

Scientific Ethics

The *Journal of Applied Polymer Science* is the largest peer-reviewed publication in the field of polymers and, over time, we have seen our fair share of scientifically unethical behavior from authors of all sorts and latitudes. Perhaps because of the increasing pressure to publish that all scientists face and as a consequence of the burgeoning volume of papers that editors and referees screen, which can result in a cursory examination of figures and text, such cases are on the rise. At the same time, technology has been developed to provide instruments to help in the detection of at least some forms of unethical behavior.

The *Journal of Applied Polymer Science* delineates scientific ethics in line with the guidelines of the Committee on Publication Ethics: International Standards for Authors,¹ which you can find linked in our Author guidelines page.² In brief, this means that we will only consider manuscripts that:

- are devoid of any plagiarism with respect to ideas, data, words, graphic materials, or other forms of communication;
- are unpublished and original, contain data that are also unpublished and original, and are not being simultaneously considered for publication or in press elsewhere;
- do not contain fictitious results or intentional reference omissions; and
- are endorsed by all the coauthors featured on the submission.

These are all statements that submitting authors are required to confirm when submitting a manuscript using our online system.³ We feel that some clarifications might be in order and, therefore, will consider each point one by one.

We deem plagiarism as the inclusion in a paper of results previously published by other scientists, in the form of data, figures (no matter how

cropped or edited, if they are clearly representing identical data), videos, and so on. One of the few cases in which republication of previously published data are allowed is if they are crucial for comparison with a current dataset: in such cases, the earlier publication has to be acknowledged and permission to republish obtained from the original publisher is normally required. Importantly, one aspect that often seems to flow under the radar is the plagiarism of large sections of text in a paper—this is also unethical behavior. Moreover, we consider that doing so from an author's own paper is poor scientific practice and should be avoided. Of course, we realize that there are only a few ways to correctly describe a chemical synthesis procedure, but in those cases, just placing a reference in the new paper might be enough. The editors of the *Journal of Applied Polymer Science* scan every single submitted manuscript using antiplagiarism software⁴; therefore, large sections of text reproduced from a previous publication will always be detected and most likely result in rejection of the submission.

Sometimes authors submit articles that are very closely related to what they have already published, and the editor has to make a judgment on whether the newly submitted article is a worthy addition to the literature, is redundant, or is downright scientifically unethical. We will go over the first two cases in a future editorial; in the meantime, the interested reader might take a look at an editorial that appeared several years ago in the *Journal of Applied Physiology*,⁵ which neatly sums up some of the issues involved. Here, we will concentrate on the unethical aspects, which arise if the new article constitutes dual publication (identical or nearly identical text and/or data/figures and/or discussion/analysis/conclusions) or if some of the figures/data/text

have already been published (especially if this is not acknowledged in the new manuscript). Copyright laws are also at play here: authors wishing to reuse previously published material often have to explicitly request permission to do so from the publishers of the prior version, otherwise legal issues arise.

The issue of fictitious results is quite clear cut; it is imperative that researchers publish the results of their own experiments or calculations and refrain from fabricating data. This is likely the most difficult sort of unethical behavior to detect, as high profile cases such as that of Jan Hendrik Schön attest,⁶ and they require very vigilant referees and readers. At the *Journal of Applied Polymer Science*, we are fortunate to have both some attentive referees as well as a committed readership; over the years, several such cases have been discovered, either before or after publication. Software that can detect image manipulation can clearly help in this regard.

Omitting citations is another often-overlooked point: if a submitted article presents results that are closely related to a previous paper the same authors or others have already published, the authors should cite the paper. If the earlier work was authored by the same group of scientists or a subset of it, such omissions will rightly be considered intentional. If the new paper contains elements, such as large portions of text, from a previous paper (whether the authors' or others'), omitting the citation to that study will also be considered intentional.

All the aforementioned cases are routinely considered by the editors of the *Journal of Applied Polymer Science* whenever they screen a publication, before deciding whether or not it should be sent to external peer reviewers. This triage enables us to catch most of the problematic cases before they even reach our referees.

Discovering that an article contains fictitious, plagiarized, or otherwise scientifically unethical material before publication is much preferable, of course, but clearly this is not always possible, and we welcome communications from our readers on these matters. The editors and board members of the *Journal of Applied Polymer Science* promise swift but fair action on being advised of such issues.

In today's scientific environment, large research groups and collaborations are the norm, and this makes it all more important for every one of the coauthors to be aware of any submitted paper on which their name appears and to endorse its contents. The role of the principal investigator is crucial in this respect, as she/he is ultimately responsible for compliance to scientific ethics and her/his role should be that of "catcher" of students' shortcuts, of junior coworkers' carelessness, or of collaborators' outright malicious behavior. The authors themselves and their strong sense that science is advanced first of all by being truthful are the primary and often the best line of defense against scientifically unethical behavior.

At the *Journal of Applied Polymer Science*, we aim to educate and not to punish authors. While in some specific cases of blatant disregard for the aforementioned rules, scientists have been prohibited from submitting to our journal for a specific period of time, and in fewer instances, measures such as involving the author's institution have been adopted; we never take these steps lightly. We follow standard procedures in dealing with ethics cases that are delineated in Wiley's best practices documents.⁷ These procedures always include a thorough examination of the evidence as well as communication with the authors, victims, and third parties, by the editors, often with the involvement of the editorial board.

We hope that clarifying the rules of the game will result in fewer problematic cases so that editors and referees will in turn have more time to dedicate to legitimate, and in the end much more interesting, scientific arguments.

Stefano Tonzani,
Editor-in-Chief

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