

Why Wasn't My ACS Sustainable Chemistry & Engineering Manuscript Sent Out for Review?

ACS Sustainable Chemistry & Engineering seeks to provide authors rapid editorial decisions by quickly identifying manuscripts that are not likely to be of broad interest to the readers of the journal. These manuscripts are returned to authors after careful review by our editorial team, prior to external peer review. Such rapid decision making allows authors to expeditiously find alternative routes for publishing their work. The criteria used by ACS Sustainable Chemistry & Engineering in making these editorial decisions include those used commonly by all scientific journals, such as lack of explanations, mechanisms, or testable hypotheses for observed data; inadequate error and uncertainty analyses; inadequate validation or sensitivity analyses of computational work; failure to summarize how the contribution advances the current state of the field; and a sufficiently inadequate use of language or organization such that the scientific advances of the work can not be adequately assessed. Such criteria have been previously described in editorials by other ACS journals.¹ In making decisions on each manuscript prior to sending for peer review, our editorial team applies three additional criteria, including some that are unique to the field of sustainable chemistry and engineering.

■ DEMONSTRATION OF A CLEAR AND COMPELLING LINK TO SUSTAINABLE CHEMISTRY AND ENGINEERING

ACS Sustainable Chemistry & Engineering publishes manuscripts on a broad range of topics related to green chemistry, green engineering, and the grand challenges for sustainability in the chemical enterprise. This includes, but is not limited to, research on biomass-based fuels, materials, and processes; catalysis and green manufacturing of chemicals including commodity chemicals, specialty chemicals, and pharmaceuticals; electrochemistry for chemical production as well as energy storage and conversion; use of wastes as raw materials; alternative solvents (including ionic liquids) and solvent-free processes; nanoscale materials and their properties in the context of sustainability; and new methodologies for life-cycle assessment and other quantitative assessments of environmental impacts of products and processes. On the other hand, as we have noted in previous editorials,² we regard as outside of our journal's scope manuscripts that exclusively focus on the following topics: pollution abatement catalysis, pollutant treatment systems including adsorbents, and thermodynamic and/or physical property measurements and processing of materials from commercial sources. Exceptions include contributions in these areas that contain well-articulated, novel elements of green chemistry, green engineering, or sustainability. While manuscripts that we regard as out of our journal's scope may have significant scientific merit, our editorial policy is that they are more appropriate for other journals, including other ACS journals (<http://pubs.acs.org/action/showPublications>).

■ COMPARISON TO STATE OF THE ART, USING QUANTITATIVE SUSTAINABILITY METRICS

Even if a manuscript is clearly linked to green chemistry, green engineering, and/or the sustainability of chemical processes, it may be returned to the authors if the results of the work are not compared to the existing state of the art, using quantitative sustainability metrics. As we have described in previous editorials,³ ACS Sustainable Chemistry & Engineering authors can justify the contributions of their work to the sustainability of the chemical enterprise by qualitatively invoking the principles of green chemistry⁴ and green engineering⁵ or other principles of sustainability.⁶ This approach is encouraged and often acceptable. In many cases, however, such qualitative approaches should be complemented by rigorous, semi-quantitative, and quantitative sustainability assessments. A quantitative analysis of improved sustainability is needed when toxic solvents or reactants are used, when materials leading to other well-known environmental issues are used (e.g., microplastics contamination), when the proposed chemistry is not atom-economical, when the process is energy intensive, or when other basic principles of green chemistry and engineering are neglected. Quantitative sustainability metrics may include life-cycle analyses, toxicity assessments, or other indicators of sustainability. The use of quantitative sustainability assessments may not be appropriate for manuscripts where there is no clear state of the art incumbent process or product to compare to. If there is an existing state of the art, however, the editors will expect authors to perform comparisons using quantitative sustainability metrics in their submitted work. In earlier editorials,^{7,8} we have provided suggestions, helpful tools, and resources that can be used in quantitative sustainability assessments. Use of these approaches adds value to manuscripts.

■ CLEAR AND COMPELLING STATEMENT OF NOVELTY OR SIGNIFICANCE

Successful manuscripts should provide new insights in sustainable chemistry and engineering. The manuscripts should demonstrate novelty with respect to previously published work; further, findings should not be minor variations on a well-studied theme or entirely predictable based on previous results. For example, multiple adsorbents have been demonstrated to be effective for removing dye molecules from aqueous streams; a new manuscript reporting that an adsorbent can remove another dye is not likely to be sent for peer review, even if the adsorbent is derived from a locally abundant waste stream. Similarly, multiple materials have been demonstrated as effective precursors of biochar. A manuscript demonstrating that a new locally abundant material can be utilized as a biochar material is unlikely to be sent for

Received: December 13, 2018

Published: January 7, 2019



peer review unless the manuscript describes new and generalizable chemical principles. Similarly, manuscripts should report results that are not specific to a narrow set of experiments. For example, using an empirical optimization approach to identify the best conditions for conducting a chemical reaction or separation is not likely to be sent for peer review since the optimum conditions apply only within the specific conditions examined.

In making decisions on manuscripts prior to peer review, our editorial team will refer to these criteria in decision letters. As always, we welcome your suggestions and inquiries (E-mail: ACSSustainable@acs.org).

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Notes

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