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Editorial

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Why Wasn't My Manuscript Sent Out for Review?

When a manuscript arrives on the (virtual) desk of an *I&EC Research* editor, we ask ourselves, "Is this manuscript likely to be of interest to a broad applied chemistry/chemical engineering audience?" To that end, we seek to identify the research advance made by the manuscript, so that we can assess whether that contribution could potentially warrant publication in *I&EC Research*. If that assessment is positive, we send the manuscript for peer review. On the other hand, if that initial assessment is negative, we decline the manuscript after this editorial review process and try to do so quickly, so the authors can send the manuscript to a different journal without much loss of time. Our editors are active researchers in their fields and we have extensive experience with assessing manuscripts. Each year, we handle thousands of manuscripts and our editors have seen thousands (even tens of thousands for some) of peer reviews over the course of their tenure. We use that knowledge and experience when assessing new submissions. To do our jobs well as editors, we need to value our reviewers' time. We cannot responsibly send manuscripts to our reviewers, who generously assess manuscripts as part of their professional service, that we are confident would not be accepted for publication after peer review.

We sincerely sympathize with the disappointment that comes with having a manuscript declined after editorial review, as it happens to us as well. In an effort to reduce the frequency with which this happens to our authors, we aim to share in this Editorial some of the common reasons that manuscripts do not clear the initial hurdle of our editorial review. The objective in doing so is to help authors better understand our decision-making and to help authors improve the quality of the manuscripts submitted to *I&EC Research*, so that more can pass through editorial review and be sent for peer review.

NO CLEAR STATEMENT OF NOVELTY OR SIGNIFICANCE

Many manuscripts are declined after editorial review because they fail to explain what is new and why it is important. Every manuscript should summarize the current state of the art in the field of study, specifically identify the novel contribution in the manuscript, and make the case that the contribution is also important for the field to advance.

MINOR VARIATION ON A WELL-STUDIED THEME, CONCLUSIONS ARE ENTIRELY PREDICTABLE

Some manuscripts that we receive provide novel results, but the results are not likely to represent a meaningful advance in the field. For example, if a certain adsorbent has already been demonstrated to be effective for removing a large number of different dye molecules from an aqueous stream, a new manuscript reporting that the adsorbent can remove yet another very similar dye is not likely to be sent for peer review. Likewise, if a certain chemical treatment is known to be effective in degrading contaminants in wastewater, a new manuscript reporting that the chemical treatment degrades yet another compound similar to those already studied is not likely to be sent for peer review. When we receive manuscripts such as these, we decline them after editorial review.

FAILING TO COMPARE WITH STATE OF THE ART AND SHOW THAT THE NEW APPROACH IS BETTER

Some manuscripts that we receive compare the performance of different chemicals, materials, or treatments (e.g., corrosion inhibitors, catalysts, adsorbents) for a specific application. Similarly, other manuscripts in the process systems area compare the performance of design or control approaches for specific applications. Oftentimes, these manuscripts do not include a comparison with the current state of the art. The editor would be happy to send such manuscripts for peer review if the authors show that the compound, material, treatment, or approach they studied works better in some way (less costly, superior performance, more environmentally benign, etc.) than the current state of the art. This comparison with the current state of the art is essential so that readers can appreciate the research advance that has been made. Manuscripts that lack such a comparison are often declined after editorial review.

ABSENCE OF TRANSFERABLE INFORMATION

Some submitted manuscripts report the results from studies where the best conditions for conducting a specific operation (e.g., chemical reaction, separation) were obtained by using response surface methodology (or some other empirical optimization approach). If the main contribution of the manuscript is identifying the optimum conditions within the specific parameter space investigated, the manuscript would not likely be sent for peer review. There is little transferable information in such manuscripts because the optimum conditions apply only within the parameter space examined and only for the specific experimental system used. Likewise, if a manuscript simply reported conversions measured at different reaction times and temperatures from a chemical reaction study, it would not likely be sent for peer review. The results are not generalized and cannot readily be applied to another system. To warrant consideration for publication in *I&EC Research*, a manuscript should report fundamental properties and quantities that can be applied to other systems. That is, there must be transferable information. For example, manuscripts that report rate constants, mass-transfer coefficients, turnover frequencies, and so on are more likely to be sent for review than are manuscripts that report data that apply only to the specific experimental apparatus used and system investigated.

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OBSERVATIONS WITHOUT EXPLANATIONS, MECHANISMS, OR HYPOTHESES THAT CAN BE TESTED

We occasionally receive manuscripts that read more like technical reports than scientific research articles. That is, the manuscript might provide new experimental results and discuss the trends in the data, but not discuss the reasons for those trends. Of course, science grows incrementally and authors may not know the reasons for some interesting observations. However, even in these cases, the authors can provide hypotheses that can then be tested in follow-up work. For example, an understanding of a new chemical reaction requires a mechanism but it is trivial to write a mechanism that fits. The important contribution comes in supporting the mechanism with literature precedent for its various components. A common reviewer criticism of chemistry-related manuscripts that we receive is that they are "phenomenological" and this assessment is a factor considered in whether to send a manuscript for review. Manuscripts that present data without potential explanations, mechanisms, or hypotheses are likely to be declined after editorial review.

INADEQUATE ATTENTION TO ERROR ANALYSIS AND UNCERTAINTIES IN MEASURED AND CALCULATED RESULTS

Some manuscripts that we receive present conclusions without paying adequate attention to error analysis. For example, an author might claim that a new strategy for process intensification improves mass-transfer performance to some extent (for example, the use of ultrasonic horns increases the gas−liquid mass-transfer coefficient in rotating packed beds by 5%). For this conclusion to be valid, the authors must show that the uncertainty in the mass-transfer coefficient is small enough for the improvement to be statistically significant. It is important first to clearly demonstrate that there is an improvement in light of the associated errors and then convey the significance of that improvement, relative to the state of the art in the field.

INADEQUATE VALIDATION OF COMPUTATIONAL WORK AND ASSESSMENT OF THE ADJUSTABLE PARAMETERS

We receive many manuscripts describing computational studies (e.g., computational fluid dynamics) of different processes and equipment using commercial or open source codes. Manuscripts that present only simulation results without experimental validation or without any novel ideas or significant conclusions are likely to be declined after editorial review. Some of the manuscripts we receive attempt to validate computational models (e.g., a model of a chemical reactor with a complicated flow field) by comparing macroscopic outcomes (conversion and selectivity profiles) from both the experiment and the model. In these cases, it is important to validate submodels independently or fully discuss the sensitivity of the calculated macroscopic outcomes to the values of the adjustable parameters used in the computational model. Manuscripts without this additional analysis have limited transferrable information and are likely to be declined after editorial review.

SLOPPY WRITING, POOR ORGANIZATION OF THOUGHTS, OR POOR USE OF ENGLISH

When reviewers receive a manuscript that is poorly organized, shows poor use of English, has figures that are poorly drawn, or contains numerous misspelled words and typographical errors, they get the impression that the manuscript was not prepared with care or adequate attention to detail. They may naturally wonder whether there was proper care and attention to detail shown when conducting the research described in the manuscript at hand. Rather than letting the structure and writing of the manuscript potentially bias the reviewers, we will decline such a manuscript after editorial review.

FAILING TO CITE CRITICAL PRIOR WORK

We typically enter the manuscript title and some keywords into different web searches to discover how much prior work has been done on the topic discussed in the manuscript. These searches sometimes lead to published work that is directly related to the research in the manuscript and critical for properly understanding the contribution made by the manuscript. If this prior work is not discussed and/or cited in the manuscript, we will typically decline the manuscript after editorial review.

INSUFFICIENT DATA

Some manuscripts present novel ideas and results, but the results are too few and too preliminary to warrant publication as a regular article. In these instances, the manuscript might be rejected after editorial review, and the authors could consider resubmitting the work as a Research Note.

DUPLICATION OF PREVIOUSLY PUBLISHED TEXT

Before we accept a manuscript for publication, we run it through a computer check to determine whether portions of the text have been previously published. This software compares the new manuscript with previously published research articles and it identifies any large text strings that have been previously published. When we find a large amount of duplication of previously published material in a manuscript, and especially when complete sentences or paragraphs have been taken from previously published articles, we decline the manuscript and return it to the authors. Using again text that has already been published violates the ethics of scientific publishing and *I&EC Research*, like all ACS journals, will not publish such manuscripts.

We trust that "pulling back the curtain" in this Editorial and outlining some of the things we consider when assessing a manuscript in our editorial offices will help our authors prepare even stronger submissions for *I&EC Research*. Ultimately, the outcome will be a "win" for authors, for the journal, for our readers, and for our profession. Thank you to all of our authors for their manuscript submissions, and we look forward to continuing to publish the best work coming from your laboratories.

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Notes
Views expressed in this editorial are those of the authors and not necessarily the views of the ACS.

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