</b> Transfer to <i>JCE Software</i>              | <input type="checkbox"/> <b>F(d)</b> Not suitable—Contains inaccurate information          |
| <input type="checkbox"/> <b>E</b> Transfer to <i>JCE Online</i>                |  |

3/5/2002 rev.

**Keywords** Please choose 1–3 terms from the General Categories list and 2–4 from the Specific Categories list.

### General Categories

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Analytical Chemistry              | <input type="checkbox"/> General Chemistry                    | <input type="checkbox"/> Organic Chemistry             |
| <input type="checkbox"/> Biochemistry                      | <input type="checkbox"/> History / Philosophy                 | <input type="checkbox"/> Physical Chemistry            |
| <input type="checkbox"/> Chemical Education Research (CER) | <input type="checkbox"/> Inorganic Chemistry                  | <input type="checkbox"/> Polymer Chemistry             |
| <input type="checkbox"/> Curriculum                        | <input type="checkbox"/> Instrumental Methods                 | <input type="checkbox"/> Public Understanding          |
| <input type="checkbox"/> Demonstrations                    | <input type="checkbox"/> Introductory / High School Chemistry | <input type="checkbox"/> Safety / Hazardous Substances |
| <input type="checkbox"/> Environmental Chemistry           | <input type="checkbox"/> Laboratory Instruction               |  |

### Specific Categories

- |   |  |  |
|---|--|--|
| <input type="checkbox"/> Acid–Base Chemistry                  | <input type="checkbox"/> EPR / ESR Spectrometry                | <input type="checkbox"/> Nanotechnology                        |
| <input type="checkbox"/> Administrative Issues                | <input type="checkbox"/> Equilibrium                           | <input type="checkbox"/> Natural Products                      |
| <input type="checkbox"/> Agricultural Chemistry               | <input type="checkbox"/> Ethics                                | <input type="checkbox"/> NMR Spectrometry                      |
| <input type="checkbox"/> Amino Acids                          | <input type="checkbox"/> Excited States / Energy Transfer      | <input type="checkbox"/> Nomenclature / Units / Symbols        |
| <input type="checkbox"/> Aqueous Solution Chemistry           | <input type="checkbox"/> Faculty Development                   | <input type="checkbox"/> Nonmajor Courses                      |
| <input type="checkbox"/> Aromaticity / Aromatics              | <input type="checkbox"/> Flow-Injection Analysis               | <input type="checkbox"/> Nuclear / Radiochemistry              |
| <input type="checkbox"/> Astrochemistry                       | <input type="checkbox"/> Fluorescence Spectrometry             | <input type="checkbox"/> Nucleic Acids / DNA / RNA             |
| <input type="checkbox"/> Atmospheric Chemistry                | <input type="checkbox"/> Food Science                          | <input type="checkbox"/> Numerical Methods                     |
| <input type="checkbox"/> Atomic Properties / Structure        | <input type="checkbox"/> Forensic Chemistry                    | <input type="checkbox"/> Nutrition                             |
| <input type="checkbox"/> Atomic Spectroscopy                  | <input type="checkbox"/> Fourier Transform Techniques          | <input type="checkbox"/> Organic Synthesis                     |
| <input type="checkbox"/> Bioinorganic Chemistry               | <input type="checkbox"/> Free Radicals                         | <input type="checkbox"/> Organometallics                       |
| <input type="checkbox"/> Bioorganic Chemistry                 | <input type="checkbox"/> Gases                                 | <input type="checkbox"/> Outreach                              |
| <input type="checkbox"/> Biophysical Chemistry                | <input type="checkbox"/> Genetics / Genetic Engineering        | <input type="checkbox"/> Pericyclic Reactions                  |
| <input type="checkbox"/> Biotechnology                        | <input type="checkbox"/> Geochemistry                          | <input type="checkbox"/> Periodicity / Periodic Table          |
| <input type="checkbox"/> Bonding Theory                       | <input type="checkbox"/> Graduate Education / Research         | <input type="checkbox"/> Phase Transitions / Diagrams          |
| <input type="checkbox"/> Calculator Based Learning            | <input type="checkbox"/> Green Chemistry                       | <input type="checkbox"/> Physical Properties                   |
| <input type="checkbox"/> Calorimetry                          | <input type="checkbox"/> Group Theory                          | <input type="checkbox"/> Photochemistry                        |
| <input type="checkbox"/> Carbohydrates                        | <input type="checkbox"/> Heterocycles                          | <input type="checkbox"/> Plant Chemistry                       |
| <input type="checkbox"/> Catalysis                            | <input type="checkbox"/> Hormones                              | <input type="checkbox"/> Plastics                              |
| <input type="checkbox"/> CER Constructivism                   | <input type="checkbox"/> Humor / Puzzles                       | <input type="checkbox"/> Problem-Based Learning                |
| <input type="checkbox"/> CER Learning Theories                | <input type="checkbox"/> Industrial Chemistry                  | <input type="checkbox"/> Proteins / Peptides                   |
| <input type="checkbox"/> CER Misconceptions                   | <input type="checkbox"/> Inorganic Synthesis                   | <input type="checkbox"/> Qualitative Analysis                  |
| <input type="checkbox"/> CER Particulate Nature of Matter     | <input type="checkbox"/> Inquiry-Based / Discovery Method      | <input type="checkbox"/> Quantitative Analysis                 |
| <input type="checkbox"/> CER Problem Solving                  | <input type="checkbox"/> Interdisciplinary / Multidisciplinary | <input type="checkbox"/> Quantum Chemistry                     |
| <input type="checkbox"/> CER Qualitative Methods              | <input type="checkbox"/> Intermolecular Forces                 | <input type="checkbox"/> Raman Spectroscopy                    |
| <input type="checkbox"/> CER Quantitative Methods             | <input type="checkbox"/> Internet / Web Based Materials        | <input type="checkbox"/> Reactive Intermediates                |
| <input type="checkbox"/> CER Statistics                       | <input type="checkbox"/> Ion Exchange                          | <input type="checkbox"/> Redox Reactions                       |
| <input type="checkbox"/> CER Student-Centered Learning        | <input type="checkbox"/> Ion Selective Electrodes              | <input type="checkbox"/> Separation Science                    |
| <input type="checkbox"/> Chemical Dynamics                    | <input type="checkbox"/> IR Spectroscopy                       | <input type="checkbox"/> Solids                                |
| <input type="checkbox"/> Chemical Engineering                 | <input type="checkbox"/> Isotopes                              | <input type="checkbox"/> Solid-State Chemistry                 |
| <input type="checkbox"/> Chemical Information                 | <input type="checkbox"/> Kinetics                              | <input type="checkbox"/> Solutions / Solvents                  |
| <input type="checkbox"/> Chemical Technicians                 | <input type="checkbox"/> Laboratory Computing / Interfacing    | <input type="checkbox"/> Spreadsheets                          |
| <input type="checkbox"/> Chirality / Optical Isomers          | <input type="checkbox"/> Laboratory Equipment / Apparatus      | <input type="checkbox"/> Statistical Mechanics                 |
| <input type="checkbox"/> Chromatography                       | <input type="checkbox"/> Lasers / Laser Spectroscopy           | <input type="checkbox"/> Statistics / Data Analysis            |
| <input type="checkbox"/> Clays / Clay Chemistry               | <input type="checkbox"/> Lipids                                | <input type="checkbox"/> Stereochemistry                       |
| <input type="checkbox"/> Collaborative / Cooperative Learning | <input type="checkbox"/> Liquid Crystals                       | <input type="checkbox"/> Stoichiometry                         |
| <input type="checkbox"/> Colloids                             | <input type="checkbox"/> Liquids                               | <input type="checkbox"/> Superconductivity                     |
| <input type="checkbox"/> Combinatorial Chemistry              | <input type="checkbox"/> Luminescence                          | <input type="checkbox"/> Surface Science                       |
| <input type="checkbox"/> Computational Chemistry              | <input type="checkbox"/> Magnetic Properties                   | <input type="checkbox"/> TA Training                           |
| <input type="checkbox"/> Computer Based Learning              | <input type="checkbox"/> Main-Group Elements                   | <input type="checkbox"/> Teaching / Learning Aids              |
| <input type="checkbox"/> Conductivity                         | <input type="checkbox"/> Mass Spectrometry                     | <input type="checkbox"/> Teaching / Learning Theory / Practice |
| <input type="checkbox"/> Conferences                          | <input type="checkbox"/> Materials Science                     | <input type="checkbox"/> Testing / Assessment                  |
| <input type="checkbox"/> Consumer Chemistry                   | <input type="checkbox"/> Mathematics                           | <input type="checkbox"/> Textbooks                             |
| <input type="checkbox"/> Coordination Chemistry               | <input type="checkbox"/> Mechanisms of Reactions               | <input type="checkbox"/> Theoretical Chemistry                 |
| <input type="checkbox"/> Cryogenics                           | <input type="checkbox"/> Medicinal Chemistry                   | <input type="checkbox"/> Thermal Analysis                      |
| <input type="checkbox"/> Crystallography / Crystal Growth     | <input type="checkbox"/> Metabolism                            | <input type="checkbox"/> Thermodynamics                        |
| <input type="checkbox"/> Descriptive Chemistry                | <input type="checkbox"/> Metal Carbonyls                       | <input type="checkbox"/> Titration / Titrimetry                |
| <input type="checkbox"/> Diffusion                            | <input type="checkbox"/> Metals                                | <input type="checkbox"/> Toxicology                            |
| <input type="checkbox"/> Distance Learning                    | <input type="checkbox"/> Micelles                              | <input type="checkbox"/> Transition Elements                   |
| <input type="checkbox"/> Drugs / Pharmaceuticals              | <input type="checkbox"/> Microscale                            | <input type="checkbox"/> Undergraduate Research                |
| <input type="checkbox"/> Dyes / Pigments                      | <input type="checkbox"/> Minorities in Chemistry               | <input type="checkbox"/> UV–Vis Spectroscopy                   |
| <input type="checkbox"/> Electrochemistry                     | <input type="checkbox"/> Molecular Modeling / Dynamics         | <input type="checkbox"/> Vitamins                              |
| <input type="checkbox"/> Electron Transport                   | <input type="checkbox"/> Molecular Properties / Structure      | <input type="checkbox"/> Water / Water Chemistry               |
| <input type="checkbox"/> Electrophoresis                      | <input type="checkbox"/> Molecular Recognition                 | <input type="checkbox"/> Women in Chemistry                    |
| <input type="checkbox"/> Elementary / Middle School Science   | <input type="checkbox"/> MO Theory                             | <input type="checkbox"/> Writing in Chemistry                  |
| <input type="checkbox"/> Enzymes                              | <input type="checkbox"/> Multimedia                            | <input type="checkbox"/> X-ray Crystallography                 |

**Element(s)** List any elements that would be useful keywords \_\_\_\_\_