



## Indian Journal of Engineering and Materials Sciences

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### Instructions to Authors

#### AIM & SCOPE

Indian Journal of Engineering & Materials Sciences aims to publish original research papers — those present new results — related to the theory and practice of different aspects of engineering and materials sciences. Areas include: Aerospace engineering, Mechanical engineering, Metallurgical engineering, Electrical engineering, Electronics engineering, Civil engineering and Materials science.

#### SUBMISSION OF MANUSCRIPTS

Paper can be submitted (**maximum 11-15 pages**) on-line in MS Word format through Institute's Online Submission portal, <http://op.niscair.res.in>. To submit a manuscript one has to register as author and proceed as per online instructions that appear on the screen.

The steps are as follows: Start→Upload→Submission→Enter Metadata→Upload Manuscript/Supplementary Files→Confirmation. The TIFF/JPEG files of the illustrations and pdf files of the supplementary data as well as the certificate of originality, signed by all the authors on the official letterhead.

#### MANUSCRIPT PREPARATION

*General:* Manuscripts should be in MS Word format in single space (11 pt, Times New Roman font) with page limit of 11–15. All pages should be numbered consecutively. Use SI units throughout, and where other units are used for some reason, give equivalent SI units in parenthesis. Symbols should conform to standard CSIR-NIScPR guidelines (check previous IJEMS issues online).

*Title:* It should be short & informative formatted in \_Sentence case\_. Latin names are to be given in *italics*. (15 pt)

*Affiliation of Author(s):* Name(s) and address(es) of the institution(s) where the work was carried out including pin code (space after 3 digit) should be given. Present address of author(s), if different, should also be given. Corresponding author's name should bear asterisk(\*) mark with e-mail address as foot note. (9 pt)

*Short Running Title:* Not more than 50 characters. ALL IN CAPITALS (9 pt)

*Main Headings:* Each manuscript should be divided into the following main headings: **Abstract, Introduction, Materials and Methods, Results and Discussion, Conclusion,**

**Acknowledgement and References.** The main headings should be typed in 11 pt **bold** font, as sentence case, on the left hand side of the page. Similarly, the next level headings could be presented as follows preferably without using the decimal classification number: *Sub-Headings:* Sentence case, 9 pt **bold** *Sub-Sub Headings:* Sentence case, 9 pt **Bold-Italics** *Sub-Sub-Sub Headings:* Sentence case, 9 pt *Italics* should be uploaded separately as supplementary files.

*Abstract:* Abstract should be self contained. For full papers it should not exceed 200–250 words and for short communications, about 100–150 words. Should contain scope, methodology employed, and key findings and conclusion in a way that is useful for indexing and abstracting service providers and gives a bird's eye view to a reader. Use of tabular material, symbols, equations, notations, references and abbreviations should be avoided. In case the citation of reference is required, the complete reference (not the reference number) should be given in square brackets. (9 pt)

*Keywords:* Five or six keywords/phrases (except those in title) best representing the manuscript should be given just below the abstract in alphabetical order. First letter of each keyword should be capital. (9 pt)

*Introduction:* A brief and precise literature review that provides the essential background and knowledge gap that evoked the study should be given along with the scope and objectives of the research. (11 pt)

*Materials and Methods:* Details of all materials and methods used should be given with proper citations. If new method or reference to a *hard to obtain* source is given then it should be described in sufficient details for reproducibility. The section should clearly indicate the experimental design followed and the statistical methods used. (11 pt)

*Results and Discussion:* Results should be coherently presented and appropriately linked to tables, figures and other illustrations, but restricted to bare minimum. The section should also compare findings with those of others, as deemed necessary by the authors, and its relevance be discussed to the problem tackled, in particular, and for the branch of science, in general. Any weakness of the study undertaken, or any other peculiarity must also be pointed out. New findings, new interpretations, etc should be clearly spelt out, and also confirmation of important concepts, models, theorems, etc should be indicated. Same data should not be presented in both table and figure form. Results should be exclusively for self work and if based on past work then give proper citations. Discussion should be relevant and should not be mere compilation. (11 pt)

**Conclusion:** Conclusion should address the main findings, research outcomes and policy implications, if any, relating to the objectives. It should not include any extra material or the previous background. It should also include negative results and recommendations based on the results. (11 pt)

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**References:** The literature as referred to in the text should be put under this section and number sequentially in the order of its first use or mention in the text. Indicate sources (references) in the text as superscript Arabic serial numbers as illustrated in this paragraph itself. If the reference number comes at the end of the sentence, it should be placed after the full stop. Including two consecutive numbers 2,3, more than one citations 1,2,4 will be separated by comma without space. Three1–3 or more1–4 consecutive citations will be presented by first number and last number separated by *en dash*. If the reference number comes on any numeral 67(5), it should be given within parentheses. Where a mention of authors in the body text is required, two authored citation would mention both authors separated by *&*, and more than two authored citation would mention first author *et al.* (et al. in *italics*) without initials of first/middle names. Unpublished work and personal communication should be referred to in the text itself in parentheses. Abbreviate journal names in *italics* as given in the *International Serial Catalogue* (published by International Council of Scientific Union's Abstracting Board) without the use of any period ('.'). Each reference should provide last name (full) and initials (first/middle names) of all the authors, giving coma in between the authors and *&*' before the last author. Whatever be the number of authors, all authors should be mentioned. Examples are given below for illustration:

Reference to a research paper, should carry names and initials of authors followed, in order, by the title of the periodical in the abbreviated form (*italics*), the volume number, the year within circular brackets and the page no. [e.g. Singh S N & Seshadri V, *Indian J Eng Mater Sci*, 13 (2006) 477].

For names of periodicals, the standard abbreviations listed in the *International Serials Catalogue* (ICSU-AB) should be used. If a paper has been accepted for publication, the name of the authors and the journal should be given followed by the words "in press" within circular brackets. [e.g. Gowda B H L, *Indian J Eng Mater Sci*, (in press)].

Reference to a book should include, in the following order: names and initials of authors, the title of the book (*italics*), name of publisher and place of publication within circular brackets, and year [e.g., Ross P J, *Taguchi techniques for quality engineering* (McGraw-Hill Book Company, Singapore), 1998 If the reference is to the work of an author or edited by a different person, the fact that it is cited from the source book should be clearly indicated [e.g. Okamura K, Sato M, Seguchi T & Kawanishi S, in *Controlled interphase in composite materials*, edited by Ishida M (Elsevier Science Publishers, New York), 2003, 209].

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Reference to a patent should include names of patentees, county of origin (*italics*) and patent number, the organization to which the patent has been assigned within circular brackets, data of acceptance of the patent and reference to an abstracting periodical where available [e.g., Kennedy J P & Faust R, *US Pat.* 4,910, 321 (to the University of Akron), 2000].

Unpublished papers and personal communications should not be listed under references but should be indicated in the text, e.g. (Pande, A B, unpublished work/data); (Pande, A B, personal communication).

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**Tables and Figures:** The same data should not be repeated in both figures and tables. All figures, tables and equations should be in editable form so that they can be edited wherever required. Also, no bold face of symbols and letters in figures and tables are allowed. Both tables and figures are serially numbered in Arabic numerals and referred to in the text in the same way. Legends to figures should all be on a separate sheet. Figures and illustrations should be *double the final size*, which will normally be restricted to a column width (85 mm), drawings should be on white drawing paper. (9 pt)

**Tables:** Tables (maximum 4–5) should be typed in *Table Grid* Design in MS Word in single space with proper headings and numbered consecutively and should contain horizontal cells only. Standard abbreviations should be used in column headings. The table headings should be in sentence case. In the text, tables should be written as: Table 1 or Tables 3–5. A column should not contain any blanks. Use em rules or abbreviations where data are missing, e.g. NA for —not applicable or —. Additional information should be given in the form of footnotes, generally identified with superscript of small alphabets placed in the appropriate order in the table from left to right and top to bottom. The same mark may be used on two or more elements if the corresponding note applies. The footnotes marked in tabular matter should be printed at the bottom of the table before the rules. In case of tables that extend to more than a page, the complete title [incorporating (*Contd*)] after the table number, and column headings are to be repeated on the next page. The term (*Contd*), should also be given at the end of the table (before the

rule) on previous page, to indicate that the table is still continuing. In the text, capitalize the word —tablel when referring to a specific table, but use lower-case letters when referring to a generic table, e.g. The data in Table 1 shows the mortality rate. The table below presents the data.

*Figures:* Figures (maximum 5–6) as illustrations, photographs, graphs etc. will be accepted in TIFF or JPEG format as supplementary files in online submission. Text figures should be numbered in Arabic numerals. In the text, figures should be written as: Fig. 2 or Figs 2–8. Each figure should have a brief self-explanatory caption. Additional information, if necessary, may follow the caption in brief within brackets. The caption should be given as ‘\_Fig. 3 — Design of a case-control study’. The end of the caption should not have a full stop. Graphs should have their axes clearly labeled with the relevant units of measurement included in parentheses. Each curve inside the figure should be distinguished by using various patterns (avoid colours unless unavoidable) and should necessarily be explained inside the figure or in caption. Lettering, numbering, symbols and lines in the graphs/illustrations should be sufficiently clear and large to withstand reduction up to 50%. Captions and legends to illustrations should be typed after References. If a figure is reproduced from material previously published by another publisher, permission must be obtained from the author(s) and/or publisher(s) and the acknowledgement of the source should be included.

*Equations:* Punctuate all the equations in text and in display according to their function in the sentence. Displayed equations and text are not separated by punctuation. They should be given in a separate line, e.g. Distance is calculated as follows:  $D = x(y) \dots$  (1) where D, is distance; x, time; and y, rate. But if the same equation is run into the text (i.e. not displayed), use a comma, e.g. Distance is calculated as  $D = x(y)$ , where D = distance, and... . In equations, variables are italicized; the surrounding parentheses are not (*a*, *s*, *m*). All the symbols used for variables and constants in equations should be explained at the first time of their occurrence.

Spaces, three dots, and the equation number in parenthesis should follow displayed equations. While referring to a single equation in the text, one should use Eq. (2); in case more than one equation is to be referred to, use Eqs (2)–(4), etc.

## ESSENTIALS FOR MANUSCRIPT PREPARATION

It is mandatory on the part of the corresponding author to furnish the following certificate at the time of submission of the manuscript for publication:

*A declaration by authors as per certificate given below*

*This to certify that the reported work in the paper entitled “.....” submitted for publication in the journal is an original one and has not been submitted for publication elsewhere. I/we further certify that proper citations to the previously reported work have been given and no data/tables/figures have been quoted verbatim from other publications without giving due acknowledgement and without the permission of the author(s). The consent of all the authors of this paper has been obtained for submitting the paper to the journal “.....”.*

*[Signatures and names of all the authors]*

The Editor

## Indian Journal of Engineering and Material Sciences

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