

Scholarly Journal Article Content Guidelines

Introductions should:

- Indicate the field of the work
- Say why this field is important
- Show what has already been done with proper citations
- **Indicate a gap**, raise a research question, or challenge prior work in this territory
- Explain the purpose
- Announce the present research, indicating what is novel and why it is significant

Shouldn't:

- Repeat the abstract
- Provide unnecessary background information
- Exaggerate the importance of the work
- Claim novelty without a proper literature search

Methods should:

- Describe how the results were generated with sufficient detail so that an independent researcher in the same field could reproduce them sufficiently to validate the conclusions
- Allow the reader to assess whether conclusions are supported by the results presented
- Allow the reader to assess whether conclusions may be generalized beyond these results
- Be justified clearly
- Justify data analysis and statistical approaches, with assumptions and biases considered

Shouldn't:

- Include results in the Methods section
- Include extraneous details that are unnecessary to enable reproducibility or judge validity
- Provide a chronological history of what happened
- Refer to commercial products unnecessarily
- Refer to proprietary products or processes unavailable to the reader

Results and Discussion should, if combined:

- Present the results of the paper, in logical order, using tables and graphs as necessary
- Explain how the results answer the research questions posed in the Introduction
- Summarize the results
- Discuss whether results are expected or unexpected
- Compare these results to previous work
- Interpret and explain the results, often by comparison to a theory or model

Scholarly Journal Article Content Guidelines

- Hypothesize about their generality
- Discuss any problems or shortcomings encountered during the course of the work
- Discuss possible alternate explanations for the results

Shouldn't:

- Present results that are never discussed
- Present discussion that doesn't relate to any of the results
- Presenting results and discussion in chronological order rather than logical order
- Ignore results that don't support the conclusions
- Draw conclusions from results without logical arguments to back them up

Results alone should:

- Contain results only
- Contain only meaningful results
- Say what happened, not what it means
- Refer to the figures and tables

Discussion alone should:

- Answer the research question.
- Say what the results mean, not what happened
- Avoid referencing figures and tables
- Connect your work to future or past work
- Share limitations & strengths

Conclusions, if separate from Discussion, should:

- Summarize the Results and Discussion briefly
- Emphasize the implications of the findings
- Explain how the work is significant and provide the key message(s)
- Provide general claims that can be supported by the evidence.
- Provide a future perspective on the work
- Address all the research questions in the Introduction

Shouldn't:

- Repeat the abstract
- Repeat background information from the Introduction
- Introduce new evidence or new arguments not found in the Results and Discussion
- Repeat the arguments made in the Results and Discussion

Scholarly Journal Article Content Guidelines

Acronyms

- Spell out the acronym the first time in the Abstract AND the body of the manuscript
- Spell out acronyms in the Title unless a) the subject is almost exclusively known by its acronym or is widely known and used in that form, and b) the acronym does not commonly have more than one expansion

Citations & References

- Include citations that give the reader enough background and related material to understand the work
- Include citations that show alternate ideas, data, or conclusions to compare and contrast with this work, if they exist. Don't exclude contrary evidence
- Include citations that acknowledge and give credit to sources relied upon for this work
- Ensure citations reference the latest work on this topic
- Trust the author to verify the accuracy of the references

Shouldn't:

- Include citations that are not needed for support
- Include biased references added or omitted for any reason
- Include excessive citations to one's own work

Figures and Tables should:

- Document the data and their context carefully and clearly.
- Allow for comparisons and inferences of cause and effect, avoiding spurious readings.
- Include captions and legends that make them independent of the text, if possible
- Include captions that do three things: describe everything in the graph, draw attention to its important features, and describe the main conclusions to be drawn from it
- Receive clear acknowledgement in the text, with first references cited in numerical order
- Include all four parts of the data in the figure: a description of what it is, a number, a unit, and an uncertainty estimate
- Include error bars and explain clearly what they represent. If any data points have been removed, explain
- Use color since it can enhance the graphic for general online reading, but ensure that no information is lost when printed in black and white
- Use tables to show specific information or exact values and graphs to show trends and comparisons
- Use a table when the number of data points is small

Scholarly Journal Article Content Guidelines

- Use log-scales to reveal trends in the data, not hide them. Log-scales emphasize relative changes, while linear scales are best at showing absolute changes
- Choose plot scales (x- and y-axis start and stop values, for example) to avoid white space: try to use at least 80% of each scale to display data
- Use titles in the figure captions, not on the graph

Shouldn't:

- Use inconsistent formatting of figures
- Use commercial displays in the guise of diagrams or figures.

Abstract should:

- Target the audience of the author's targeted journal: don't assume too much or too little background with the topic
- Ensure the information in the Abstract is also in the body of the paper
- Ensure that the important information of the paper is found in the Abstract
- Summarize the manuscript in 250 words or fewer, with 1-2 sentences on these topics:
 - Background: What issues led to this work? What makes this work interesting or important?
 - Aim: What were the goals of this work? What **gap** is being filled?
 - Approach: What experimental method, simulation approach, theoretical approach, or combinations of these was actually done?
 - Results: What were the main results of the study, including numbers, if appropriate?
 - Conclusions: What were the main conclusions? Why are the results important? Where will they lead?

Shouldn't:

- Use the first paragraph of the introduction as an abstract
- Include citations in the abstract
- Use acronyms (but if used, spell them out)
- Refer to figures or tables from the body of the paper
- Use "I," but you may use "we"
- Use words like "new" or "novel, or phrases like "in this paper," or "will be discussed"

Title should:

- Reflect the aim and approach of the work
- Provide a full, concise, and specific indication of the work reported
- Give information without results or conclusions.
- Provide clear direction for international audiences and search engines

Scholarly Journal Article Content Guidelines

Shouldn't:

- Use jargon, acronyms, or trademarked terms

Reference

Chris Mack, *Journal of Micro/Nanolithography, MEMS, and MOEMS*14(2), 020101 (2015). <http://dx.doi.org/10.1117/1.JMM.14.2.020101>.