

# IEEE Transactions on Power Electronics Guidelines for Reviewers

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## 1. Before accepting review invitation, what should reviewers consider?

Before accepting the review invitation, reviewers must inform the Associate Editor if they hold a conflict of interests that may prejudice the review report. Examples of conflicts of interest may include relationships with academic advisors and/or advisees; anyone at your current institution; members of your family; or people with whom you have collaborated or co-authored during the last ten years—we ask you to decline this review. The above are just a few obvious COI examples; we rely on your best judgement to determine whether you have any potential conflicts of interest with any of the authors on a paper you are invited to review.

Reviewers should also read the paper's title and abstract carefully in the invitation email sent by the Associate Editor handling the paper to make sure they have the technical background and expertise to provide a fair review. If the reviewers think that the subject area of the paper is not close to their expertise or they do not have sufficient time to review the paper, they should reply to the appropriate link in the invitation email immediately so the Associate Editor can make alternative reviewer assignment to ensure the review process is handled in a timely manner.

## 2. If the manuscript is extended from a conference paper, how should it be assessed?

For new TPEL manuscript submissions, it is acceptable for IEEE PELS sponsored conference papers to be used as the basis for a more fully developed journal publication in TPEL. However, authors are required to cite their related prior work, either in the introduction or in a footnote of the new manuscript. The extended materials must be clearly explained in the body of the new manuscript. The manuscript cannot be identical to the prior conference paper(s). In general, a significant portion of the presented materials in the new manuscript must be different from the materials or not previously presented in their related prior work. For example, new manuscripts may include additional theoretical analysis, expanded explanations and discussions of the proposed work, novel algorithmic enhancements, extensive experimental validation, new results analysis, etc. Please note plagiarism is a serious scientific misconduct and is strictly prohibited in every IEEE society. For more information about IEEE paper plagiarism, please visit: <https://www.ieee.org/publications/rights/plagiarism/plagiarism.html#>

## 3. How to score a manuscript?

The main criteria for evaluation of a submission to *IEEE Transactions on Power Electronics* are

- i. Originality / Novelty of the work
- ii. Significance of results / conclusion
- iii. Inclusion of appropriate supporting results
- iv. Concise review of the literature

- v. Interest to the broader research community
- vi. Quality of Presentation
- vii. Appropriate language and correct use of English

There are five different possible outcomes of a review for the IEEE Transactions on Power Electronics:

**Accept with minor revisions or no change:** This is a recommendation to accept the article without any further changes to its content. Articles at this stage are published only with minor editorial changes and corrections for typos. All questions and comments from the previous review rounds have been answered. As a reviewer, it is generally suggested to provide a clear explanation of the major contributions of the work together with an "Accept" recommendation.

**Accept with mandatory changes:** This is a provisional recommendation for acceptance of the paper. Such a recommendation implies that there is clear novelty and contribution from the article, however, changes to the submitted article are required to address questions and comments. The recommended changes should not substantially change the content of the article; they may require some but not extensive new results or analysis. A typical revision of the article is expected to take between three to four weeks. The article will usually be sent to the original reviewers, but additional reviewers may be added at the AE's discretion.

**Revision:** This is neither an acceptance nor a rejection recommendation. The article has merit and contributes to the existing body of knowledge. However, it requires one or more of the following: further theoretical analysis, additional explanations, deeper literature review, new or additional experimental results. A typical revision of the article is expected to take up to six weeks. The article will be sent to the original reviewers.

**Reject with the possibility to resubmit:** Use this recommendation when the article shows potential to become sufficiently novel; after extensive revisions, new results, and further editing it will meet the requirements for acceptance to the journal. It is generally suggested to accompany such a recommendation with your evaluation for the contribution of the paper after its revisions and it should not be used as "a polite way to reject" the submission. Reviewers would be willing to review the resubmission again when resubmitted. Revisions under this recommendation will require major rewriting of the article and new analysis, experimental results and will require a substantial amount of time and effort from the authors; revisions may take 8 weeks–one year. Resubmitted papers will be sent to a combination of original and new reviewers.

**Do not accept:** This is a recommendation to reject the article. There are many reasons that may lead to the rejection of an article. These include: major errors, limited or incremental scientific contributions, lack of novelty, lack of appropriate results that support claims made in the article, poor editing, bad presentation, or articles that are outside of the scope of *IEEE Transactions on Power Electronics* (<https://www.ieee-pels.org/publications/ieee-transactions-on-power-electronics>).

#### 4. What should a review consist of?

A review should provide the Associate Editor, Co-EiC, and EiC with the appropriate level of information and detail to evaluate the contribution of the work and the current state-of-the-art. Without providing a prescriptive set of instructions for how a review should "look," it is generally recommended that the following parts be included:

1. A summary of the work that identifies the main contributions - This should be from your *own* reading of the article and not simply a repetition of the abstract.
2. Technical comments: These should include comments and recommendations regarding:
  - a. Literature review and context of the work (is it sufficient? Is it clear? Is key relevant literature cited?)
  - b. Theoretical analysis (Is there enough? Is it correct? Is it too long? Are all equations and derivations required?)
  - c. Assumptions made - are they justifiable and properly supported?
  - d. Supporting results - Are appropriate (experimental and/or simulation) results provided? Do they make sense? Are they broad enough or do they focus on a single operating condition? Do simulations and experiments match?
3. General comments and suggestions, for example:
  - a. Is the language understandable?
  - b. Is the writing appropriate?
  - c. Are the figures legible?
  - d. Are the figures appropriately described?
  - e. If Active Content or Graphic Abstracts are included, do they add value to the paper? Are they technically correct?
4. Minor comments such as typos, missing axis or labels, etc that are fairly easy to correct in a revision.
5. A comment on the overall merit of the article. Given the comments you have provided for the work will there be benefit in its publication and does it contribute to the existing body of knowledge.

It should be noted that it is not expected (although it is welcome) to provide a detailed list of all typos and mistakes in the article, however, make sure to point out those that may be crucial to the presentation of the work.

Some general suggestions:

1. Provide constructive feedback.
2. Identify ways that the research can be improved.
3. When asking for additional results, explain how the results fit and how they may add to the article.
4. Provide actionable items even when recommending rejection.
5. Be polite.

## 5. May I ask authors to cite specific papers, including ones where I am a co-author?

In cases where the manuscript is missing important references, it may be appropriate to request authors include citations to specific papers—including a paper that the reviewer has co-authored—but it must be accompanied by a clear reason for the citation. Examples include work that has recently been published, historic papers that are first to introduce a technique, review papers, or well-cited seminal papers. However, asking authors to cite your papers in order to increase your citation count is considered coercion and a violation of ethics. For example, asking authors cite three of your papers that are only loosely related to the manuscript is unacceptable. It is up to the Associate Editor to determine if the suggested citations are appropriate or not. As a rule of thumb, the reviewer may suggest no more than one co-authored paper and must provide clear validation for suggesting that specific paper.

## 6. How to review revised / resubmitted manuscripts and authors' responses?

For revised/resubmitted manuscripts you are assessing both the point-by-point response to the reviewers' comments and the quality of the updated manuscript. Even if you are one of the original reviewers, it is important to read the comments from all reviewers and the authors' responses to evaluate if all questions and concerns have been addressed. Check that the responses to the reviewers' comments resulted in improvements to the original manuscript. Read newly added/edited sections in detail. If you are not satisfied with the authors' responses or updated manuscript, you should explain your reasoning and be specific about what needs to be addressed. Please check the previous decision of the manuscript. Reviewers should make the recommendation they think is most appropriate but be aware that manuscripts accepted with mandatory changes have already been identified by the Associate Editor to have good potential for publication.

## 7. How to review revised / resubmitted manuscripts and authors' response if I am not one of the original reviewers?

If you are reviewing a revised/resubmitted manuscript as a new reviewer it is important to read the full manuscript and point-by-point response. The authors' response to reviewers is usually provided as a separate file and available in PDF generated by Manuscript Central; if it is not there, you may find it in the "Author's Response" tab. One aspect you are evaluating is if the questions and concerns brought up previously have been addressed; the second aspect is if there are additional concerns that have not yet been addressed. If you are not satisfied with the manuscript or authors' responses, you should explain your reasoning and be specific about what needs to be addressed. Also, please check the previous decision of the manuscript. Reviewers should make the recommendation they think is most appropriate but be aware that manuscripts accepted

with mandatory changes have already been identified by the Associate Editor to have good potential for publication. Particularly in these cases, please provide constructive criticism that clearly indicates what the authors need to improve in their manuscript.

## 8. What are the differences between reviewing revised vs original submissions?

When reviewing revised manuscripts, reviewers should go through point-by-point responses provided by the authors carefully and make sure all the responses clearly answer all the concerns or questions raised by reviewers. If reviewers are not satisfied with the authors' responses, they should provide reasonable comments to explain why the responses were not justified. Based on the revised manuscripts, reviewers can also provide additional comments (relatively minor at this stage) that help further strengthen the quality or presentation style of the manuscript. These comments can be related to correcting grammatical errors, requesting additional validation results, or improving the presentation structure of diagrams in the revised manuscripts. Other than reviewing new manuscripts at the initial submission stage, reviewers are not generally encouraged to request *new* major or critical comments or raise new concerns about the technical quality and contributions of the work for the revised manuscript.

## 9. What do we need to consider before suggesting authors include experimental results?

As an applied field of engineering, experimental validation of topologies, control methods, and applications are critical components of an article. It is generally expected authors include experimental results in their submissions. These results should validate and support the methods and the novelty of the work. Some things to consider regarding experimental results while reviewing for *IEEE Transactions on Power Electronics*:

1. Are the results appropriate? Do they support the claims made by the authors in the previous sections of the article?
2. Are the results correct?
3. Are the results general or do they only refer to a single condition and a single point of operation?
4. Do they match the simulation results (in case both simulation and experimental results are included)?
5. Are the results based on a 1:1 or a scaled-down prototype?
6. In case of a scaled-down prototype, is the design appropriate? Are the components selected and sized correctly? Does this affect the results?

Some additional points to consider when evaluating experimental results in an article:

1. Is a photo of the prototype included? Is it necessary? Photos of experiments are welcome, but make sure they add to the article and are not there to simply

show some arranged components. Consider suggesting any alternative "views" or even removing a photo if it does not add to the article.

2. Is it feasible to provide experimental results? Contributions to certain topics are hard to verify experimentally, however, authors and reviewers should consider what an acceptable level of validation is beyond software simulations.
3. Is it clear what is a simulation and what is an experiment? The reviewers should make sure results are clearly identified and there is no confusion between what has been built and what is emulated or part of a simulator.

## 10. May I ask authors to provide additional supplementary information in a separate document to explain some contents in the manuscript?

If reviewers think additional, extensive information provided by the authors can assist in clarifying their understanding of the authors' specific responses or contents of the manuscript, it is acceptable for reviewers to ask the authors to provide additional supplementary information in a separate document. Examples of supplementary information may include: additional mathematical derivation and analysis, methodology of the experimental settings, etc. Although currently there is no page limit for TPEL papers' final submission, it is understood extensive supplementary information requested by the reviewer is not fully necessary for the final manuscript submission.

## 11. What to write in "Comments to Editor"?

Clear and to-the-point comments in "Comments to Editor" will assist the editorial board to make a quick and fair decision on a manuscript. The words in "Comments to Editor" will only be reviewed by the editorial board. Reviewers should not directly copy the content in "Comments to Authors." It should be a short summary paragraph, (50 – 100 words) to point out critical reasons that justify reviewers' recommendations. For example, reviewers could explain why the proposed technology in a manuscript is a breakthrough on the topic or why its novelty, technical correctness, or quality of writing are not acceptable. It is appreciated if reviewers can provide reference or prior-arts to support their views in this section. Reviewers can also list comments in point form.

## 12. How to review "Multi-part" papers?

According to "Guidelines for Manuscript Submission to *IEEE Transactions on Power Electronics*", Multi-part papers (Part I, Part II, etc.) on the same subject is discouraged as a matter of policy. If reviewers review multi-part papers, the papers should be evaluated individually on their own merits, including **novelty, research motivation, technical contribution, proof of evidence, and writing quality**. Reviewers may be invited to review both parts of a multipart paper or only one. Reviewers may provide one of following recommendations:

1. Do not accept for both parts – if the papers’ core idea and written quality do not reach the TPEL’s standard is based on reviewers’ own judgement and professional experience.
2. Revision as one paper – both parts of the paper should be combined into one paper for additional review. Reviewers should request this when the overall concept of the papers is good but the technical contributions for the individual parts are weak because they have been divided.
3. Both papers should continue for additional review. For example:
  - a. Part I proposes a novel converter topology to solve an industrial issue. It also provides promising experimental results to prove its advancements, such as power quality and efficiency measurements.
  - b. Part II proposes a novel modulation scheme or control methodology for the new topology. The paper provides separate analyses, such as small signal models, and experimental results.
4. One paper should continue for additional review; the other is rejected.
 

One part (either Part I or II) of this paper should be submitted for another round of review. The other part does not have sufficient merit for publication and should be rejected.

If reviewers recommend a revision, authors should be encouraged to change the paper titles to emphasize the papers’ technical contributions instead of using Part I and Part II in the titles.

### 13. How to review “Tutorial,” “Overview,” “Review,” or “Survey” papers?

According to “*Guidelines for Manuscript Submission to IEEE Transactions on Power Electronics*,” TPEL considers papers of a historical or tutorial nature within the scope of the journal. Papers with contributions in “Review,” “Overview,” “Survey,” “Tutorial,” and other formats to present state-of-the-art technologies should be evaluated on the same merits as technical papers: novelty, research motivation, technical contribution, proof of evidence, and writing quality. Due to the nature of these types of papers, the following should be specially considered before making a recommendation,

1. Essential topic – The topic of a survey paper should be timely and considered emerging in terms of industrial applications and academic interests. The topic should not be easily found in published journal papers or textbooks in the last 5 years.
2. Comprehensive review – A comprehensive review should be done with up-to-date, wide, and critical literature on the topic in the survey paper. The paper should not only include its authors’ papers.
3. Technical contribution – An acceptable survey paper should include technical contributions and authors’ own opinions. A simple collection of literature is not considered to have technical contribution to the field. The authors’ contributions can be a new method of classification on a topic or an experimental comparative study to identify technical advantages and disadvantages of each literature with recommendations.

4. Readability – As an academic paper, a survey paper should be to-the-point and its length should be reasonably short. The paper should clearly present the message and motivation of the research in the paper and provide new insights to readers that help new researchers easily understand the research topic.

#### 14. FAQs or “Dos or Do Nots”

- Question: The review deadline is approaching but I have a critical task crop up, what should I do?
  - Do: Send an email to the Associate Editor to ask for an extension or to unassign you as a reviewer if the paper has enough returned reviews.
  - Do Not: Ignore the reminders or submit a recommendation without comments.
  
- Question: I accepted the invitation, but I realized the paper is outside my area of expertise, what should I do?
  - Do: Let the Associate Editor know right away. If they would still like your review, review only the parts in the paper you feel comfortable providing professional comments.
  - Do Not: ignore the review or review reminders if you do not plan to complete a review. Please also do not submit review comments for portions of the paper outside of your area of expertise.
  
- Question: One of the authors is my former colleague at the same (or a different) organization, what should I do?
  - Do: Decline the invitation or send an email to the AE to declare the relationship.
  - Do Not: Accept the invitation and proceed to provide comments for the paper.
  
- Question: The format of the paper is not correct, e.g. using single-column instead of two-column, what should I do?
  - Do: Review as usual but remind the Authors to change the format in the next submission.
  - Do Not: Recommend “Reject” because of the formatting problems.
  
- Question: I discovered the paper used content of a published paper, what should I do?

- Do: Prepare a separate document showing the similarities—e.g. diagrams, equations, paragraphs—side-by-side. The document should be sent to the Associate Editor as an attachment to your review with a note in your comments to the Editor to let the Associate Editor know what the attachment contains. This attachment should be for “Editor Only.” Reviewers also can ask Authors to differentiate between those papers in “Comments to Authors.”
- Question: How can I share detailed comments with authors or editors?
  - Do: Manuscript Central allows reviewers to upload separate documents to their reviews. Please note, however, these documents are *not* automatically forwarded to the authors by Manuscript Central. If you attach a file to your review please include a comment in the “Comments to Editor” to let the editors know.