

Title

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Abstract: This should be informative and suitable for direct inclusion in abstracting services as a self-contained article. It should not exceed 200 words. It should summarise the general scope and also state the main results obtained, methods used, the value of the work and the conclusions drawn. No figure numbers, table numbers, references or displayed mathematical expressions should be included. The abstract should be included in both the Manuscript Central submission step (Step 1) and the submitted paper.

1 Introduction

This document is a template, an electronic copy of which can be downloaded from the Research Journals Author Guide page on the IET's Digital Library. For questions on paper guidelines, please contact the relevant journal inbox as indicated on each journal's website.

Before submitting your final paper, check that the format conforms to this template and the Author Guide [1]. Specifically, check to make sure that the correct referencing style has been used and the citations are in numerical order throughout the text. If your paper does not meet all of the requirements, your paper will be unsubmitted and you will be asked to correct it.

2 Language, spelling and grammar

All papers must be written in UK English. If English is not your first language, you should ask an English-speaking colleague to proof-read your paper. Papers that fail to meet basic standards of literacy are likely to be unsubmitted by the Editorial Office.

3 Length

Original research papers submitted to the IET Research Journals should conform to the IET Research Journals Length Policy [2]. The length guidelines include the abstract, references and appendices but do not include figure captions or table content.

4 Author names and affiliations

Names and affiliations should immediately follow the title. To avoid confusion, the family name must be written as the last part of each author name and the first name should be spelt out rather than abbreviated (e.g. John A.K. Smith). Author details must not show any professional title (e.g. Managing Director), any academic title (e.g. Dr.) or any membership of any professional organisation.

For multiple-authored articles, list the full names of all the authors, using identifiers to link an author with an affiliation where necessary (eg. John AK Smith¹, Edward Jones²).

The full affiliations of all authors should then be listed. Affiliations should include: the department name; the name of the university or company; the name of the city; and the name of the country (e.g. ¹Department of Electrical Engineering, University of Sydney, Sydney, Australia).

If an author's present address is different from the address at which the work was carried out, this should be given as a secondary affiliation (see affiliation⁴).

Only the email address of the corresponding author is required and should be indicated with an Envelope logo ✉.

All co-authors must be listed on ScholarOne Manuscript Central as part of the submission process. There is also the opportunity to include ORCID IDs for all authors in step 3 of the submission steps [3]. If you do not know a co-author's ORCID ID there is a look-up option included in Manuscript Central.

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An easy way to comply with the requirements stated in the Author Guide [1] is to use this document as a template and simply type your text into it. PDF files are also accepted, so long as they follow the same style. Authors should not copy the format of the published journal; all accepted papers will be edited into the IET Research Journals house-style during the production process.

5.1 Page Layout

Our papers are double column format; one column width is 8.6 cm, with double spacing to ensure that reviewers can easily read and mark up the paper if required. All paragraphs must be justified, i.e. both left-justified and right-justified.

5.2 Text Font of Entire Document

It is recommended that standardised fonts such as Times New Roman and Arial are used with a font size no smaller than 10pt.

5.3 Section Headings

All section heading should be numbered and no more than 3 levels of headings should be used.

5.3.1 First Level Headings: The first level section headings should be in bold font (e.g. "**1. Introduction**"), with the paragraph starting on a new line.

5.3.2 Second Level Headings: The second level section headings should be in italic font (i.e. "*2.3 Section Headings*"). The paragraph should start on a new line.

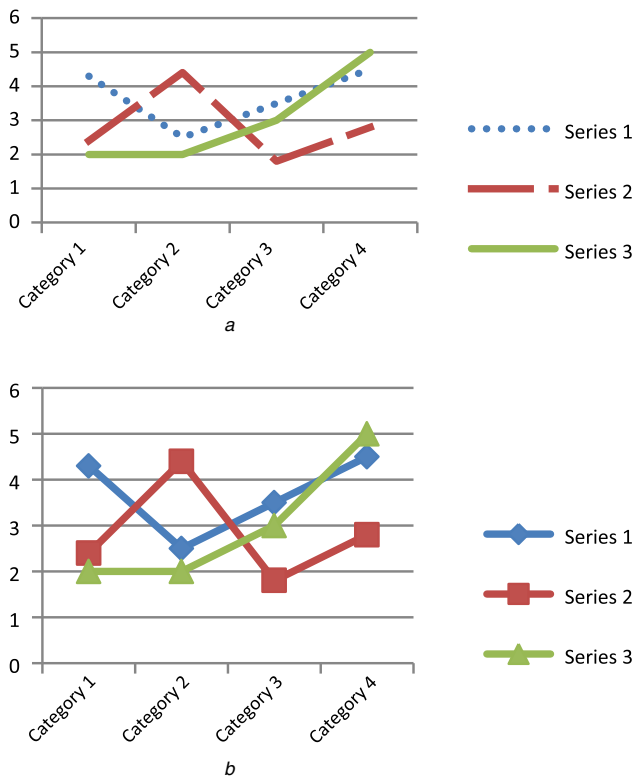


Fig. 1: Sample graph with blue (dotted), green (solid) and red (dashed) lines
a Subfigure 1
b Subfigure 2

5.3.3 Third Level Headings: The third level section headings should also be in italic font but should end with a colon (:). The text for that section should run on and not start as a new paragraph.

6 Figures

Figures will be reproduced exactly as supplied, with no redrawing or relabelling. It is therefore imperative that the supplied figures are of the highest possible quality. The preferred format is encapsulated postscript (.eps) for line figures and .tif for halftone figures with a minimum resolution of 300 dpi (dots per inch)

Graphics may be full colour but please make sure that they are appropriate for print (black and white) and online (colour) publication. For example lines graphs should be colour and use dotted or dashed lines, or shapes to distinguish them apart in print (see Fig. 1). Each figure should be explicitly referred to in numerical order. A maximum of four subfigures will be allowed per figure.

Please note that IET typeset format is to float figures to the top or bottom of a page, they cannot appear within the main body of the text.

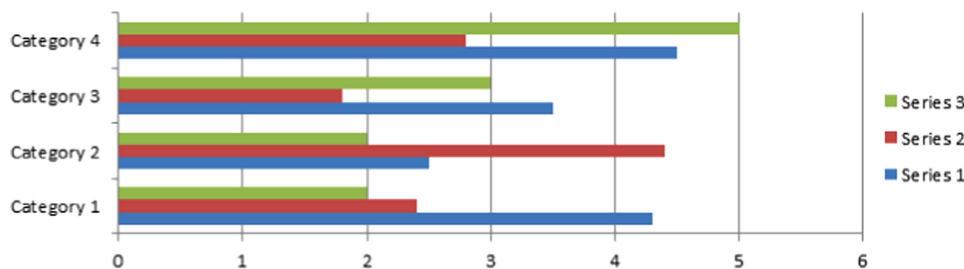


Fig. 2: Sample graph spanning two columns

Figures can span two columns but cannot exceed 17.5 cm in width (see Fig. 2).

Figures and their subfigures should be treated as a static image and should not fall onto other pages or columns.

6.1 Figure Captions

Figure captions must be below the figure, in 10pt italic font and should ideally consist of one sentence. If a figure has subfigures, all subfigures should also have a caption and should be identified by letters, e.g. *a*, *b*, *c*, as shown above.

7 Tables

Tables should be formatted as shown in Table 1 with no column lines unless needed to clarify the content of the table. Row lines can be used to distinguish the column headings from the content of the table. Any tables larger than half a page should be placed in an appendix and the appendix cited within the main body of text eg. "see Appendix 1 for table of results".

If the table has four or five columns it should span the whole width of the page. These also float to the top or bottom of the page instead of break up the main text.

7.1 Table Captions

Tables must be numbered and cited within the text in strict numerical order. Table captions must be above the table and in 10pt font

8 Mathematics and equations

When writing mathematics, avoid confusion between characters that could be mistaken for one another, e.g. the letter 'l' and the number one.

Refer to equations using round brackets, e.g. (1) followed by (2).

$$A = \pi r^2 \quad (1)$$

$$\cos \alpha + \frac{\Delta y}{\Delta x} \cos \beta = 2 \cos \frac{1}{2} (\alpha + \beta) \cos \frac{1}{2} \sum \left(\alpha \frac{dy}{dx} - \beta \right) \quad (2)$$

Equations and references should not exceed the margins of a single column; however, if an equation does exceed the width of a single

Table 1 Example table

Column heading	Column heading two	Column heading three
Row 1a	Row 1b	Row 1c
Row 2a	Row 2b	Row 2c
Row 3a	Row 3b	Row 3c
Row 4a	Row 4b	Row 4c
Row 5a	Row 5b	Row 5c
Row 6a	Row 6b	Row 6c

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) + f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) \quad (3)$$

column, it should be moved to the bottom of that page and a citation of 'see (3)' left in its place in the text to ensure accurate typesetting. All equations that are too long to fit within a single column should be numbered and cited at their appropriate place in the text. These equations will be dropped either to the bottom of the page, or the top of the nearest available page.

Vectors and matrices should be in bold italic and variables in italic.

If your paper contains superscripts or subscripts, take special care to ensure that the positioning of the characters is unambiguous.

Exponential expressions should be written using superscript notation, i.e. 5×10^3 not 5E03. A multiplication sign should be used, not a dot.

In line equations can be used but if the equation is longer than a line it will need to be broken up in a suitable location to ensure the line spacing is not too large $a^2 + b^2 = c^2$.

9 Page Numbers and Footers

Page numbers should be used on all pages. Footers are not in IET's house style so must not be used. If they are used they will be moved to within the text at the typesetting stage.

10 Conclusion

Submissions should always include the following sections: an abstract; an introduction; a conclusion and a references section. If any of the above sections are not included the paper will be unsubmitted and you will be asked to add the relevant section.

11 Acknowledgments

Acknowledgements should be placed after the conclusion and before the references section. This is where reference to any grant numbers or supporting bodies should be included. The funding information should also be entered into the first submission step on Manuscript Central which collects Fundref information [4].

Please note that the IET does not include author biographies in published papers.

12 References

An average research paper should reference between 20 and 30 works, the bulk of which should be recently published (i.e. within the last five years) leading-edge articles in the field, preferably from top journals or conferences. You should compare your own findings to this recent research and demonstrate how your work improves on it in order to demonstrate that your work shows a significant advance over the state of the art – a pre-requisite for publication in IET Research Journals.

Please note that tables, figures and equations should not appear in the middle of the references. If this happens white space will be introduced to avoid items appearing in the references.

12.1 Referencing Style

You should number your references sequentially throughout the text, and each reference should be individually numbered and enclosed in square brackets (e.g. [1]).

Please ensure that all references in the Reference list are cited in the text and vice versa. Failure to do so may cause delays in the production of your article.

Please also ensure that you provide as much information as possible to allow the reader to locate the article concerned. This is particularly important for articles appearing in conferences, workshops and books that may not appear in journal databases.

Do not include references for papers that have been submitted and not accepted for publication. Papers that have been accepted for publication are allowed as long as all information is provided.

Please provide all author name(s) and initials, title of the paper, date published, title of the journal or book, volume number, editors (if any), and finally the page range. For books and conferences, the town of publication and publisher (in parentheses) should also be given.

If the number of authors on a reference is greater than three please list the first three authors followed by *et al.*

Nothing should interrupt the references.

13 Example References

13.1 Websites

[1] 'Author Guide - IET Research Journals', <http://digital-library.theiet.org/journals/author-guide>, accessed 27 November 2014

[2] 'Research journal length policy', http://digital-library.theiet.org/files/research_journals_length_policy.pdf, accessed 27 November 2014

13.2 Patent

[3] 'ORCID: Connecting research and researchers', <http://orcid.org/>, accessed 3 December 2014

[4] 'Fundref', <http://www.crossref.org/fundref/>, accessed 4 December 2014

13.3 Journal articles

[5] Smith, T., Jones, M.: 'The title of the paper', IET Syst. Biol., 2007, 1, (2), pp. 1–7

[6] Borwn, L., Thomas, H., James, C., et al.: 'The title of the paper', IET Communications, 2012, 6, (5), pp 125-138

13.4 Conference Paper

[7] Jones, L., Brown, D.: 'The title of the conference paper'. Proc. Int. Conf. Systems Biology, Stockholm, Sweden, May 2006, pp. 1–7

13.5 Book, book chapter and manual

[8] Hodges, A., Smith, N.: 'The title of the book chapter', in Brown, S. (Ed.): 'Handbook of Systems Biology' (IEE Press, 2004, 1st edn.), pp. 1–7

[9] Harrison, E.A., and Abbott, C.: 'The title of the book' (XYZ Press, 2005, 2nd edn. 2006)

13.6 Report

[10] IET., 'Report Title' (Publisher, 2013), pp. 1-5

[11] Brown, F.: 'The title of the patent (if available)'. British Patent 123456, July 2004

[12] Smith, D., Hodges, J.: British Patent Application 98765, 1925

13.7 Thesis

[13] Abbott, N.L.: 'The title of the thesis'. PhD thesis, XYZ University, 2005

13.8 Standard

[14] BS1234: 'The title of the standard', 2006

14 Appendices

The Appendix should follow after the references as is House Style.

Equations, figures and tables that are not a part of the Appendix should not follow after the references.

Additional material, e.g. mathematical derivations, tables and figures larger than half a page that may interrupt the flow of your paper's argument should form a separate Appendix section (see Table 2). Do not, however, use appendices to lengthen your article unnecessarily as this section is included in the word count. If the material can be found in another work, cite this work rather than reproduce it.

Table 2 Example of large table

Column heading 1	Column heading 2	Column heading 3	Column heading 4
Result 1	123	123	123
Result 2	123	123	123
Result 3	123	123	123
Result 4	123	123	123
Result 5	123	123	123
Result 6	123	123	123
Result 7	123	123	123
Result 8	123	123	123