Advanced Devices & Instrumentation LaTeX Template

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Abstract

The abstract should be a single paragraph written in plain language that a general reader can understand. Do not include citations, figures, tables, or undefined abbreviations in the abstract. Any abbreviations that appear in the title should be defined in the abstract. The length should be 200 words and not exceed 250 words, to include:

- An opening sentence that states the question/problem addressed by the research AND
- Enough background content to give context to the study AND
- A brief statement of primary results AND
- A short concluding sentence.

1 Introduction

Your manuscript should contain all of the numbered sections specified in this template: Introduction, Results, Discussion, Materials and Methods.

The manuscript should start with a brief introduction that lays out the problem addressed by the research and describes the paper's importance. The scientific question being investigated should be described in detail. The introduction should provide sufficient background information to make the article understandable to readers in other disciplines and provide enough context to ensure that the implications of the experimental findings are clear.

Citations

Citations of references in the text should be identified using numbers in square brackets e.g., "as discussed by Cui [1]" or "as discussed elsewhere [1–5]." All references should be cited within the text and uncited references will be removed.

As an example, this template includes a "sample.bib" file containing the references in BibTeX.

Equations

Equations should be provided in a text format, rather than as an image. Equations should be numbered consecutively, in round brackets, on the right-hand side of the page by using the "\begin{equation}" command. They should be referred to as Equation 1, etc. in the main text.

For example, see Equation 1 and Equation 2 below.

$$a^2 + b^2 = c^2 \tag{1}$$

$$\begin{aligned} A &= \frac{\pi r^2}{2} \\ &= \frac{1}{2}\pi r^2 \end{aligned} \tag{2}$$

Figures

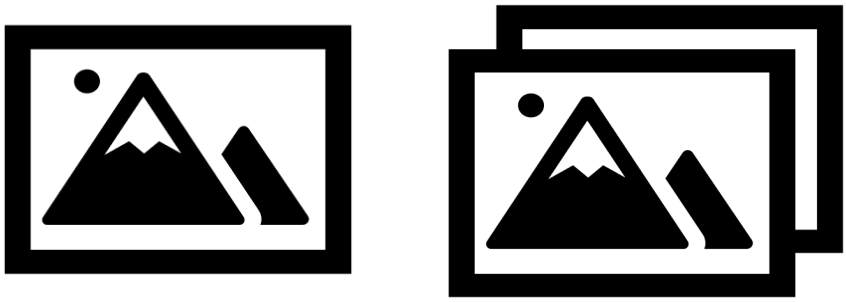
Figures should be called out within the text and numbered in the order of their citation in the text. Every figure must have a descriptive title beginning with "Figure [Number] ..." All figure titles should be either a phrase or a sentence; do not mix the two styles. See Figure 1 for example.

Figure 1: This is an example figure.

Figures should be displayed on a white background. When preparing figures, consider that they can occupy either a single column (half page width) or two columns (full page width), and should be sized accordingly.

If a figure consists of multiple panels, they should be ordered logically and labelled with lower case roman letters (i.e., a, b, c, etc.). All labels should be explained in the legend. See Figure 2 for example.

Upon acceptance, authors will be asked to provide the figures as separate electronic files. At that stage, figures should be supplied in either vector art formats (PS, EPS, FIG, AI, Visio, WMF, EMF, Word, Excel, PowerPoint, OPJ, CDR, or PDF) or bitmap formats (Photoshop, TIFF, GIF, JPEG, PNG, BMP, etc.). Bitmap (BMP) images should be of at least 300 dpi resolution, unless due to the limited resolution of a scientific instrument. If a bitmap image has labels, the image and labels should be embedded in separate layers.



(a) (b)

Figure 2: This is an example of a figure consisting of multiple panels. (a) This is the first panel. (b) This is the second panel.

Tables

Tables should supplement, not duplicate, the text. They should be called out consecutively within the text and numbered in the order of their citation in the text.

Every table must have a descriptive title beginning with "Table [Number] . . . " as noted in Table 1. If numerical measurements are given, the units should be included in the column heading. Every vertical column should have a heading, followed by a unit of measure (if any) in parentheses. Units should not change within a column. Vertical rules should not be used.

Centered headings of the body of the table can be used to break the entries into groups. Do not use footnotes in column heads; include any such details in sentence form in the table legend. Footnotes should contain information relevant to specific cells of the table; use the following symbols in order, as needed: $*, \dagger, \ddagger, \S, \|, \P, \#, **, \dagger\dagger$, etc.

Table 1: This is an example table.

Column 1	Column 2	Column 3
Cell 1	Cell 2	Cell 3
Cell 4	Cell 5	Cell 6

2 Materials and Methods

The materials and methods section should provide sufficient information to allow replication of the results. This section should be broken up by subheadings. Under exceptional circumstances, when a particularly lengthy description is required, a portion of the materials and methods can be included in the Supplementary Materials.

2.1 Experimental Design

Begin with a section titled Experimental Design describing the objectives and design of the study as well as prespecified components.

2.2 Statistical Analysis

If applicable, include a section titled Statistical Analysis that fully describes the statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify the results. The values for N, P, and the specific statistical test performed for each experiment should be included in the appropriate figure legend or main text.

For investigations on humans, a statement must be including indicating that informed consent was obtained after the nature and possible consequences of the study was explained.

For authors using experimental animals, a statement must be included indicating that the animals' care was in accordance with institutional guidelines.

3 Results

The results should describe the experiments performed and the findings observed. The results section should be divided into subsections to delineate different experimental themes.

- All data should be presented in the Results. No data should be presented for the first time in the Discussion. Data (such as from Western blots) should be appropriately quantified.
- Subheadings must be either all complete sentences or all phrases. They should be brief, ideally less than 10 words. Subheadings should not end in a period. Your paper may have as many subheadings as are necessary.
- Figures and tables must be called out in numerical order. For example, the first mention of any panel of Fig. 3 cannot precede the first mention of all panels of Fig. 2. The supplementary figures (for example, fig. S1) and tables (table S1) must also be called out in numerical order.

4 Discussion

Include a Discussion that summarizes (but does not merely repeat) your conclusions and elaborates on their implications. There should be a paragraph outlining the limitations of your results and

interpretation, as well as a discussion of the steps that need to be taken for the findings to be applied. Please avoid claims of priority.

Acknowledgments

Anyone who made a contribution to the research or manuscript, but who is not a listed author, should be acknowledged (with their permission). Types of acknowledgements include:

General

Thank others for any contributions, whether it be direct technical help or indirect assistance

Author Contributions

Describe contributions of each author to the paper, using the first initial and full last name.

Examples:
"S. Zhang conceived the idea and designed the experiments."
"E. F. Mustermann and J. F. Smith conducted the experiments."
"All authors contributed equally to the writing of the manuscript."

Funding

Name financially supporting bodies (written out in full), followed by the funding awardee and associated grant numbers (if applicable) in square brackets.

Example:
"This work was supported by the Engineering and Physical Sciences Research Council [grant numbers xxxx, yyyy]; the National Science Foundation [grant number zzzz]; and a Leverhulme Trust Research Project Grant."

If the research did not receive specific funding, but was performed as part of the employment of the authors, please name this employer. If the funder was involved in the manuscript writing, editing, approval, or decision to publish, please declare this.

Conflicts of Interest

Conflicts of interest (COIs, also known as "competing interests") occur when issues outside research could be reasonably perceived to affect the neutrality or objectivity of the work or its assessment.

Authors must declare all potential interests – whether or not they actually had an influence – in a 'Conflicts of Interest' section, which should explain why the interest may be a conflict. Authors must declare current or recent funding (including for Article Processing Charges) and other payments, goods or services that might influence the work. All funding, whether a conflict or not, must be declared in a "Funding Statement." The involvement of anyone other than the authors who 1) has

an interest in the outcome of the work; 2) is affiliated to an organization with such an interest; or 3) was employed or paid by a funder, in the commissioning, conception, planning, design, conduct, or analysis of the work, the preparation or editing of the manuscript, or the decision to publish must be declared.

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Data Availability

A data availability statement is compulsory for all research articles. This statement describes whether and how others can access the data supporting the findings of the paper, including 1) what the nature of the data is, 2) where the data can be accessed, and 3) any restrictions on data access and why.

If data are in an archive, include the accession number or a placeholder for it. Also include any materials that must be obtained through a Material Transfer Agreements (MTA).

Supplementary Materials

Describe any supplementary materials submitted with the manuscript (e.g., audio files, video clips or datasets).

Please group supplementary materials in the following order: materials and methods, figures, tables, and other files (such as movies, data, interactive images, or database files).

Example: Fig. S1. Title of the first supplementary figure.

Fig. S2. Title of the second supplementary figure.

Table S1. Title of the first supplementary table.

Data file S1. Title of the first supplementary data file.

Movie S1. Title of the first supplementary movie.

Be sure to submit all supplementary materials with the manuscript and remember to reference the supplementary materials at appropriate points within the manuscript. We recommend citing specific items, rather than referring to the supplementary materials in general, for example: "See Figures S1-S10 in the Supplementary Material for comprehensive image analysis."

A link to access the supplementary materials will be provided in the published article.

Supplementary Materials may include additional author notes—for example, a list of group authors.

Guidelines for References

Authors are responsible for ensuring that the information in each reference is complete and accurate. All data must be cited and references to "data not shown" or citations to unpublished results are

permitted.

All references should be cited within the text and uncited references will be removed.

There is only one reference list for all sources cited in the main text, figure and table legends, and Supplementary Materials. Do not include a second reference list in the Supplementary Materials section. References cited only in the Supplementary Materials section are not counted toward length guidelines.

Please do not include any extraneous language such as explanatory notes as part of a reference to a given source. The journal prefers that manuscripts do not include end notes; if information is important enough to include, please put into main text. If you need to include notes, please explain why they are needed in your cover letter to the editor.

DOIs, if available, should be included for each reference.

References

[1] T. Cui, "Research: The first Science Partner Journal," *Research*, vol. 2018, p. 1, 2018. DOI: 10.1155/2018/1340806.

[2] S. Ninomiya, F. Baret, and Z.-M. Cheng, "Plant Phenomics: Emerging transdisciplinary science," *Plant Phenomics*, vol. 2019, pp. 1–3, 2019. DOI: 10.1155/2019/2765120.

[3] X. Li, G. Zhang, and Y. Tang, "BME Frontiers: A platform for engineering the future of biomedicine," *BME Frontiers*, vol. 2020, p. 1, 2020. DOI: 10.34133/2020/2095460.

[4] W. Wang and D. Chu, "Advanced Devices & Instrumentation: Integrated for functionality to change the world," *Advanced Devices & Instrumentation*, vol. 2020, pp. 1–2, 2020. DOI: 10.34133/2020/4071439.

[5] X. Yang, L. S. Qi, A. Jaramillo, and Z.-M. Cheng, "BioDesign Research to advance the principles and applications of biosystems design," *BioDesign Research*, vol. 2019, pp. 1–4, 2019. DOI: 10.34133/2019/9680853.