



INSTRUCTIONS TO CONTRIBUTORS

Journal of Scientific & Industrial Research (JSIR)

Monthly Research Journal, Published by CSIR-NIScPR

Journal of Scientific and Industrial Research (JSIR), started in 1942 is published *monthly* in English language. It is the first journal of Council of Scientific and Industrial Research (CSIR). It is currently published by CSIR-NIScPR (erstwhile CSIR-NISCAIR) since June, 2021. It serves as an information link between science-technology and the society. It caters to entrepreneurs, technologists, engineers, technocrats and scientists on one hand, and planners, administrators and managers on the other.

Original research articles of interest to industry, reviews on frontiers of science and technology, articles on management and policies relating to science, technology, and industrial applications are invited for publication. **Reviews on current topics are encouraged. No case studies will be entertained.** Editor decision will be final for considering MSS and publishing the research paper. The detailed coverage is given below:

Subject Coverage

Chemical Technology	CT
Civil Engineering	CE
Electronics Information & Communication Technology	EICT
Earth, Environment & Atmospheric Sciences	EEAS
Electrical Engineering	EE
Energy Technology & Management	ETM
S&T and R&D Management	STRDM
Mechanical Engineering	MeE
Microbiology and Biotechnology	McBt
Mining Engineering	MiE
Nanotechnology	Nt
Rural Development Technology	RDT

Book Reviews: Books, monographs and technical bulletins on industrial methods and techniques, including technology management and policy, as well as other data like production and demand statistics are accepted for review.

Author-Reader Platform: A platform for instructions to contributors and announcements. Brief reports by authors on inventions and discoveries of scientific, technological and industrial research are covered. A column where readers interact and seek clarifications/additional information on articles published in the journal, or provide opinions, views and suggestions etc.

Manuscript Preparation

General: Manuscripts should be in MS Word format in **single column**, single space (11 pt, Times New Roman font) spreading in around 11–15 pages. 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 JSIR issues online at <http://nopr.niscpr.res.in/handle/123456789/46>). All headings sub-headings should be in Title Case (First letter of major words are capitalized). No sentence should start with Fig. / Table / numerical / abbreviation. Ensure to use degree symbol (°) and not superscript of zero (0) or 'o'; minus sign (–) and not hyphen (-); multiplication sign (×) and not 'X' or '*'. There is no space before % and °C, °F but all other units bear space; units are used in same format throughout the manuscript including figures and tables; All biological names and '*et al.*' in multi authored citation should be given in *italics*.

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

Short Running Title: Not more than 60 characters (including space). ALL IN CAPITALS (9 pt)

Author(s): Names of authors to be typed in first letters capital (Capitalize each word), each name separated by commas and '&' before the last author. The names of all the authors should consist of first name, middle name (*if any*) and last name. Omit titles, such as Dr, Mr, Prof, Colonel, etc. In case of multiple authors, the author for correspondence is indicated with asterisk (*) symbol. (10 pt)

Affiliation of Author(s): Name(s), e-mails, 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. The affiliations are numbered in chronology and indicated against the respective authors and not vice versa. (9 pt)

Main Headings: Each manuscript should be divided preferably into the following main headings: **Abstract** (no title), **Keywords**, **Introduction**, **Materials and Methods (Theoretical Considerations/Experimental Details)**, **Result and Discussion**, **Conclusions**, **Conflict of Interest (COI)**, **Acknowledgement**, and **References**. For review papers, "Materials and Methods", and "Results and Discussion" are not essential. 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: Title Case, 9 pt **bold**

Sub-Sub Headings: Title Case, 9 pt **Bold-Italics**

Sub-Sub-Sub Headings: Title Case, 9 pt *Italics*

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 keywords/phrases (except those in title) best representing the manuscript should be given just below the abstract arranged alphabetically with first letter Capital, separated by comma, and abbreviated for standard phrases. (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)

Theoretical Considerations/Materials and Methods/Experimental Details: 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 alternate titles may be used as per applicability. 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)

Conclusions: Conclusions 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 limitations, negative results and recommendations based on the results. (11 pt)

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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.¹ The citations is numbered chronologically as they occur for the first time in text and given as superscript. Re-occurrence does not require any chronology. If the reference number comes at the end of the sentence, it should be placed after the full stop.² 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 as range 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 (last name only) 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 (ICSUAB) 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:

Research Papers and Proceedings

- *With Author(s)*— Liotta R, Rose K, Krishnan P K & Ghosal A, Creep compliance properties of steel cast in space, *J Mater Sci*, **18** (1999) 243–256. Where issue is present, make it bold. [If accepted for publication, give (in press) in place of volume, year and pages]
- *With no Authors*— Authors will simply be missing from the style given above. Other parts remain in place.
- *Proceedings*—Rao N V, Bakheta D R C & D'Souza L, The ultimate form of power function as derived from fractional derivatives, *Proc Int Conf Appl Math Stat* (Iowa State University Press, Iowa) 2000, 224–229.
- Avoid citation of papers from fake/ predatory Journals.

Books, Conferences and Symposia

- *Books*—Hearle J W S & Peters R H, *Fibre Structure* (Academic Press, London) 1987, 87–123. [If the reference is to a work of an author published in a book by another author, the fact should be indicated by prefixing ' in' appropriately].
- Roels O A & Mahadevan S, Vitamin A, in *The Vitamins: Chemistry, Pathology and Methods*, 2nd edn, vol VI, edited by P Gyorgy & W N Pearson (Academic Press, New York) 1967, 139–210.
- *Symposia/Conferences*—Kapoor B C, Managing in the face of not-so-developed and organised environment, in *Nat Symp Manag Dev* (Institute of Public Administration, Jaipur) 23–25 July 2000.

Theses and Dissertations

- Ghosh G, *Structure and fracture properties of coal in India*, Ph D Thesis, Indian Coal Mining Institute, Dhanabad, India, 1998.

Patents

- Trepaginer J H, New surface finishings and coatings, *US Patent 1276323* DuPont Inc, USA) 27 June 2000; *Chem Abstr*, **49** (2000) 27689.

Personal Communications and Unpublished Data

- If referred are to be so indicated in the text itself rather than putting under references. Indicate like: ...and has a blood pressure lowering properties (Gupta G D, All India Institute of Medical Sciences, New Delhi, unpublished data) as well as a fairly good glucose regulating function (Rajpurohit B D, National Institute of Nutrition, personal communication) ...

Website

Reference to information downloaded from a website should give full address of website without underline (remove hyperlink), followed by the date of download, if data are dynamic. [e.g. www.niscpr.res.in (23 April 2022)]

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 (maintaining chronology). 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. Unless unavoidable, figures (graphs) should not be coloured and should be in editable format (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 “table” 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:

$$D = x(y) \quad \dots (1)$$

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.

Abbreviations: Standard International practices for abbreviations should be used in the text and illustrations without full stop mark. Provide full form of the abbreviations at their first occurrence. Avoid starting any sentence with abbreviation.

Ethical Issues

JSIR values publication ethics and guidelines as defined by the Committee of Publication Ethics (COPE) (<https://publicationethics.org/>). For human/animal experimental model, authors should follow ethics prepared by Indian National Science Academy (INSA), New Delhi, India; Animal Welfare Division of the Ministry of Environment & Forest, Govt. of India, New Delhi; Council of International Organization of Medical Sciences (WHO/UNESCO), NIH and PHS. In such research communications, it is mandatory for authors to mention about the approval for the particular research work obtained from the relevant/respective institutional committee on ethics.

JSIR supports the International Committee of Medical Journal Editors (ICMJE) Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals (http://www.icmje.org/urm_main.html).

Studies involving human subjects should follow the required procedure of securing ‘informed consent’.

A statement on ‘**Conflict of Interest (COI)**’ has to be included in the declaration at the time of submission of the manuscript.

Manuscript Submission

Paper can be submitted (**maximum 11-15 pages**) on line in **single column** MS Word format. Upload a supplementary file containing a list of at least 3 potential referees (reviewers) with the following details: Salutation, Name, Affiliation, E-mail ID, Phone (optional) & Research interest (expertise). For online submission, authors are required to register themselves at <https://or.niscpr.res.in> by following 'Author guidelines for online submission'. The Online Publishing ensures end to end

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- (a) After consulting the respective Editorial Board Members, authors guilty of plagiarism will be debarred from publishing their papers in NIScPR journals
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The Editor

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