

## Instructions to Authors

### SCOPE

The Indian Journal of Pure and Applied Physics welcomes for publication, full papers and short notes, reporting significant new results of research, in all areas of physics except Radio & Space physics. The applied fields covered are electronics, electrical engineering, instrumentation and applied mathematics. However, papers in applied mathematics with emphasis on only derivation and proof and having no direct physical significance, will not be considered. Review articles are also published.

### SUBMISSION OF MANUSCRIPT

Manuscript for publication in *Indian Journal of Pure & Applied Physics* (monthly) should be submitted online (<http://op.niscair.res.in>) using the word processing software MS word. It should be accompanied with a certificate on institute's letter head signed by all the authors stating that the reported work is original and it has not been submitted elsewhere for publication; that the proper citations to the previously reported works have been given; and that in case data, Tables or Figures are quoted verbatim from some other publication, the required permission to do so has been obtained.

### PREPARATION OF MANUSCRIPT

Authors may consult recent issues of the Journal to familiarize themselves with the general style and practices adopted in regard to the various elements of a paper.

#### General

Manuscript should be presented in as concise a form as possible. Good attention should be given to spelling and grammar. In giving names of chemical compounds and structures, abbreviations of units of measurements, symbols and notations, the style and practices recommended by the IUPAP and IUPAC, should be followed.

Frequently repeating combinations of words, e.g. electric field gradient (EFG), junction field effect transistor (JFET), stimulated Raman emission (SRE), should be abbreviated subsequently, indicating the

abbreviated form in parentheses, as shown, at the place of their first occurrence.

Pages should be numbered consecutively and arranged in the following order: Title, authors' name with their institutional affiliations and abstract, along with relevant footnotes whenever necessary (on a separate sheet); introduction; experimental details/theory/method/analysis; results; discussion; conclusions(s); acknowledgement; references and appendixes. Tables, captions for figures (with legends) and appendixes should be typed on separate sheets and attached at the end of the manuscript.

#### Title

The title should be neither too brief/general nor unnecessarily long. It should reflect the content of the paper so as to derive the maximum advantage in indexing.

A short running title for the paper under which it should be classified in the contents page and the author's name and address for correspondence, should also be provided on the title page.

#### Abstract

The abstract, usually not exceeding 200 words, should indicate the scope and significant content of the paper, highlighting the principal findings and conclusions. It should be in such a form that abstracting periodicals can use it without modification.

#### Introduction

Long and elaborate introduction should be avoided. It should be brief and state the exact scope of the study in relation to the present status of knowledge in the field. Literature review should be limited strictly to what is necessary to indicate the essential background and the justification for undertaking the study.

#### Materials, methods, apparatus, etc.

The sources of materials and their purity, methods of preparation, procedure for measurements and their accuracies, etc. should be clearly stated to enable any

other research to repeat the work if necessary. New methods, techniques, theories, etc. should be described in adequate detail; but if they are well known, a mere literature reference to them will do; differences from standard ones, improvements or innovations should, however, be clearly mentioned.

### Results

Only such primary data are essential for understanding the discussion and main conclusions emerging from the study should be included. All secondary data as are of interest to a specific category of readership should not be included in the paper. Such data should be retained by the authors for supply, on request, to any interested researchers. A footnote to this effect may be inserted at the relevant place in the paper.

The results must be presented in a coherent sequence in a unified logical structure, avoiding repetition or confusion. Limitations of the results should be clearly stated.

The same data should not be presented in both tabular and graphic forms. Only such tables and figures as are essential should be included. Simple linear plots that can easily be discussed in the text, should not be included. Infrared, ultraviolet, NMR and other spectra, DTA curves, etc. should be included only if they pertain to new compounds and/or are essential to the discussions; otherwise only significant numerical data should be given in the text or in a table.

### Discussion

Long rambling discussion should be avoided. The discussion should deal with the interpretation of results without repeating information already presented under results. It should relate new findings to the known and include logical deductions. A separate section on 'conclusions' can be given only when they are well established and of outstanding significance. Mere observation of qualitative trends of results should be distinguished from firm conclusions. Also, limitations, if any, to the conclusions should be clearly pointed out.

### Mathematical portions

Special attention should be given to the mathematical portions of the paper. Equations must be well separated from the text and must be composed in **Microsoft Equation, Math Type 3 or Math Type 6** version so that it can be edited. Length of the equation should not exceed 8 cm. Equations should be numbered consecutively in Arabic numerals with the number in parenthesis near the right hand margin.

For example:

$$\Gamma_s(\omega) = \frac{\pi a^4}{4\Omega\tilde{\Omega}} \left[ \delta(\omega - \tilde{\Omega}) - \delta(\omega + \tilde{\Omega}) \right] + \frac{\pi b^2 c^2}{4\Omega\tilde{\Omega}} \left[ \delta(\omega - \tilde{\Omega}) - \delta(\omega + \tilde{\Omega}) \right] + \frac{\pi V_{ik}^2 N_k a^2}{4\Omega\tilde{\Omega}} \left[ \delta(\omega - \tilde{\Omega}) - \delta(\omega + \tilde{\Omega}) \right] \quad \dots (1)$$

Capital and small letters, particularly of the same letter when both occur, as well as letters or symbols likely to be confused one for the other, should be clearly distinguished, for example 'oh' (o), 'zero' (0) and 'degree' (°), K, k, and kappa (κ), 'ell' (l) and 'one' (1), etc. Special characters (e.g. Greek, script, vector, tensor, etc.) required must be indicated by marginal notes. Letters and symbols which should appear in bold face must be clearly indicated. To simplify typesetting: (i) long and complicated mathematical expressions which are frequently repeated should be replaced with single letter/symbol, without clashing with the others used in the paper, (ii) the "exp" form of complex exponential functions should be used; and (iii) to simplify fractions, the solidus (/) is to be used and fractional exponents are to be used instead of root signs, e.g.

Write  $\exp[-i\omega_0(t_1-t_2)/2]$  and *note*  $^{-i\omega_0(t_1-t_2)/2}$

Write  $(4\omega_{pl}K_{3\lambda}^2 / \tilde{\omega}K_D^2)^{1/2}$  and *not*  $\sqrt{\frac{4\omega_{pl}K_{3\lambda}^2}{\tilde{\omega}K_D^2}}$

### Tables

Tables should be numbered consecutively in Arabic numerals and should bear brief titles. Column headings should be brief. Units of measurement should be abbreviated and placed below the headings. Nil results should be indicated and distinguished clearly from absence of data. Inclusion of structural formulae inside the tables should be avoided as far as possible. Tables should be referred to in the text by numbers and not by terms like 'above', 'below', 'preceding' or 'following'. Results should not be presented to a greater accuracy than that of the method employed.

- Tables should be set using TAB only, not by SPACE BAR etc.
- No lines should be used separating columns or rows.
- Column matter should be entered in continuation.

### Illustrations

The number of illustrations should be kept to the minimum. Wherever possible, e.g. a number of individual analogous figures referring to different variables, substances, molecules, etc, may be combined into one composite figure. All illustrations should be numbered consecutively in Arabic numerals. Captions and legends to the figures should be self-explanatory. Line drawings should be made with Indian ink on white drawing paper/cellophane sheet/tracing cloth, and drawn to approximately twice the printed size.

The letterings should be uniform, preferably in stencil, so as to be not less than 1.5 mm after reduction width-wise to full page size (165 mm) or column size (80mm). The size of geometrical shapes (used to distinguish different graphs), dots, lines, etc, should be sufficiently large to permit the necessary reduction without loss of detail. In the case of photographs (colour and half tone), prints must be provided on glossy paper and contrasty. If an illustration is taken from another publication, reference to the source should be given and prior permission secured. Illustrations should be referred to in the text by numbers and not by terms like 'above', 'following' etc. Details of X and Y coordinate must be given with proper unit. All the illustrations (Colour, Halftone, line drawing) should be either in TIFF, JPEG or Doc format.

### Acknowledgement

Acknowledgements should not be exuberant and must be made only to real assistance rendered in connection with the work reported in the paper.

### References

References cited should be limited to the absolute minimum (particularly in the case of short notes) based on their essential relevance. In the text, references to literature should be numbered consecutively, in the order of their first occurrence, and should be indicated by superscript. Arabic numbers at the relevant places; as far as possible the placement of references on numerals or other symbols should be avoided; in such cases the reference may be given in parenthesis in running text, e.g. "this yielded for  $n$  a value of 2.3 (Ref. 5)". Full bibliographic details for all the references mentioned in the text should be listed in serial order at the end of the paper.

In citing references to research papers, names and initials of authors should be followed, in order, by the

title of the periodical in the abbreviated form (underlined), the volume number (two lines underneath), the year within circular brackets and the page number [e.g. Chandra B P & Shrivastava K K, *J Phys & Chem Solids*, 39 (1978) 939]. For names of periodicals, the abbreviations followed by the Physics Abstracts should be used. For periodicals not covered by Physics Abstracts, the title abbreviations should be according to the Bibliographic Guide for editors and Authors, 1974, published by the American Chemical Society, Washington DC, USA. If a paper has been accepted for publication, the names of the authors and the journal (with volume number and year, if known) should be given followed by the words "in press"

Reference to a book should include details in the following order: name and initials of authors, the title of the book (underlined), name of publisher and place of publication within circular brackets and year and page (s) [e.g. Clayton G B, *Operational amplifiers* (Newnes-Butterworths, London), 4<sup>th</sup>Edn, 1977, p. 26]. If the reference is to the work of an author published in a book by a different person, the fact that it is cited from the source book should be clearly indicated [e.g. Trunhout Van J, 'Thermal stimulated discharge of electrons' in *Tropics in applied physics: Vol, 33 —Electrets*, edited by C M Sessler (Springer Verlag, Berlin), 1980, p.130].

Proceedings of conferences and symposia should be treated in the same manner as books. References to a paper presented at a conference, the proceedings of which are not published, should include, in the following order, names and initials of authors, title of the paper (underlined), name of the conference, and where and when it was held (e.g. Herczeg P, *Symmetry-violating kaon decays*, paper presented to the International Conference on High Energy Physics and Nuclear Structure, Vancouver, Canada, 13-17 August 1979). Reference to a thesis should include the name of the author, title of the thesis (underlined), university or institutions to which it was submitted and year of submission (e.g., Mehrotra S N, *Many-body techniques and their applications to interacting bosons*, Ph D thesis, Ranchi University, 1976).

Reference to a patent should include name of patentees, country of origin (underlined) and patent number, the organization to which the patent has been assigned (within circular brackets), date of acceptance of the patent and reference to an abstracting periodical where available [e.g. Labes M M, US Pat. 4,066567 (to Temple University), 3 January 1978; Chem Abstr., 88 (No. 20) (1978). 138350 n].

a) No full stop marks are needed any where. e.g.

1 Roy S B, Chaddah P & Opradhan A K, *Indian J Pure & Appl Phys*, 35 (1997) 682.

b) Italics/slanted characters be used for underlined portions, e.g. Indian J Pure & Appl Phys, should be set as *Indian J Pure & Appl Phys*, (no underline)

c) After references number use only TAB and not the variable space for full stop.

### **Proofs**

The edited manuscript will be sent to the author for his final approval before giving it to the press. No galley proofs will be sent to the authors for corrections, since the proofs will be checked at the editorial office.