# TIPS for Writing Better Papers

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Including hot tips for reviewers

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EDITORIAL

# To Put It Simply

Writing scientific papers is the one thing that unites scientists from every discipline, culture, and country. Whether you love it or hate it, there's no escaping writing up your research. Clarity, simplicity, and accuracy are three of the most important attributes of a well-written scientific paper, but when you're sitting in front of a lab book full of results and a blank computer screen, just getting started is often challenging enough.

Great science always speaks for itself and does not need to be "dressed up" in complicated words or an incomprehensible list of acronyms. Anyone from anywhere in the world might eventually read your paper. Therefore, however complex the names of chemicals, species, or analytical techniques might get, explaining the underlying concepts of your research in simple language is a definite advantage for you and for the community.
A great science communicator takes difficult ideas and expresses them in a simple way, which makes science more accessible and gives people a hunger to learn about the amazing discoveries that are made in basic research every day.

It's very easy to talk about good writing skills, but for many people they take many years to develop. My aim is to help you identify easy steps that you can take right away to improve your writing skills. From the time you type "Dear Editor" at the top of your cover letter, there are countless opportunities to simplify, clarify, and get people as excited about your work as you are. You'll find out how descriptive titles, concise abstracts, uncluttered graphics, and simple language can all play a vital part in opening up all the fantastic developments that happen in science to a wide audience, as well as making editors, referees, and readers sit up and take notice of your work. This way, the result is better for everyone. It's that simple.

Dr. Richard Threlfall, Wiley-VCH

Tips on how to perform a peer review. Whether you're a seasoned veteran or just starting out as a peer-reviewer, this section, written by Dr. Brian Johnson, answers your most common questions and gives you pointers on how to share your insight in a helpful and constructive way.

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# Cover Letters

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Often overlooked in submissions, your cover letter is your chance to talk directly to the editor and to highlight all the most important results of your research. It can either make a great first impression or leave the editor uninspired, so it is a fantastic opportunity to make the editor sit up and take notice of your paper.

It's a very bad idea to submit a cover letter that just says:

***Dear Editor,***
***We are submitting our paper for consideration in your journal. All authors have seen and approved this submission and it is not under consideration for publication anywhere else.***
***Sincerely***
***A. Author***

An even worse idea is not to submit a cover letter at all. This is the equivalent of walking into someone's office, dumping a document on their desk, and walking away without saying a word. You wouldn't do it in real life, so don't be tempted to do it when submitting your paper electronically.

Much like an introduction, a good cover letter explains to the editor the critical question your research addresses, how you have answered this question, and why it is of significance to the wider community.

Consider the basic examples below:

***Dear Editor,***
***Compound X has interesting biological and pharmaceutical activity. We made some improvements over a previous synthesis and believe it has wider applications in organic chemistry.***
***Sincerely***
***A. Author***

A letter like this poses more questions than it answers for the editor. What activity does it compound X have? What was the previous synthesis and why is this one better? Instead, a better start might be:

***Compound X is a potent anticancer agent. However, up until now, it could only be isolated in small amounts from the plant Interestingus weirdus. Our total synthesis gives compound X in 99 % yield by…***

or

***We have synthesised catalyst A for the industrially important hydrolysis of Y. This catalyst improves reaction yield by 35 % compared with catalysts B and C because…***

Technical details (where appropriate) will add to the editor's understanding of your paper, but be careful not to put in an overwhelming set of numbers or to exaggerate because this doesn't help your cause.

Lastly, suggest referees whether the journal requires you to or not. This shows you have a good knowledge of your field.

The best cover letters are concise and give a clear explanation of the advances and discoveries made in the course of the research. Remember, journals receive many papers per day and editors see hundreds of papers per year, so take every opportunity you can to get your work noticed.

# Titles

https://doi.org/10.1002/chemv.201200117

We're going to start right at the top with the title of your paper.

The title of a paper is important because it is one of the first things that an editor or reviewer sees when they look at your paper. Therefore, it is important to grab their attention right away and give them an idea of why your paper is a scientific breakthrough. Be specific, not too technical, and concise.

The other thing to consider is that internet search engines and scientific search tools often search by title, so if you want to get your paper read and cited, it is important to get some of the key aspects of the research into the title. A good tip is to think which search terms you would use to find your own paper through a web search.

For a basic example, consider a (fictional) paper entitled

***"Effect of Metal Catalyst on the Outcome of Reactions with Aryl Alcohols".***

What is the effect? Which metal? What reaction? What type of aryl alcohols? The reader gets nothing but questions out of this title.

Much better might be:

***"Ruthenium Trichloride Catalyses C-H Alkylation of 2,4-Disubstituted Aryl Alcohols".***

The reader immediately knows what the paper is about and will want to read more. Plus, someone who types in terms like "ruthenium", "C-H activation", or "2,4-disubstituted alcohols" into a search engine has a much higher chance of finding the second title, but won't get any matches with the first one.

# Abstracts

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Imagine you have twenty seconds to explain the project you have been working on for months or years to another scientist who is not familiar with your area of research. You would probably try and tell them the one or two main outcomes without going into excessive technical detail. This is a good way to think about writing your abstract.

The abstract is only short, but that doesn't mean that you have to cram as much detail into it as possible. What you want is to give the reader some brief background information with the first sentence, state the most important experimental results, then leave the reader with the overall conclusions that can be drawn from the paper in the last sentence. In this way it is similar to a news article. Have a look at some articles in a newspaper. Most often the first sentence contains the crucial information about the story and then the details follow after that. This is a good model for your abstract; after all, what you're writing is news for the scientific community.

Electronic search engines and indexing services will often only search abstracts when performing word-based searches, and the abstract is frequently the first, and in some cases the only thing that is displayed when your paper appears in searches. From this point of view, you should make sure that there are several keywords in the abstract as well as the title (see "Titles" for more about keywords) to give your paper the best chance of being found in a search.

A good abstract is concise, explains the main findings of the research, but does not overwhelm the reader with technicalities. An interested reader will read the whole paper, where they can find the technical details themselves. Good abstract writing is a key skill for scientists, as it is also necessary for conferences, grant proposals, and job interviews, so it's worth taking your time and thinking about how to create an effective abstract.

# Introductions

https://doi.org/10.1002/chemv.201200119

The reader needs to know the background to your research and, most importantly, why your research is important in this context. What critical question does your research address? Why should the reader be interested?

Many papers begin with generic statements like:

***"X structure is ubiquitous in natural products and it is also important in medicinal chemistry".***

This may be true, but does it grab the attention of the reader? Why is structure X important in medicinal chemistry? Which natural products can this structure be found in and why does that matter? What does structure X do that structure Y doesn't? Setting the scene well for your reader is vital so that the reader knows the importance of your research. However, try also to avoid making claims that are too bold, like "this is a potential cure for all cancers", unless it really is, then you really can shout about it!

A good thing to avoid is making your introduction into a minireview. There is a huge amount of literature out there, but as a scientist you should be able to pick out the things that are most relevant to your work and explain why. This shows the reader that you really understand your area of research and that you can get straight to the most important issues.

Many people start with a broad statement and then narrow the subject matter down gradually to their specific area of interest. This is not necessarily wrong, but why waste your time and effort discussing things that are not really that relevant? For example, if you are writing about C-H activation, avoid sentences like:

***"C-H activation has been heavily studied in the past decade.[1a–y]"***

Then include massively diverse examples of C-H activation in references 1a–y. Everyone knows that C-H activation has been intensively studied and there are thousands of examples of it. Better is to draw the attention of the reader to exactly the question you want to answer in your research. Consider instead:

***"Among many examples of C–H activation, such reactions at the C5 position of X compounds have not been extensively studied. This is because..."***

In this example, you begin to show your knowledge of the literature and your research straight away in one or two sentences, which makes a good first impression.

Don't forget that the first impressions of the editor and reviewers when they very first read your paper are important too, everyone is human after all, so if you can convey why your project is so exciting to them, this can only be a good thing.

## Graphics and Tables

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OK, so not strictly about "writing" but nonetheless, worth thinking about because graphics are the most eyecatching part of scientific papers.

Simplicity is the key with graphics. If you put too much information or data into one graphic, then the clarity of the message you are trying to get across will be lost because the reader won't necessarily know what the most important parts are. Try to avoid clutter and putting too much text in a graphic. A good graphic can get its message across to the reader without the need for lots of explanatory text, so if you find you are putting a lot of text in, you may need to change your graphic instead.

Obviously some graphics can't be completely text free. However, for things like reaction conditions in a scheme or a legend in a graph, consider putting this information in the footnotes instead. That way the image is clear and uncluttered.

Simple fonts and consistent font sizes are also helpful. If you use different font styles and sizes, this could lead the reader to think that you're trying to empahsise something that actually isn't important and could give them the wrong idea about your results. Bold and italics can be useful for highlighting important details, but use them sparingly. If all the text is in bold, italics, or even both, then nothing stands out.

Finally, be sure that the resolution of your graphics is high and that you read the notice to authors of the journal you are submitting to just in case the journal has any special requirements or you have an unusual file type. Getting your graphics right helps towards faster publication, which is what everyone wants.

## Results and Discussion

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So you've spent many, many months on your project, you've got some great results, and now it comes to getting them into your paper. You want to tell everybody about all the hours you've spent testing every solvent, catalyst, and additive you could think of and all the trouble you've had with the HPLC. However, if you do this, your reader is likely to get very bored very quickly. So the best advice is to keep your focus and make your results and discussion concise but informative. Focus on the really important bits, not the very small details, especially if you are writing a communication and not a full paper. To put this into a simple example, if you've tried a reaction in several different solvents, you don't need to discuss every single experimental result with every single solvent, like: "In ethyl acetate, the reaction yield was 59%, in diethyl ether it was 46%,…" and so on. Put all the data in a table so the reader can see all the results easily, then the discussion should be about things that are not obvious from the raw data, for example, why the reaction works better in polar versus nonpolar solvents.
Try and keep in mind that the results and discussion and the experimental sections are different. There is usually no need to discuss experimental procedures in the results and discussion section unless the practical aspects of the work have some direct effect on the outcome of the experiments. For example, if the order of reagent addition alters the yield or the reaction pathway, this should definitely be part of your discussion. If not, leave it until the experimental.
Use abbreviations sparingly and consistently throughout your paper. Define an abbreviation where it is first used and leave it at that - it is not necessary to re-define abbreviations in every new section. You don't need to define the simpler things, such as NMR, AFM, or HPLC, but make sure you do define abbreviations of chemical names, because the abbreviations used for certain chemicals in other parts of the world are not necessarily the same as the ones that you use.
Sometimes, the most interesting and discussible parts of research are the anomalies or the things that don't make sense. Don't ignore these outliers because referees will likely ask you to comment on your strange results. Discussion of strange results is often as valuable as focusing on the expected findings, as it can help in understanding the more subtle features of a reaction, a catalyst, or a material. And who knows, your one weird result might just be enough to open up a whole new area of research.

## Conclusions

There's an old saying when making presentations: "Tell them what you're going to tell them, tell them, then tell them what you've told them". Whether you like to use this format or not for your talks, it doesn't take a great leap of logic to see that the basic structure of a paper could also look a lot like this. "Tell them what you're going to tell them" would be the abstract and introduction, "tell them" is the results and discussion and experimental, then "tell them what you've told them" is the conclusion.
In a talk someone can't easily refer back to what's gone before, so it's not a bad idea to recap the main ideas at the end. But in a paper there's not much point in just repeating bits that can be easily found a few paragraphs above. Therefore, the conclusion section should be much more than just restating the results, and you should aim to bring together your initial ideas, the results that you've now got, and how existing knowledge now has to change because of these results.
A conclusion section doesn't have to be too long and six to eight sentences should probably suffice for most papers. A summary of the main results is a good place to start but it's not necessary to include much data unless you can pick out one or two key data points that really highlight what you've discovered. Next you should briefly discuss whether or not the results you obtained are what you expected, and if not, why not? Do your results give you any insight that may be applicable to the wider field of research? Do they pose questions about a current theory or do they further confirm existing ideas? Lastly, now you've got the results that you have, you should say something about what you're going to do next. A lot of papers end pretty weakly with a statement like: "The applications of this method are currently under investigation in our laboratory." While that may be true, it's much better and much more interesting to be specific. What exactly are you going to try to do next and what about your current results makes you think you'll be successful? What do you expect from future investigations and are there any hints in the current study that there may be some unexpected twists further down the road?
Remember, the conclusion may well be one of the last parts of your paper that a referee reads, so you should aim to finish on an inspiring note. Instead of just "telling them what you've told them", show them how you've changed the way scientists should think about this area of research, that you've already figured what's to follow, and that you can't wait to get going on the next challenges.

## Experimental

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Possibly the easiest section of the whole paper to write - write down what you did, how much you used, and how long you left it to stir, then hey presto! You have your experimental section. Easy though it may be to write, there are still things you can do to make your experimental section an easy read. Don't forget, this is the evidence for all of your ideas presented in the paper and there are people who will use or try to reproduce your methods. Therefore, clarity and good presentation really helps.

Two good tips are to avoid repetition and to be consistent in the way you present your data. Repeatedly stating reaction conditions, amounts used, or analytical techniques doesn't add very much to the paper and makes the important things harder to find. A summary of general procedures, analytical techniques, and other relevant details in a "general" section at the beginning of the experimental is a great tool for avoiding unnecessary repetition.

Consistency in data presentation makes the experimental section easier to use when it comes to peer review. Check the author guidelines and previous issues of the journal you are submitting to for how to format your data. Remember that most journals only require the analytical data for compounds that are new to be disclosed in the experimental section, but check the author guidelines first.

Reviewers will often highlight or question inconsistencies in experimental data as things that should be examined further, when in reality it is just a typo or something left over from a previous version of your paper. Therefore, presenting your data clearly and checking it thoroughly before submission is well worth it to avoid unnecessary rounds of revision and review.

## References

https://doi.org/10.1002/chemv.201200125

Like the experimental, the reference section is very easy to compile, but there are some small things you can do to make it user friendly.

Especially when referencing the introduction of your paper, a good tip is to only reference the most relevant papers or some good thorough reviews on your particular area of research. Perhaps you might not think about it, but this shows the editor and the reviewers that you have a good knowledge of your field and really understand what is important in this context.

As a basic example, a statement like "C-H activation has become increasingly important in recent years [1]", then giving 25 different examples of C-H activation in reference 1 is not very helpful. Unless it is really necessary, these broad statements do not add much to the understanding of the concept being discussed and are best avoided.

Good reference management software can help a lot with your reference section. A good reference management program will ensure consistency in your numbering of references, will let you apply different styles for submissions to different journals, and will automatically update the references throughout the paper when it is modified to help avoid confusion. Some of these packages are available as web-based apps and are well worth investing in.

Finally, make sure that your reference section is up-to-date. A reference section that does not have many recent publications in it tells an editor or reviewer two things. Firstly, this area of research is not very modern and secondly, this author does not have a good knowledge of the current literature. When you think about it this way, your references can have a bigger influence on the outcome of the review process than you might realise.

# What Happens Next? What Editors and Reviewers Look For in a Paper.

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So you have written your paper, re-written it, and finally sent it. Its fate now rests in the hands of the editor and reviewers. The things that editors and reviewers look for can be summarised in four points:

*1) Innovation – What does this manuscript offer that I can't find elsewhere?*
*2) Hypothesis – Is there a good reason for doing this work? What question does it answer?*
*3) Evidence – Does the data and the explanation support the conclusions?*
*4) Writing – Is the manuscript well written? Do I have to work hard to understand the main results?*

First of all, an editor/reviewer will read the title. This sounds like a basic thing, but titles make the first impression. Is it interesting and informative? Does it show that this paper makes an impact in the particular field of research? Does it engage them and get them reading the rest of the paper? A common criticism from referees is that the title of a paper doesn't match its contents, so watch out for this.

The next thing that will be considered is the overall concept of the manuscript. How does it fit with what is already known? What advances in knowledge does it offer? What is innovative about this work? Is it controversial or are the results unexpected? If you are discussing a new concept or something that is likely to be controversial, it is advisable to explain the context of your research very carefully. In this case, consider spending a bit more time on your introduction. This way you give the reviewer all of the background information and you might highlight something of importance which they hadn't thought of or weren't aware of themselves.

Once the editor or reviewer understands the concept of the manuscript, they will, of course, examine your results and the experimental evidence for your claims. Reviewers are not unreasonable with their expectations for experimental results, as long as you explain them well. As a basic example, if the yield of a reaction is 50 %, then you should explain what happens to the other 50 %. Even if it is as simple as a difficult work up and you show that you have taken reasonable steps to optimise the yield, this is fine. Your aim should be to avoid the reviewer asking questions like "I wonder why they didn't try X?" or "Why do they need to use 20 equivalents of that reagent?".

Editors and referees will check that your experimental data and supporting information is consistent with your claims, for example, with structure assignments. Missing characterization data is another common criticism from referees, so double check that you have included everything required. Also consult the journal's author guidelines for their requirements with respect to characterization data. Referees are good at finding even very small inconsistencies in analytical data, so don't ignore them if they are there. A reasonable discussion of anomalies in data, even if you have ambiguous data, is much better than ignoring it completely.

Finally, if you are submitting a paper in English, try to have it proofread by a native speaker. There are also professional manuscript editing services available that will do the same, but you will have to pay to use one of these. Checking the language is just as important as checking the scientific data because even if you have the most revolutionary data that the scientific world has ever seen, if the editor or referees can't understand it, they are unlikely to appreciate its significance.

Remember, you have the best knowledge of the research that you have done and this makes you the expert. Things that are obvious to you may not be obvious to someone else who has not spent so long working on them. Therefore, it is up to you to explain your research thoroughly and clearly so that the editor or reviewer knows how important it is. Explain as completely as you can and try to leave no questions unanswered.

ACES Asian Chemical Editorial Society — ChemistryViews — ChemPubSoc Europe

# Mind your Language!

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# A (Very) Brief Guide to Language Usage in Scientific Writing

I'm going to start with a citation which really underlines the point behind taking care of what you write: Oppenheimer, D. Appl. Cognit. Psychol. 2005, 20, 139–156.

To save you scuttling off to the library website, this study, aptly titled "Consequences of Erudite Vernacular Utilized Irrespective of Necessity: Problems with Using Long Words Needlessly", showed that the perceived intelligence of authors is inversely proportinal to the complexity of the language used in a piece of writing. Yes, that's right, use more complicated words and people may not think you are as clever as you say you are.

Perhaps this is a case of blinding with science, or maybe people think that gaps in knowledge are filled with clever words instead. Whatever the reason, explaining the most complicated of scientific principles in simple and understandable language is a valuable skill and all it really takes is a little bit of thought about the words you use to avoid repeating the mistakes of the past.

The scientific literature is awash with complicated words and sentence when simple ones would do just as well. Consider the following sentences from a hypothetical "conclusion":

***"Functionalized polythiophene compound 1 exhibits attractive electronic properties and shows fluorescence due to functionalized polythiophene 1 possessing a benzyl group at the C5 position. This synthetic methodology represents both a significant advance over previous reports of functionalized polythiophene compounds and opens a new avenue towards developing novel photoexcitable oligomers".***

Although this is not a real example, it is a fair approximation of the content of many papers that are published, even in the top science journals. There are at least 12 opportunities to simplify the wording if you think about the meanings and context of the words carefully. It is easy to make considerable improvements in a very short time. See if you can identify some improvements to the passage above.

## Let's take a look at the parts in brackets in order that they appear:

***Functionalized polythiophene (compound) 1 (exhibits) attractive electronic properties and (shows) fluorescence due to (functionalized polythiophene 1) (possessing) a benzyl group at the C5 position. This synthetic (methodology) (represents) (both) a (significant advance over previous reports) of (functionalized polythiophene compounds) and (opens a new avenue towards) developing (novel) photoexcitable oligomers.***

- compound – stating the obvious, can be omitted.
- exhibits – is this an art gallery or a chemical compound?
- shows (fluorescence) – to whom?
- functionalized polythiophene 1 – unnecessary repetition is common and unnecessary repetition takes away the focus from the subject through unnecessary repetition.
- possessing – avoid applying human traits to chemicals.
- methodology – what does an "ology" add to method that method doesn't already say?
- represents – only for things that are actually representative, everything else "is".
- both – usually unnecessary and does not add anything to the meaning of the sentence.
- significant advance over previous reports – what advance? Be specific.
- functionalized polythiophene compounds – unnecessary repetition again.
- opens a new avenue towards – sounds grand, but non-specific metaphors generally do not add anything to the understanding of the concept.

• novel – redundant; of course things that haven't been developed yet are going to be novel. Another note on this word is that everything that is reported in a scientific journal should be novel, so it is not necessary to explicitly use it in your title.

With these points in mind, can you come up with an "optimized" passage?

So, how did you do with writing a simpler version? Hopefully you came up with something like this:

***Compound 1 has attractive electronic properties and fluoresces because it has a benzyl group at the C5 position. Our synthetic method has three fewer steps than those reported previously and can potentially be used for further development of photoexcitable oligomers.***

The important point about our new passage is that the crucial technical information and its implications, electronic properties, fluorescence, the C5 benzyl group, and using this method to develop more photoexitable oligomers, has remained essentially the same. It is also specific; therefore, even if someone only reads your conclusion, they can get a good idea of the advantages of your method.

The thesaurus function is very convenient in the popular word processing packages for finding all sorts of alternative and more complicated words for whatever you want to say. However, as Oppenheimer showed in the study cited on page 12, complicated words may sound impressive to you, but they often have the opposite effect on your reader. An editor or reviewer may be turned off and may well miss the whole point of your paper if it is unnecessarily dressed up in difficult language. Therefore, if you are going to use a thesaurus, then use it to find simpler instead of more complicated words.

A secondary point here is that we know that there is a problem communicating science to the general public. Scientists are regarded as unintelligible because we routinely use complex language which makes science seem out of reach to the non-scientist. Getting into the habit of writing in simple language in your papers can only help towards solving this problem, and bringing a better understanding of science to the public is in everyone's interest.
As a final note, I'll give the last words on this subject to a man much wiser than I, who elegantly sums it all up: "Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius – and a lot of courage – to move in the opposite direction". Albert Einstein.

# After Submission and Handling Referee Comments – Paper Rejected

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There are some estimates that say one peer review would cost hundreds of dollars if referees were paid professional consultants. They are not. Reviewers volunteer to help improve the quality, scientific content, and readability of your paper, which makes the peer-review process equivalent to getting thousands of dollars' worth of valuable information from extremely experienced people for free. Therefore, it's up to you to make the most of it. Whatever the outcome of the peer-review process there is a chance to improve your paper afterwards, so don't ignore it.

First, we'll talk about rejection. It's not nice but it happens to everyone. You'll receive a list of comments from the referees. Don't just ignore these comments and submit the paper without changing it to another journal because one of two things is likely to happen.

1) The next journal sends your paper to different referees but it comes back with similar comments and the paper is rejected again.

2) The next journal coincidentally sends the paper to the same referees as the first journal and the referees see that their time was wasted the first time round because you took no notice of their comments. They will instantly recommend rejecting it again.

In both cases you just waste your own and everyone else's time and your paper still doesn't get published anyway. It is better to take the time to really think about the referees' comments and revise your paper before you resubmit it to a different journal.

Frequently, referees will give a short list of a few examples of things that need to be looked at or corrected. In this case, don't just correct these few examples, but consider the comments in the broadest sense and check through yourself to see what else you can improve. That way you have a much better chance of getting your paper accepted next time because it will simply be better science.

Having a paper rejected is an upsetting experience, the referees' comments are there to help you improve your paper so you get a better result next time. However, what happens if you think you've been treated unfairly during the peer-review process? What if you think the referee has missed a really important point in your paper? Perhaps you think that the referee has made the wrong interpretation of your data or neglected previous results that agree with yours.

You should think of the peer-review process more as a critical discussion of your paper and remember that referees are human too, which means they sometimes make errors. You are entitled to appeal a decision that is made on a paper, but you must have very good scientific reasons for it.

The best way to do this is to write to the journal editor and explain your opinion and the science behind it. Point out where you think the referee has the wrong idea or has missed something and why this affects the overall assessment of the paper. If necessary, you can include relevant citations or restate some of the data points. The editor will then consider all the evidence, possibly with the help of another referee or members of the journal's editorial board, and decide whether to accept or reject the paper.

What you should definitely not do is write a ranting letter telling the editor this is ridiculous and you can't believe the decision and you're heartbroken and the referees don't understand and this is such an important paper... and so on.

When you get a rejection letter from a journal take some time out to think, and then if you want to appeal, write a dignified letter that contains a strong scientific case for reconsidering your paper. Unless the science supports your claims, an editor will not look again at your paper just because you're upset.

If you've followed my other tips for writing great science papers, then hopefully this doesn't happen to you and we can carry on to the next part, which deals with the happier subject of paper accepted or revision requested.

# Revision and Acceptance

https://doi.org/10.1002/chemv.201300028

So, the journal has either accepted your paper or requested that you revise it for another round of peer review. In both cases, you should do exactly the same thing: revise your paper in accordance with the recommendations of the referees. Consider the referees' comments in their broadest sense and try not to just alter the few things that they might have specifically mentioned. Try to be as thorough as possible.

Especially in the case of a paper that is being revised for another round of peer review, if you believe that a suggestion made by a referee is unreasonable or is not scientifically accurate, then you should say so in your cover letter that you send with the revised paper. You are entitled to challenge the opinion of any referee but you must have solid scientific reasons for doing so. Editors and referees don't like laziness, so simply not bothering to address all of the comments is likely to get your revised paper rejected and, perhaps more importantly, it is likely to get you a bad reputation.

After making the revisions, you should then electronically highlight all the changes that you have made to the paper in a bright color and thoroughly describe all the changes in the accompanying cover letter. Believe it or not, the highlighting and the letter are incredibly important, especially when the journal requests that you revise your paper for a further round of review. Editors and referees are human too, so nobody wants to search through many pages of your paper to find the most important changes. Marking the changes and explaining them clearly in your letter shows you are genuinely interested in improving your work and not trying to do just the minimum to get it published.

Congratulations! At the end, when your paper is finally accepted you can then sit back and enjoy the fruits of your labour as your wonderfully written and beautifully illustrated paper takes a proud place in the scientific literature.

# Cover Art

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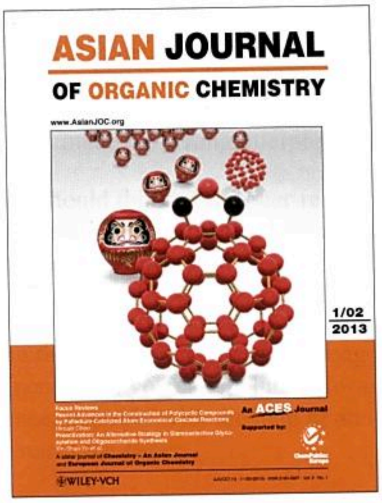
So the hard work is finally complete. Your paper is accepted and now it's time to inject a little fun by making a cover picture for your chosen journal.

When you think of creating a cover picture to send to a journal, perhaps the Ig-Nobel Prize doesn't immediately spring to mind. However, the motto of the Ig-Nobel Prize, "Research that makes people LAUGH and then THINK", is a good starting point from which to think about your cover art. Your illustration does not necessarily have to make people laugh, but what you do want is an image that makes a big first impression on the readers, and then makes them think about your research. Perhaps you might also want to include something from your culture or country. After all, journals are international and people are interested to find out about other places.

Give the reader a striking and colourful image to grab their attention and just enough scientific information to get them wanting to know more about your article. Try not to make any text too small and avoid using colours that are very similar, that is, make sure there is good contrast between all the parts of the image and the background, so nothing gets lost. The most effective cover pictures are simple but intriguing, and in some cases can even become part of the journal's publicity material, which gets your paper even more exposure; see Greta Heydenrych's comments below.

Of all the great covers that we've had in the *Asian Journal of Organic Chemistry*, the front cover of Issue 1, 2013, has been a great hit among our readers. The reasons for this are many, but to summarise, the image is not cluttered with numbers or data and the red and white colour scheme is simple but striking. The $C_{60}$ at the front gives a hint about the main theme of the paper, which is of course $C_{60}$ chemistry, but it doesn't give any exact details - you have to read the paper to get those. This cover also includes something from the culture of the authors, which makes it a little more mysterious and interesting.




As a guide to what makes a successful cover picture, I asked the editors from some of the *Asian Journal of Organic Chemistry's* sister journals to identify the covers from their journals that have made the biggest impact with their readers and what they think the reasons for this are.

ACES Asian Chemical Editorial Society

**Editorial Board Chairs:** Sung Ho Kang, Keiji Maruoka, Deqing Zhang

# 12 Tips for Referees

bit.ly/refereetips

Peer review is an intricate system, based on trust and professionalism, as colleagues try to evaluate an ever-increasing volume of papers on short timeframes. On the one hand, the process looks simple: manuscripts are sent out to external experts with a request for evaluation, upon which an editorial decision is then based. But anyone who has been involved in the process knows that peer review includes many intricacies and special cases. In this post, Brian Johnson, Managing Editor of The Chemical Record addresses some of the issues faced by reviewers, from the perspective of an editor's seat.

1. Considering the journal level: As a minimum, peer reviewers are asked to check the correctness of the work: whether the premise is well founded, whether the hypotheses are appropriately addressed, and whether the conclusions are supported by the data. However, many journals also request a more subjective assessment of the article's suitability for a journal, normally based on the level of the journal and on the target audience (e.g., niche readership versus broad and heterogeneous readership). As many chemistry journals receive so many manuscripts these days that they can only accept a small portion, editors often state directly in the review invitation that they can only accept the top xx% of manuscripts or that their rejection rate is currently xx%. These guidelines are especially helpful for a journal that you might not have worked with before. At a minimum, the work must be correctly done, but editors are also looking for your assessment of whether the work's importance justifies publication in the journal to which it was submitted.

2. Having to decline: As a reviewer, you should respond to every invitation to peer review. This is not just a matter of etiquette, but part of the ethical guidelines followed by many journals. If you must decline a peer-review invitation because of different subject expertise or lack of time, a simple reply saves everyone time and especially benefits the author. If an author's manuscript is sitting with reviewers who have not responded to the peer-review request, the author will not get a timely decision.

3. Improving the manuscript: Peer review not only helps the editor make a decision on acceptance or rejection, but serves the greater purpose of improving the overall quality of the manuscript. Even if a manuscript is rejected, it should be improved by the peer-review and decision process. Thus, when supplying a review, the most helpful comments are those that point out unclear assertions or holes in the article's argumentation and then offer constructive ways to better communicate the findings in the article.

4. "One-liners": Every peer reviewer should explain or support his/her judgments. However, some reports are submitted with only short comments such as "This is an inferior manuscript. Reject" or "Great work. Publish" with no further explanation. As a reviewer, consider how the author could use this comment to improve the manuscript. I like to ask potential reviewers how they would view the same comment if they had received it for one of their own papers, especially if the reviewer suggests rejection. Even a positive one-liner such as "Nice article, should be published as is" deserves some supporting statements (e.g., what is nice about the article?).

5. Science vs. language: Unfortunately, not every submitted manuscript is well-written. What should reviewers do if they cannot assess the scientific merit of an article because they can't understand the text? If the article is incomprehensible, there is not much a reviewer can do but suggest rejection on that basis. However, if you can understand the basic message, see if you can guide the authors on what improvements are needed. Are there certain aspects that could be communicated better, such as parts of the discussion? Should the authors consider resubmitting to the same journal after language improvement? Would you consider looking at the paper again?

6. Literature citations: It is generally not expected that a reviewer know the exact details of every literature reference listed in an article. However, every article should contain a well-balanced list of references that is helpful to the reader, is fair to competing authors, and gives due recognition to the initial discoveries and related work that led to the work under assessment. Every reviewer, even without looking up every reference, should be able to evaluate whether these qualities are met. One thing to look out for is self-citation. If authors focus too much on citing their own work, it may be a sign that they are not giving due credit to others' works, or that the reported work has a narrow readership.

7. To delegate or not to delegate: When you receive a peer-review request, it is because the editor feels that you have the right expertise and broad enough knowledge of an area to fairly assess a manuscript. If you are going to delegate to a colleague or member of your group, it is expected that you have carefully considered whether this person also has the breadth of experience to handle the evaluation fairly and competently. Journals have varying policies on whether permission is needed for delegating (it will often be stated in the review request), but you should notify the editor at a very minimum. Delegation without notifying the editor is against most ethical guidelines. A further option is to decline the peer-review request, but to nominate a colleague for the editor to invite directly. This option is especially good for giving up-and-coming researchers in your group some direct experience with the process.

8. Conflict of interest: What if the author is a good friend (or competitor)? Many reviewers will know the author if they research in a similar area. A reviewer can certainly give a fair assessment of an article that is written by a friend or competitor, but any significant conflict of interest should be revealed to the editor. If the conflict of interest causes a large positive or negative bias, then it is better to decline the review request. Every editor will appreciate an honest statement about a conflict of interest, even if he/she then has to look for a replacement reviewer.

9. Personal criticism: Peer review for most international chemistry journals is conducted on a single-blind basis, meaning that the reviewer can immediately see the name of the author/s. Reviewers are asked to make every effort to ensure that they only judge the article content and not the person who wrote it. The editor may filter out reports that contain significant personal criticism, and an author is generally more open to the suggestions when the report addresses the scientific content on a neutral basis.

10. Anonymity: Some peer reviewers have asked whether it is acceptable to tell an author they know well that they are currently reviewing their manuscript. Strictly speaking, sharing this information is breaking the confidentiality of the peer-review request. A larger problem is that it can entice the authors, whether consciously or subconsciously, to try to influence your assessment before you have submitted the report. However, for most journals, it is acceptable to reveal your identity voluntarily within the report itself so that the author will see it when receiving the decision. Otherwise, your identity is kept completely anonymous.

11. Plagiarism? If you suspect plagiarism, including self-plagiarism, during peer review but cannot find the source or specify exactly what is being plagiarized, simply notify the editor of your suspicion even if you are not 100% sure. Most editors have access to software that can check for plagiarism. Editors are not out to police every paper, but if such cases of plagiarism can be discovered during peer review, they can be properly addressed ahead of publication. After publication, the consequences are worse for both authors and readers because a retraction may have to be carried out.

12. Ask the editor: While reviewing a manuscript, you may lack information that you need for conducting a proper evaluation – missing CIF files for crystal structures, for instance or an NMR spectrum that is necessary to check the author's interpretation of a product. Remember the editor's role is to ensure a smooth peer-review process, so don't hesitate to ask the editor to help supply missing info. Your request is also helpful toward improving the manuscript because the authors can consider expanding their Supporting Information file.

The tips above give one editor's point of view, but are not meant to replace the more specific considerations of the ethical guidelines that are followed by each journal. Wiley also published the second edition of its Best Practice Guidelines on Publishing Ethics last year, which offer useful guidance on peer review. Major journals such as Angewandte Chemie International Edition, Chemistry-An Asian Journal, The Chemical Record, as well as all journals of ChemPubSoc Europe (CPSE) and the Asian Chemical Editorial Society (ACES) follow the guidelines published by the European Association of Chemical and Molecular Sciences (EuCheMS).