

Why Was My Paper Rejected without Review?



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Environmental Science & Technology has a proud history of publishing outstanding science in environmental science research. The journal takes great pride in excellence in the review process, including the quality and constructive tone of peer review feedback. These high standards and expectations of the publication are defined and maintained by a diverse team of global scientific experts. This quality review process is fundamental to *ES&T*'s ability to publish the most important and impactful research in our field, and the journal would like to express its gratitude to the dedicated scientific researchers who donate their time and expertise in delivering this excellence in review.

In 2020, *ES&T* is projected to receive over 8000 new submissions. To effectively manage the review of this number of manuscripts, *ES&T* has implemented a rigorous system involving an initial assessment by the Editor in Chief or Executive Editor team, and if appropriate, by an Associate Editor with domain expertise. The decision is made at this point whether the manuscript should continue and undergo full peer review. The peer review process involves selecting and inviting multiple independent world-class scientific reviewers for an in-depth assessment of the manuscript and may take some weeks to complete. Therefore, to minimize author delays and to avoid reviewer fatigue, a significant fraction of manuscripts are not selected for full peer review and are returned to the corresponding author by the *ES&T* Editorial team. This “prescreening” approach prior to peer review provides several benefits to our scientific community, including rapid and informed decisions for authors, and prioritizing only those papers that are considered to be of high quality, and possess both novelty and impactfulness to undergo the peer review process.

The *ES&T* Editorial team handles this prescreening review process with sincere earnestness. All papers have a minimum of two prescreen reviews before making a “*Reject Without Review*” decision. If the novelty and potential impact of a paper is uncertain, the benefit of the doubt is afforded to the authors and the manuscript is sent to an Associate Editor with appropriate expertise to provide a third opinion. The decision is then made either to “*Reject After Editorial Review*” or to send for peer review. If rejected at this stage, the Editorial team tries to provide authors with constructive feedback and a rationale for the decision.

Manuscripts may also be rejected with a “*Reject and Resubmit*” decision. In this case, the editors have determined the paper is of high quality, novelty, and impact, but the authors need to address critical aspects of the manuscript to meet the minimum criteria for review, for example the manuscript may require additional experiments, a more rigorous data analysis, or significant rewriting (see more information below). This

decision type indicates the editors actively encourage resubmission of the paper if the defined deficiencies are addressed.

■ SO WHAT MAKES A GOOD *ES&T* PAPER?

ES&T is looking for high quality, novel science that is of broad interest and relevance to the environmental research community, as described in more detail in the *ES&T* editorial “Making Waves”.¹ The manuscript should clearly articulate the environmental relevance of the work, its novelty relative to prior works, and its potential impact in the introduction and discussion sections of the manuscript. The absence of this contextualization is a primary reason papers are rejected without review.² In addition, manuscripts must demonstrate high scientific rigor, including appropriate experimental setup, replicate samples, treatment groups and controls, analytical quality assurance/quality control (QA/QC), and robust statistical methods. The results should also be generalizable beyond the narrower scope of the system studied. Finally, the release of data to a FAIR (findable, accessible, interoperable, and reusable) data repository is expected. Please refer to the journal [author guidelines](#) for further information on data repositories.

■ SCOPE, NOVELTY, AND IMPACT

Scope, *novelty*, and *impact* are broad terms, but in the context of manuscript submission to *ES&T*, the editors have made the following definitions as general guidance.

Scope. *ES&T* has broad scope, publishing research contributions across a wide range of environmental science, engineering, and policy topics. Examples include investigations of contaminant behavior in air, water, soil, and biological media, (across trophic levels from microbiota to humans), human and ecosystem health, biogeochemical cycling of elements, a broad spectrum of analytical tools from novel spectroscopy to systems analysis to advanced data science methods to name a few. The critical element linking these disparate areas is the “environment”. Therefore, to remain in scope, it is critical to emphasize the environmental context and relevance of the research work, i.e., what are the broad implications of the work to the environment and for the environmental research and policy communities? A 20–30 word “synopsis” is now required for all

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ES&T research and perspective articles to succinctly capture the environmental relevance of the work to help authors remain “in scope”.

Novelty and Impact. The novelty and impact of the research presented is considered at all stages of the review process. ES&T recognizes that building a body of science in a field requires multiple lines of evidence to support early observations of new phenomena, but seeks papers that go beyond incremental progress. Using tools such as Web of Science and Google Scholar, the ES&T Editorial team assess the novelty of the research based on a paper’s title, keywords, and key conclusions during prescreening, to assess whether or not a specific material, process, or analysis is indeed novel. A similar approach is conducted by other ACS journals.³ For example, manuscripts with findings that will change the way others in the field think about a process, approach a problem, measure or model a contaminant, or regulate and incentivize behavior change will be viewed as *impactful* and readily received by the ES&T community. However, reporting “novel” observations without simultaneously providing significant and realistic connections to environmental processes or systems will be returned. It is not always possible to assess the potential impact of a particular process or analytical method, a priori. However, it is the responsibility of the authors to clearly articulate the *potential* impact of the work on the field in a concise and convincing manner and without exaggeration. Authors are encouraged to clearly articulate how their work is novel in the cover letter, abstract, and paper introduction.

■ CRITERIA FOR ALL MANUSCRIPTS TO BE CONSIDERED FOR PEER REVIEW

Papers that do not follow the [author guidelines](#) are unlikely to pass the prescreening process to peer review. Manuscripts should use good English grammar or make use of [language editing services](#) if in doubt. Data visualizations including figures and tables must be well-constructed, legible, and intuitive, with detailed captions. Expectations of scientific rigor include reporting appropriate replication, measurement error, statistical significance testing, and the use of controls. All key variables affecting the measurements should be reported with appropriate uncertainty data. Testing should be conducted at environmentally relevant concentrations, and/or under environmentally representative conditions. Methods must be clearly described to enable others to reproduce the results, should represent best practice, and work under environmental conditions or with environmental samples.

■ SPECIFIC GUIDANCE ON SELECTED TOPICS

ES&T is broad in scope and publishes in both established and emerging environmental research areas.⁴ The journal receives a large number of manuscripts on certain topics that are of mixed quality, novelty, and impact. Although the quality bar is dynamic and evolves at a rapid pace as the science advances,⁴ there are basic criteria that should be present in manuscripts on these topics to have a greater likelihood of advancing through the prescreening process.

COVID-19 Studies. The role of the environment in the distribution, transmission, persistence, and disinfection of SARS-CoV-2 or related viruses in the environment (defined as outdoor and indoor environments including hospitals and PPE), and the use of wastewater to gain insight into COVID-19 epidemiology are examples of crucial and rapidly evolving areas

of research on this topic. Papers must report the full methods used, and be quantitative. Papers must have appropriate sample sizes and follow MIQE guidelines for the reporting of PCR data.⁵ Although much research in this area is novel, the work must provide some significant advancement of understanding of the science of COVID-19.

Microplastics. Manuscripts describing the measurement, fate, and toxicity of microplastics typically require inclusion of environmental samples of natural or incurred microplastics to be relevant, and must include appropriate quality assurance/quality control information (QA/QC). Studies with pristine spherical polystyrene beads generally lack environmental significance, and would require extensive justification by the authors why different materials, shapes, and aspect ratios of microplastics found in environmental samples could not be tested. State-of-the-art microplastic studies also require analytical verification/characterization with proper QA/QC and controls rather than simple visual inspection. For example, consistency, shape, and size, at a minimum, need to be characterized. New methods need to be validated under environmental conditions with environmentally relevant samples. Testing (e.g., toxicity, fate, bioaccumulation) needs to be performed at environmentally relevant concentrations.

Emerging Contaminants. Papers that address the sources, occurrence, transport, and fate of emerging organic, inorganic, particulate, and biological contaminants must include a rationale for why the contaminant is of environmental interest. Quantitative analysis with analytical method performance (e.g., accuracy, precision, limits of detection/quantification, and appropriate controls) is expected. Environmental samples with the measurement of actual environmental concentrations is strongly preferred along with state-of-the-art statistical analysis (e.g., data censoring), especially if the data are used for trends analysis.

“Novel” Materials and Technology. New materials (e.g., catalysts, adsorbents, membranes) for environmental treatment processes, remediation, carbon sequestration, membrane separations, etc. are of great interest to the field and to ES&T. This type of research is often described in the submission as “novel”, i.e., a material or process that has not been previously reported. While complete characterization of the new material is expected, the majority of the paper should focus on the material’s *performance*. In addition, the environmental impact of the new material must also be stated to articulate its utility to the field of environmental science. For example, a study of a new adsorptive materials reporting multiple isotherms (Freundlich, Langmuir, second-order kinetics) but lacking benchmarking against common materials (e.g., activated carbon for organic adsorption, titanium dioxide for photocatalysis), or that are not performed at environmentally relevant concentrations, is unlikely to progress to peer review. Similarly, a new synthesis method that is described as “greener” and more sustainable, but lacks widely accepted sustainability assessment metrics will be unlikely to advance beyond prescreening. New applications of materials should consider energy (carbon) and/or water impacts to support claims of “sustainability” or information on energy savings potential (e.g., kWh/m³).

Water and Wastewater Treatment Technologies. Papers reporting new treatment technologies should include a comparison of the new approach against existing state-of-the-art technologies/practices and an assessment of the benefits. Adsorbents need to describe both isotherms and kinetics, preferably using mechanistic models rather than empirical ones.

Testing must be performed under environmentally relevant conditions, matrices, and contaminant concentrations. Data and/or model analysis should provide a deep (preferably mechanistic) understanding of the processes being investigated. Simple time course data is insufficient to advance the field.

Microbiology. Microbes, including viruses, are ubiquitous in both engineered and natural environmental systems and are of broad interest to the environmental field from both a positive (e.g., drivers of biodegradative processes) and negative (e.g., pathogens and antibiotic resistance) standpoint. Key to considering a manuscript of microbiological focus is the extent to which the work has a clear environmental application and ideally provides an integrated analysis with respect to physicochemical attributes of the system of interest. Papers that are highly focused on a single microorganism or on metabolic pathways without a clear path toward environmental application (e.g., monitoring, remediation, engineering controls) are better suited for a microbiology-focused journal. Papers that use molecular data obtained using qPCR or digital PCR must follow appropriate MIQE reporting guidelines.⁶ Microbiome studies must also follow best practices for reporting such as those described by Pollock et al. 2018.⁵ Methods and results for positive and negative controls must be included. The QA/QC data and full data set should be deposited in a recognized and publically accessible databank.

Gas-Phase Pollutant Studies. Materials, processes, and models describing the removal of gas-phase pollutants require proper documentation of the QA/QC procedures to determine quality of the data and/or model output. Finally, studies focused only on air pollutants will be under extra scrutiny regarding the novelty of the approach or result.

Particulate Matter (Measurement and Toxicity). The use of appropriate measurement methods and adequate characterization of the particle properties relevant to the study are essential. Particle characterization above and beyond size (e.g., chemical composition, reactivity, health impact) are required. For toxicity related PM studies, proper dosimetry is required.

Toxicity Studies. Toxicity (human and ecotoxicological) studies must include multiple exposure concentrations that have environmental relevance to provide a dose–response, and/or include a time course study. Concentrations of the agent must be measured, not nominal, and if required (see [Microplastics Section](#) above), physically characterized. Studies must include both a positive and negative control, and describe the apical implications of the study to effects at the individual or population levels of biological organization (e.g., adverse outcome pathways). Ideally, toxicity studies will be policy relevant.

Field and Case Studies. Occurrence of pollutants in air, soil, lakes/rivers, and across treatment systems provide important benchmarks that improve understanding of current pollutant exposures for relevant communities. *ES&T* seeks submissions that have broad spatial and temporal study sites, rather than a limited number of geographic locations. Authors seeking to publish case studies at any scale should interpret their findings relative to broader regional and global occurrence trends.

Sustainable Development Goals and Appropriate Technology. The 17 Sustainable Development Goals (SDGs) (<https://sdgs.un.org/goals>) provide a path forward for the world to achieve a sustainable future. In addition to the provision of basic sanitation, safe water, and clean energy, the

SDGs include development issues related to climate action, responsible consumption and production, and sustainable cities and communities. Environmental research can also support SDGs on reducing inequality, addressing gender equality and achieving zero hunger. Research on appropriate technologies are welcome but manuscripts will be reviewed in similar capacity as those that provide input on “novel” materials and technology. The research should demonstrate that the system also considers whether it is culturally, economically, and/or socially suitable to the community as well as environmentally and infrastructurally suitable to the geography in which it is implemented. Research in this area cannot be a specific case study that is not generalizable and the sample representativeness, and size should allow for transferable findings to other communities. SDG 17 is focused on building partnerships and *ES&T* encourages researchers from high income countries to build mutually beneficial partnerships with researchers from low and middle income countries that are demonstrated in the manuscript authorship and description of contributions.

Lifecycle Assessment (LCA). This is an important tool in the environmental toolbox. Manuscripts applying standard methods through reliance on commercial software to compare two well-defined or commercial products or processes are better suited to a more specialized journal. However, successful LCA papers in *ES&T* generally either extend LCA methods or are applied to address important and novel technology or policy questions of broad interest. They also require proper documentation of the scope and inventory data used, and include relevant and robust uncertainty and sensitivity analyses.

Data Science and Machine Learning (ML). *ES&T* welcomes papers that use machine learning, artificial intelligence (AI), and other advanced statistical methodologies and data science approaches for environmental engineering and science (e.g., predicting material performance from its properties, modeling watersheds or biological processes, etc.). Papers need to include either novel or clever applications of existing methodologies and approaches, or address an important environmental process that was not approachable using standard analysis tools. These papers need to demonstrate the “value added” of taking a ML approach.

We hope that authors will carefully consider the guidance provided here when preparing their manuscripts for submission to *ES&T*. Ensuring that these criteria are addressed will help authors move beyond prescreening and enter the peer review process. Our editors are committed to providing authors with timely feedback to bring out the best in your work and improve your contributions to the scientific community. We fully support first-time authors to *ES&T* and encourage a diversity of authors from across the globe as environmental challenges know few borders. We look forward to receiving your highest quality papers!

Sincerely,
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Notes

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