

Last updated: February 07, 2023 [View the latest guidelines online](#)

Scope of the Journal

The scope of [ACS Earth and Space Chemistry](#) includes the application of analytical, experimental, and theoretical chemistry to investigate research questions relevant to the Earth and space. The journal encompasses the highly interdisciplinary nature of research in this area while emphasizing chemistry and chemical research tools as the unifying theme. The journal publishes broadly in the domains of high and low-temperature geochemistry, atmospheric chemistry, marine chemistry, planetary chemistry, astrochemistry, and analytical geochemistry. *ACS Earth and Space Chemistry* publishes Articles, Letters, and Reviews to provide flexible formats to readily communicate all aspects of research in these fields.

Among the areas the journal covers are:

Earth Interior

- Mineral-melt phase equilibria, partitioning, and kinetics
- Mineralogy and mineral physics
- Igneous and metamorphic petrology, petrogenesis, and geochronology

Earth Surface

- Mineral-microbe-water reactions, thermodynamics, and kinetics
- Reactive transport modeling and colloid transport
- Multiscale science and scaling of geochemical and biogeochemical reactions

Atmosphere

- Atmospheric composition and reaction pathways
- Chemistry-climate interactions
- Biogeochemical cycles

Ocean

- Chemical fluxes and marine trace element chemistry
- Effects of global change on marine chemistry and the cryosphere
- Chemistry of the paleo-environment

Space

- Chemistry of planetary atmospheres and surfaces
- Investigations of meteorites and tektites
- Properties of cometary and interstellar materials
- Spectroscopy and chemistry of stars, interstellar clouds, and planetary formation

Analytical

- Analytical methods for characterization of Earth and Space materials

Manuscript Types

ACS *Earth and Space Chemistry* publishes peer-reviewed manuscripts including Articles, Letters, Comments, and Reviews that highlight recent developments and that further the understanding of earth and space chemistry.

- **Articles.** (~10,000 words) Articles are original works presenting an advance of broad scientific significance. Originality is defined as new experimental data, new interpretation of existing data, or new theoretical analyses of phenomena. Significance will be judged with respect to the breadth of impact of the reported findings.
- **Letters.** (~3,000 words) Letters are a *brief* original works presenting an advance of broad scientific significance that merit faster publication time. Originality is defined as new experimental data, new interpretation of existing data, or new theoretical analyses of phenomena. Significance will be judged with respect to the breadth of impact of the reported findings. Letters should be approximately 3 formatted Journal pages or less in length, including the abstract, body text, methods, references, and figure/scheme legends
- **Comments.** A Comment presents important comments on the work of others already published in *ACS Earth and Space Chemistry*; *ACS Earth and Space Chemistry* will not accept comments concerning research published elsewhere. The authors of the work being discussed will ordinarily be allowed a chance to reply.
- **Reviews.** (~14,000 words) Reviews are often invited but can also be initiated by authors. Suggested topics for Reviews will also be considered and any topic proposals **must** be emailed in advance to the Editor-in-Chief at eic@earthspacechem.acs.org. A good review critically evaluates existing work of multiple groups in a field or across disciplines, provides a logical organization, and makes the material more easily accessible to those who are not experts in the area through clear text and figures. Reviews should lay out challenges and future opportunities and should be broad rather than narrowly focused. Reviews should contain an abstract and appropriate references.
- **Perspectives.** (length limit: 4,000 word-equivalents) These contributions are personal reviews of a field or area, and they are focused, rather than comprehensive. Perspective authors are asked to assess the current status of a chosen field with an emphasis toward identifying key progress being made and research that is needed to advance a sub-discipline, theory, or technology. Perspectives should be based on scientifically sound statements with sufficient references and scientific underpinning to substantiate the views expressed. Perspectives will undergo peer review. Perspective articles can be submitted directly through the ACS Earth Space Chem. submission site without prior approval.

ACS Publishing Center

While this document will provide basic information on how to prepare and submit the manuscript as well as other critical information about publishing, we also encourage authors to visit the [ACS Publishing Center](#) for additional information on everything that is needed to prepare (and review) manuscripts for ACS journals and partner journals, such as

- [Mastering the Art of Scientific Publication](#), which shares editor tips about a variety of topics including making your paper scientifically effective, preparing excellent graphics, and writing cover letters.
- Resources on [how to prepare and submit a manuscript](#) to ACS Paragon Plus, ACS Publications' manuscript submission and peer review environment, including details on selecting the applicable [Journal Publishing Agreement](#).
- [Sharing your research](#) with the public through the ACS Publications open access program.

- [ACS Reviewer Lab](#), a free online course covering best practices for peer review and related ethical considerations.
- [ACS Author Lab](#), a free online course that empowers authors to prepare and submit strong manuscripts, avoiding errors that could lead to delays in the publication process.
- [ACS Inclusivity Style Guide](#), a guide that helps researchers communicate in ways that recognize and respect diversity in all its forms.

Manuscript Preparation

Submit with Fast Format

All ACS journals and partner journals have simplified their formatting requirements in favor of a streamlined and standardized format for an initial manuscript submission. Read more about the requirements and the benefits these serves authors and reviewers [here](#).

Manuscripts submitted for initial consideration must adhere to these standards:

- Submissions must be complete with clearly identified standard sections used to report original research, free of annotations or highlights, and include all numbered and labeled components.
- Figures, charts, tables, schemes, and equations should be embedded in the text at the point of relevance. Separate graphics can be supplied later at revision, if necessary.
- When required by a journal's structure or length limitations, manuscript templates should be used.
- References can be provided in any style, but they must be complete, including titles. For information about the required components of different reference types, please refer to the [ACS Style Quick Guide](#).
- Supporting Information must be submitted as a separate file(s).

Document Templates and Format

The templates facilitate the peer review process by allowing authors to place artwork and tables close to the point where they are discussed within the text. Learn more about document templates [here](#).

General information on the preparation of manuscripts may also be found in the [ACS Guide to Scholarly Communication](#).

Acceptable Software, File Designations, and TeX/LaTeX

See the list of [Acceptable Software](#) and appropriate [File Designations](#) to be sure your file types are compatible with ACS Paragon Plus. Information for manuscripts generated from [TeX/LaTeX](#) is also available.

Cover Letter

A cover letter must accompany every manuscript submission. During the submission process, you may type it or paste it into the submission system, or you may attach it as a file.

For *ACS Earth and Space Chemistry*, the following elements are expected to be included in the cover letter:

- Full manuscript title
- Name and complete contact information (mailing address, phone, and email) of the corresponding author
- Name(s) of any other author(s)
- A statement of why the paper is appropriate for *ACS Earth and Space Chemistry* which must include a clear statement of the objective of the study
- A description of any Supporting Information for Publication and/or for Review Only Material

Manuscript Text Components

Title. Titles should clearly and concisely reflect the emphasis and content of the paper. Titles of manuscripts may not contain words like “First” or “Novel”. Titles are of great importance for current awareness and information retrieval and should be carefully constructed for these purposes.

Authorship. Provide **authors’ full names**, the complete mailing address of each author’s affiliation when the work was completed. Current addresses of the authors can be provided as Author Information notes and will appear in the back of the article. Indicate the corresponding author by an asterisk and provide an email address for that person.

Abstract. Abstracts are required for all submissions (150-250 words). Abstract examples are available [here](#). The Table of Contents graphic will appear with the abstract text. The abstract serves multiple purposes and should be developed, with the graphic, to clearly and succinctly describe the objectives and outcome(s) of the study. The abstract will be the most widely read portion of the paper and will be used by abstracting services.

Keywords. All Articles, Letters, Reviews, and Perspectives should include 5-8 keywords. These keywords will appear in the PDF version of the article and will also be used as search terms in the HTML version of the article.

Text. Consult *The ACS Style Guide* for suggestions on the general writing style. It is not necessary to include information and details or techniques that should be common knowledge to those in the field. The use of acronyms, apart from established acronyms well known in the field, is discouraged.

Section Headings. Informative section headings and subheadings are encouraged for Articles and Reviews. Keep all information pertinent to a particular section and avoid repetition.

Introduction. The Introduction should state the purpose of the investigation and must include appropriate citations of relevant preceding work but should not include an extensive review of marginally related literature. The purpose statement should clearly outline how the work relates to the advancement of the field. If the manuscript describes a new concept, indicate why it is preferable to existing technologies and concepts in the field. If the manuscript describes an improvement in a specific area, the current state-of-the-art must be referenced and compared. Absence of appropriate literature references may be grounds for rejection of the manuscript.

Experimental Section. Authors must emphasize any unexpected, new, and/or significant hazards or risks associated with the reported work. This information should be in the experimental details section of the full article or communication. Include a clear, unambiguous description of materials, methods, and equipment in sufficient detail to permit repetition of the work elsewhere. Be consistent in voice and tense. For apparatus, list only devices of a specialized nature. List and describe preparation of special reagents only. Do not list those normally found in the laboratory or

preparations described in standard handbooks and texts. Because procedures are intended as instructions to permit work to be repeated by others, give adequate details of critical steps. Describe all safety considerations, including any procedures that are hazardous, any reagents that are toxic, and any procedures requiring special precautions, in enough detail so that workers in the laboratory repeating the experiments can take appropriate safety measures. Procedures and references for the neutralization, deactivation, and ultimate disposal of unusual byproducts should be included. Published procedures should be cited but not described, except where the presentation involves substantial modifications. While an experimental section is required to be in the main article and should provide sufficient detail to understand the experiments, additional details and procedures may be presented in the Supporting Information.

Results and Discussion. The results may be supported by tables and figures; however, tables or figures are not required. The discussion should be concise and deal with the interpretation of the results. Results and discussion can appear under separate distinct section heads or as a combined section, as best fits the content.

Conclusion. Use the conclusion section for interpretation and not to summarize information already presented in the text or abstract.

References. The reference list must be numbered sequentially by order of mention in the text with each reference individually numbered (no multiple part references). Reference citations in the text must be superscripted. Use *Chemical Abstracts Service Source Index* abbreviations for journal names (<http://cassi.cas.org/search.jsp>) and provide article title, publication, year, volume, and inclusive pagination. References should include the Digital Object Identifier (DOI) unique for each citation.

References are ultimately authors' responsibility; however, ACS uses a reference verification process to help ensure the accuracy and completeness of references.

Detailed information on formatting references can be found in *The ACS Style Guide* (2006).

Examples of the reference format:

1. Cuartero, M.; Crespo, G. A.; Bakker, E. Paper-Based Thin-Layer Coulometric Sensor for Halide Determination. *Anal. Chem.* **2015**, *87*, 1981–1990.
2. Bard, A. J.; Faulker, L. R. *Electrochemical Methods*, 2nd ed.; Wiley: New York, 2001.
3. Francesconi, K. A.; Kuehnelt, D. In *Environmental Chemistry of Arsenic*; Frankenberger, W. T., Jr., Ed.; Marcel Dekker: New York, 2002; pp 51–94.
4. Safaei, T. S.; Mohamadi, R. M.; Sargent, E. H.; Kelley, S. O. In Situ Electrochemical ELISA for Specific Identification of Captured Cancer Cells. *ACS Appl. Mater. Interfaces* **2015**, DOI: 10.1021/acsami.5b02404.

Acknowledgments. Authors may acknowledge financial support, technical assistance, gifts, the source of special materials, meeting presentation information, and the auspices under which work was done, including permission to publish. During manuscript submission, the submitting author is asked to select funding sources from the list of agencies included in the [FundRef Registry](#).

If the article is dedicated to another scholar, a brief statement, such as “This article is dedicated to [name]”, may be included in the acknowledgement. Dedications do not appear as footnotes or in other sections of the work.

Supporting Information

This information is provided to the reviewers during the peer-review process (for Review Only) and is available to readers of the published work (for Publication). Supporting Information must be submitted at the same time as the manuscript. See the list of [Acceptable Software by File Designation](#) and confirm that your Supporting Information is [viewable](#).

If the manuscript is accompanied by any supporting information files for publication, these files will be made available free of charge to readers. A brief, nonsentence description of the actual contents of each file, including the file type extension, is required. This description should be labeled Supporting Information and should appear before the Acknowledgement and Reference sections. Examples of sufficient and insufficient descriptions are as follows:

Examples of sufficient descriptions: “Supporting Information: ^1H NMR spectra for all compounds (PDF)” or “Additional experimental details, materials, and methods, including photographs of experimental setup (DOC)”.

Examples of insufficient descriptions: “Supporting Information: Figures S1-S3” or “Additional figures as mentioned in the text”.

When including supporting information for review only, include copies of references that are unpublished or in-press. These files are available only to editors and reviewers.

Research Data Policy

All ACS journals strongly encourage authors to make the research data underlying their articles publicly available at the time of publication.

Research data is defined as materials and information used in the experiments that enable the validation of the conclusions drawn in the article, including primary data produced by the authors for the study being reported, secondary data reused or analyzed by the authors for the study, and any other materials necessary to reproduce or replicate the results.

The [ACS Research Data Policy](#) provides additional information on Data Availability Statements, Data Citation, and Data Repositories.

Language and Editing Services

A well-written paper helps share your results most clearly. ACS Publications' [English Editing Service](#) is designed to help scientists communicate their research effectively. Our subject-matter expert editors will edit your manuscript for grammar, spelling, and other language errors so your ideas are presented at their best.

Preparing Graphics

The quality of illustrations in ACS journals and partner journals depends on the quality of the original files provided by the authors. Figures are not modified or enhanced by journal production staff. All graphics must be prepared and submitted in digital format.

Graphics should be inserted into the main body whenever possible. Please see Appendix 2 for additional information.

Any graphic (figure chart, scheme, or equation) that has appeared in an earlier publication should include a [credit line](#) citing the original source. Authors are responsible for [obtaining written permission](#) to re-use this material.

Figure and Illustration Services

The impact of your research is not limited to what you can express with words. Tables and figures such as graphs, photographs, illustrations, diagrams, and other visuals can play a significant role in effectively communicating your findings. Our [Artwork Editing](#) and [Graphical Abstract](#) services generate publication-ready figures and Table of Contents (TOC) graphics that conform to your chosen journal's specifications. For figures, this includes changes to file type, resolution, color space, font, scale, line weights, and layout (to improve readability and professional appearance). For TOC graphics, our illustrators can work with a rough sketch or concept or help extract the key findings of your manuscript directly for use as a visual summary of your paper.

Preparing for Submission

Manuscripts, graphics, supporting information, and required forms, as well as manuscript revisions, must all be submitted in digital format through [ACS Paragon Plus](#), which requires an ACS ID to log in. Registering for an ACS ID is fast, free, and does not require an ACS membership. Please refer to Appendix 1 for additional information on preparing your submission

Prior Publication Policy

ACS Earth and Space Chemistry considers for publication only original work that has not been previously published and is not under consideration for publication elsewhere. When submitting a manuscript, an author should inform the editor of any prior dissemination of the content in print or electronic format. *ACS Earth and Space Chemistry* authors are allowed to deposit an initial draft of their manuscript in a preprint service. Please note any use of a preprint server in the cover letter, and as appropriate, state how the manuscript has been adjusted/updated between deposition and submission. All other prior/redundant publication is forbidden.

Upon publication in *ACS Earth and Space Chemistry*, authors are advised to add a link from the preprint to the published paper via the Digital Object Identifier (DOI). For further details, contact the [Editorial Office](#).

Editorial Policies

Peer Review. Submitted manuscripts should not be published or under consideration elsewhere and may be examined using software to detect duplication of previously published material.

Reject after Editorial Review. The Editors may identify submissions that in their expert opinions would not fare well during the review process; these manuscripts may be rejected without additional external review. Multiple editors will be consulted during this initial screening. This process shortens the time to decision and ensures a manageable workload and prevents overburdening for reviewers. Examples of situations where manuscripts may not be peer reviewed include but are not limited to the following: the paper is a routine extension or minor technical improvement of research already published; the science lies outside the scope of *ACS Earth and Space Chemistry*; the science does not meet *ACS Earth and Space Chemistry's* standards;

insufficient data are provided to properly substantiate the claims and conclusions made; closely related work has already been published and few, if any, new insights are provided; the work is not of general appeal to the readership of *ACS Earth and Space Chemistry*; the manuscript is a resubmission of a paper that has been previously declined without the addition of adequate new science and/or without notification in the cover letter of previous submission.

Editorial Decision. Reviewers will evaluate the manuscript on the basis of originality, technical quality, clarity of presentation, and importance to the field. The Editors will evaluate the reviewers' comments in the context of the scope and aims of the journal and make the final decision on each manuscript. The possible decisions include: accept; revise to address the concerns of the reviewers before the editors make a final decision; decline but consider a resubmission if significant additional work is completed; or decline on the grounds of major technical or interpretational flaws, insufficient advance, or lack of novelty and broad interest.

In cases when reviewers make different or conflicting recommendations, the Editors may request additional information from the reviewers, consult other experts, and/or ask the authors to clarify the sections in question. Some manuscripts that are declined may be considered upon resubmission if significant additional work is completed, but authors are required to let the Editor know that the work is being resubmitted for reconsideration.

Reviewers may be asked to review subsequent versions of the manuscript, especially if new data have been added to the paper, to evaluate whether the authors have addressed the scientific concerns appropriately. In such cases, blind copies of all reviewers' comments are normally sent to the reviewers. The Editors will expedite any additional rounds of review to ensure timely publication.

The Editors strongly disapprove of any attempts by authors to determine the identity of reviewers or to confront potential reviewers. The editorial policy of this journal is neither to confirm nor to deny any speculation about the identities of our reviewers. Authors whose manuscripts are published in *ACS Earth and Space Chemistry* are expected to review manuscripts submitted by other researchers from time to time. Information for Reviewers is published separately online (<http://pubs.acs.org/page/ascefj/submission/reviewers.html>).

Providing Potential Reviewer Names

Authors are required to suggest four or more potential reviewers, including email addresses. Authors are encouraged to avoid suggesting reviewers from the authors' institutions. Do not suggest reviewers who may have a [real or perceived conflict of interest](#). Whenever possible, suggest academic email addresses rather than personal email addresses.

Manuscript Transfer

If your submission is declined for publication by this journal, the editors might deem your work to be better suited for another ACS Publications journal or partner journal and suggest that the authors consider transferring the submission. [Manuscript Transfer](#) simplifies and shortens the process of submitting to another ACS journal or partner journal, as all the coauthors, suggested reviewers, manuscript files, and responses to submission questions are copied by ACS Paragon Plus to the new draft submission. Authors are free to accept or decline the transfer offer.

Note that each journal is editorially independent. Transferring a manuscript is not a guarantee that

the manuscript will be accepted, as the final publication decision will belong to the editor of the next journal.

PRODUCTION AND PUBLICATION

Proofs via ACS Direct Correct

Correction of the galley proofs is the responsibility of the Corresponding Author. The Corresponding Author of an accepted manuscript will receive e-mail notification and complete instructions when page proofs are available for review via [ACS Direct Correct](#). Extensive or important changes on page proofs, including changes to the title or list of authors, are subject to review by the editor.

It is the responsibility of the Corresponding Author to ensure that all authors listed on the manuscript agree with the changes made on the proofs. Galley proofs should be returned within 48 hours in order to ensure timely publication of the manuscript.

Publication Date and Patent Dates

Accepted manuscripts will be published on the ACS Publications Web site as soon as page proofs are corrected and all author concerns are resolved. The first date on which the document is published on the Web is considered the publication date.

Publication of manuscripts on the Web may occur weeks in advance of the cover date of the issue of publication. Authors should take this into account when planning their patent and intellectual property activities related to a document and should ensure that all patent information is available at the time of first publication, whether ASAP or issue publication.

All articles published ahead of print receive a unique Digital Object Identifier (DOI) number, which is used to cite the manuscript before and after the paper appears in an issue. Additionally, any supplemental information submitted along with the manuscript will automatically be assigned a DOI and hosted on Figshare to promote open data discoverability and use of your research outputs.

ASAP Publication

Manuscripts will be published on the “ASAP Articles” page on the web as soon as page proofs are corrected and all author concerns are resolved. ASAP publication usually occurs within a few working days of receipt of page proof corrections, which can be several weeks in advance of the cover date of the issue.

Post-Publication Policies

The American Chemical Society follows guidance from the [Committee on Publication Ethics](#) (COPE) when considering any ethical concerns regarding a published article, Retractions, and Expressions of Concern.

Additions and Corrections

Additions and Corrections may be requested by the author(s) or initiated by the Editor to address important issues or correct errors and omissions of consequence that arise after publication of an article. All Additions and Corrections are subject to approval by the Editor, and should bring new and directly relevant information and corrections that fix scientific facts. Minor corrections and additions will not be published. Readers who detect errors of consequence in the work of others should contact the corresponding author of that work.

Additions and Corrections must be submitted as new manuscripts via ACS Paragon Plus by the Corresponding Author for publication in the "Addition/Correction" section of the Journal. The corresponding author should obtain approval from all coauthors prior to submitting or provide evidence that such approval has been solicited. The manuscript should include the original article title and author list, citation including DOI, and details of the correction.

Retractions

Articles may be retracted for scientific or ethical reasons and may be requested by the article author(s) or by the journal Editor(s), but are ultimately published at the discretion of the Editor. Articles that contain seriously flawed or erroneous data such that their findings and conclusions cannot be relied upon may be retracted in order to correct the scientific record. When an article is retracted, a notice of Retraction will be published containing information about the reason for the Retraction. The originally published article will remain online except in extraordinary circumstances (e.g. where deemed legally necessary, or if the availability of the published content poses public health risks).

Expressions of Concern

Expressions of Concern may be issued at the discretion of the Editor if:

- there is inconclusive evidence of research or publication misconduct by the authors;
- there is evidence that the findings are unreliable but the authors' institution will not investigate the case;
- an investigation into alleged misconduct related to the publication either has not been, or would not be, fair and impartial or conclusive;
- an investigation is underway but a judgment will not be available for a considerable time.

Upon completion of any related investigation, and when a final determination is made about the outcome of the article, the Expression of Concern may be replaced with a Retraction notice or Correction.

Sharing Your Published Article

At ACS Publications, we know it is important for you to be able to share your peer reviewed, published work with colleagues in the global community of scientists. As sharing on sites known as scholarly collaboration networks (SCNs) is becoming increasingly prevalent in today's scholarly research ecosystem, we would like to remind you of the many ways in which you, a valued ACS author, can [share your published work](#).

Publishing open access makes it easy to share your work with friends, colleagues, and family members. In addition, ACS Publications makes it easy to share your newly published research with ACS Articles on Request (see below). Don't forget to promote your research and related data on social media, at conferences, and through scholarly communication networks. Increase the

impact of your research using the following resources: [Altmetrics](#), [Figshare](#), [ACS Certified Deposit](#)

E-Prints

When your article is published in an ACS journal or partner journal, corresponding authors are provided with a link that offers up to 50 free digital prints of the final published work. This link is valid for the first 12 months following online publication, and can be shared via email or an author's website. After one year, the access restrictions to your article will be lifted, and you can share the [Articles on Request](#) URL on social media and other channels. To access all your Articles on Request links, log in to your ACS Publishing Center account and visit the "My Published Manuscripts" page.

Reprints

[Article](#), [journal](#), and [commercial](#) reprints are available to order.

Appendix 1: PREPARING FOR SUBMISSION

We've developed ACS' publishing and editorial policies in consultation with the research communities that we serve, including authors and librarians. Browse our policies below to learn more.

Ethical Guidelines

ACS editors have provided [Ethical Guidelines](#) for persons engaged in the publication of chemical research—specifically, for editors, authors, and reviewers. Each journal also has a specific [policy on prior publication](#).

OFAC Compliance

As a U.S.-based non-profit organization, the American Chemical Society (ACS) is required to comply with U.S. sanctions laws and regulations administered by the [U.S. Treasury Department's Office of Foreign Assets Control](#) (OFAC). While these laws and regulations permit U.S.-based publishers like ACS to engage in publishing-related activities with authors located in sanctioned regions in many cases, ACS may be prohibited under U.S. law from engaging in publishing-related activities in some cases, including, but not limited to, instances where an author or the institution with which an author is affiliated is located in a particular sanctioned region or has been designated by OFAC as a [Specially Designated National](#) (SDN) pursuant to certain U.S. sanctions programs. ACS reserves the right to refrain from engaging in any publishing-related activities that ACS determines in its sole discretion may be in violation of U.S. law.

Safety Considerations

Authors must emphasize any unexpected, new, and/or significant hazards or risks associated with the reported work. This information should be in the Experimental Section of a full article and included in the main text of a letter. Statement examples can be found in the [Safety Statement Style Sheet](#) and additional information on communicating safety information from the *ACS Guide to Scholarly Communication* [is freely available here](#).

Conflict of Interest Disclosure

A statement describing any financial conflicts of interest or lack thereof is published in each ACS journal and partner journal article.

During the submission process, the Corresponding Author must provide a statement on behalf of all authors of the manuscript, describing all potential sources of bias, including affiliations, funding sources, and financial or management relationships, that may constitute conflicts of interest. If the manuscript is accepted, the statement will be published in the final article.

If the manuscript is accepted and no conflict of interest has been declared, the following statement will be published in the final article: "The authors declare no competing financial interest."

Plagiarism

In publishing only original research, ACS is committed to deterring plagiarism, including self-plagiarism. ACS Publications uses CrossCheck's iThenticate software to screen submitted manuscripts for similarity to published material. Note that your manuscript may be screened during the submission process.

Further information about plagiarism can be found in Part B of the [Ethical Guidelines to Publication of Chemical Research](#). See also the [press release](#) regarding ACS' participation in the CrossCheck initiative.

Authorship, Author List, and Coauthor Notification

Authors are required to obtain the consent of all their coauthors prior to submitting a manuscript. The submitting author accepts the responsibility of notifying all coauthors that the manuscript is being submitted.

During manuscript submission, the submitting author must provide contact information (full name, email address, institutional affiliation, and mailing address) for all of the coauthors. Because all of the author names are automatically imported into the electronic [Journal Publishing Agreement](#), the names must be entered into ACS Paragon Plus. (Note that coauthors are not required to register in ACS Paragon Plus.) Author affiliation should reflect where the work was completed, even if the author has since left that institution. Authors may include a note with a current address if their institution has changed since the work was completed.

To expedite the processing of your manuscript, please format your author and affiliation information according to the guidelines in this link:

<https://pubsapp.acs.org/paragonplus/submission/author-address-information.pdf>.

Criteria for authorship can be found in Part B of the [Ethical Guidelines to Publication of Chemical Research](#). Artificial intelligence (AI) tools do not qualify for authorship. The use of AI tools for text or image generation should be disclosed in the manuscript within the Acknowledgment section with a description of when and how the tools were used. For more substantial use cases or descriptions of AI tool use, authors should provide full details within the Methods or other appropriate section of the manuscript.

If any change in authorship is necessary after a manuscript has been submitted, confirmation is required that all of the authors (including those being added or removed) have been notified and have agreed to the change. To provide this confirmation, authors are asked to complete and sign an [authorship change form](#) and provide the completed form to the appropriate editorial office.

Patent Activities and Intellectual Property

Authors are responsible for ensuring that all patent activities and intellectual property issues are satisfactorily resolved prior to first publication (ASAP or in issue). Acceptance and publication will not be delayed for pending or unresolved issues of this nature.

Open Researcher and Contributor ID (ORCID)

Authors submitting manuscript revisions are required to provide their own personal, validated ORCID iD before completing the submission, if an ORCID iD is not already associated with their ACS Paragon Plus user profiles. This ID may be provided during original manuscript submission or when submitting the manuscript revision. All authors are strongly encouraged to register for an ORCID iD, a unique researcher identifier. The ORCID iD will be displayed in the published article for any author on a manuscript who has a validated ORCID iD associated with ACS when the manuscript is accepted.

ORCID iDs should not be typed into the manuscript. ACS publishes only those ORCID iDs that have been properly verified and linked **before the manuscript is accepted**. After your ORCID iD is linked, it will be displayed automatically in all subsequently accepted manuscripts for any/all ACS journals. We do not publish ORCID iDs provided during proof review or via other communications after a manuscript is accepted for publication.

With an ORCID iD, you can create a profile of your research activities to distinguish yourself from other researchers with similar names, and make it easier for your colleagues to find your publications. If you do not yet have an ORCID iD, or you wish to associate your existing ORCID iD with your ACS Paragon Plus account, you may do so by clicking on “Edit Your Profile” from your ACS Paragon Plus account homepage and following the ORCID-related links. Learn more at www.orcid.org.

Copyright and Permissions

To obtain forms and guidelines for copyright transfer, obtaining permissions from copyright owners, and to explore a Copyright Learning Module for chemists, click [here](#).

Funder Reporting Requirement

Authors are [required to report funding sources](#) and grant/award numbers. Enter **ALL** sources of funding for **ALL** authors in **BOTH** the Funder Registry Tool in ACS Paragon Plus and in your manuscript to meet this requirement.

Open Access Compliance

ACS offers options by which authors can fulfill the requirements for open access and deposition into repositories for funded research. Visit our ACS Open Science site to see [how to fulfill requirements for specific funders](#) and to find out if you are eligible to publish under a [Read + Publish agreement](#) between ACS and your institution. You can also find out more about [Open Access Compliance](#) and [ACS Open Science initiatives](#).

Appendix 2: Preparing Graphics

Resolution

Digital graphics pasted into manuscripts should have the following minimum resolutions:

- Black and white line art, 1200 dpi
- Grayscale art, 600 dpi
- Color art, 300 dpi

Size

Graphics must fit a one- or two-column format. Single-column graphics can be sized up to 240 points wide (3.33 in.) and double-column graphics must be sized between 300 and 504 points (4.167 in. and 7 in.). The maximum depth for all graphics is 660 points (9.167 in.) including the caption (allow 12 pts. For each line of caption text). Lettering should be no smaller than 4.5 points in the final published format. The text should be legible when the graphic is viewed full-size. Helvetica or Arial fonts work well for lettering. Lines should be no thinner than 0.5 point.

Color

Color may be used to enhance the clarity of complex structures, figures, spectra, and schemes, etc., and color reproduction of graphics is provided at no additional cost to the author. Graphics intended to appear in black and white or grayscale should not be submitted in color.

Type of Graphics

Table of Contents (TOC)/Abstract Graphic

Consult the Guidelines for [Table of Contents/Abstract Graphics](#) for specifications.

Our team of subject-matter experts and graphical designers can also help generate a compelling TOC graphic to convey your key findings. Learn more about our [Graphical Abstract service](#).

Figures

A caption giving the figure number and a brief description must be included below each figure. The caption should be understandable without reference to the text. It is preferable to place any key to symbols used in the artwork itself, not in the caption. Ensure that any symbols and abbreviations used in the text agree with those in the artwork.

Charts

Charts (groups of structures that do not show reactions) may have a brief caption describing their contents.

Tables

Each table must have a brief (one phrase or sentence) title that describes the contents. The title should be understandable without reference to the text. Details should be put in footnotes, not in the title. Tables should be used when the data cannot be presented clearly in the narrative, when many numbers must be presented, or when more meaningful inter-relationships can be conveyed by the tabular format. Tables should supplement, not duplicate, information presented in the text and figures. Tables should be simple and concise.

Schemes

Each scheme (sequences of reactions) may have a brief caption describing its contents.

Chemical Structures

Chemical structures should be produced with the use of a drawing program such as ChemDraw.

Cover Art

ACS Earth and Space Chemistry encourages authors to submit images to be considered for use on the journal's front cover or [Supplementary Covers](#). Images can be submitted at the time of the submission of their revised manuscript. If your article is accepted for publication, your suggestion may also be selected for use on one of the journal's covers. If your art is selected for front cover, ACS will send you information about how to request one complimentary 18" by 24" printed poster featuring your work. Images chosen for the front cover will be published at no cost to the author.

Your cover image submissions should be colorful and visually engaging, with minimal text. The cover image should be an artistic and scientifically accurate representation of your manuscript - it should not resemble a graphical abstract or data figure. Submit your cover image, along with a clear caption (less than 50 words) explaining the image, as supplementary files to ACS Paragon Plus with your revised manuscript. Image files should be submitted as TIF, JPG, PNG or EPS files with a resolution of at least 300 dpi for pixel-based images. Images should be 8.19 in wide x 10.00 in high (or 20.80 cm x 25.40 cm). The journal title will obscure a 4 in. x 4 in. (or 10.16 cm x 10.16 cm) section in the upper left corner of the image.

If you wish to be considered only for the free front cover, and not a paid supplementary cover, please respond NO accordingly to the Journal Covers question in ACS Paragon Plus. For more information on the Supplementary Covers program, please [see this webpage](#). All art submitted for consideration for a supplementary cover will also be considered for a front cover.

Web Enhanced Objects (WEO)

The Web editions of ACS journals allow readers to view multimedia attachments such as animations and movies that complement understanding of the research being reported.

WEOs should be uploaded in ACS Paragon Plus with 'Web Enhanced Object' selected as the file

designation. Consult the list of [compatible WEO formats](#).