DOI: 10.18462/iir.tptpr2025.xxxx

Insert your title here

First Name SURNAME\*(a), Anton K. SMITH(a), Bernard JONES(b)

(a) Organization 1
City, State, Zip code, Country

(b) Organization 2
City, State, Zip code, Country

\*Corresponding author: e-mail

ABSTRACT

Please carefully review this manuscript template, which is posted on the conference website: [ceee.umd.edu/tptpr2025.](https://ceee.umd.edu/tptpr2025) Authors are encouraged to also [download IIR’s Guidelines for Authors](https://www.dropbox.com/scl/fi/r4m1fjh8ywrp0vlqu1btc/Guidelines-for-Authors_IIR-Conference.pdf?rlkey=8nmmxizfxenatm0qpgcatafd4&e=1&dl=0). All authors MUST use and comply with the conference paper template and apply the appropriate styles. The entire manuscript (i.e., including abstract, text, figures, tables, but **excluding references**) must contain a maximum number of 4,000 words for conference papers and a maximum number of 5,500 words for a keynote paper. A paper cannot exceed 12 pages in length, 15 for keynotes. The abstract should be no longer than 150 words. It should clearly state the objective of the work, give a concise and factual description of the contents, and present the important conclusions. Abstracts must be submitted in English (either British or American English, but be consistent throughout). Provide a list of five to six keywords that describe the emphasis of the paper.

Keywords: Refrigeration, Carbon Dioxide, Compressors, COP, Evaporators, Energy Efficiency

INTRODUCTION

The introduction should give a statement of the problem and a clear outline of the paper. As the number of words for the manuscript is limited to 4,000 for a conference paper, we recommend that the abstract and introduction combined do not exceed one page. This document is formatted using pre-defined styles that all authors should apply to the final version of their submitted article. We highly encourage authors to follow the instructions given within this template to ensure the conformity of the papers throughout the conference proceedings. The paper should be written with correct English grammar. It is possible to use either British or American English, but be consistent throughout. Carefully check grammatical errors and spelling before submitting conference papers.

MAIN SECTION(S)

The main body of the paper will consist of one or more main sections describing experimental designs, test procedures, theoretical consideration, and results. Label each section with an appropriate heading. Each section should describe the test equipment, measurements, observations, and mathematics needed to perform the experiments. Case histories, systems descriptions, or applications should contain original aspects, out-of-standard performances or noteworthy details that should be clearly identified and described. Discussion of the results, qualifications, limits to the accuracy of tests, and calculations should also be included in this part.

General Format and Page Limit

Please adhere to the following order: Title, Author(s) Information, Abstract, Introduction, Main Text (one or more sections and subsections, as appropriate), Conclusions (as appropriate), Acknowledgements, Nomenclature, References, Appendix(es). Papers should be prepared on a word processor. The text is to be single-spaced. Leave a line between paragraphs. Do not insert any blank lines between headings and the main text. The pre-defined paragraph styles include all necessary blank spaces around the headings. The template is prepared in Calibri. Use full justification for all text. The entire manuscript (i.e., including abstract, text, figures, and tables but **excluding references**) must contain a maximum number of 4,000 words for conference papers and a maximum number of 5,500 words for a keynote paper. Any manuscript having excess pages will not be published. The footer will contain the conference information. Please use the footer as it appears on this template.

Headings

Titles of all main sections [IIR Heading 1] should be 12-points, centered, and in boldface capital letters. A blank space 18-points (not a blank line) should be placed above the titles. A blank space 6-points (not a blank line) should be placed below the titles.

Sub-section headings [IIR Heading 2] should be in lowercase, 11-points, bold letters and justified left. A blank space 12-points (not a blank line) should be placed above the titles. A blank space 3-points (not a blank line) should be placed below the titles.

Sub-sub-sections [IIR Heading 3]

Sub-sub-sections should be avoided. If used, sub-section headings should be in lowercase, 11-points, regular letters and justified left, as shown in the heading to this sub-sub-section. Blank space 12-points (not a blank line) should be placed above, but not below.

Margins

The text area is to be 17.0 cm wide by 25.2 cm high. Table 1 presents the margin settings for A4 size paper (21 x 29.7 cm). It is important to adhere to these margins to ensure that your manuscript prints properly on the paper format from the Conference Proceedings.

Table 1. Page margins for manuscripts submitted to the IIR Conference

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Margin Position | Top | Bottom | Left | Right |
| A4 margin size | 2.00 cm | 2.50 cm | 2.00 cm | 2.00 cm |

Tables and Figures

Each table should be numbered (Table 1, Table 2, etc.), with the caption being placed above the table. Each figure should be numbered (Figure 1, Figure 2, etc.), with the caption being placed below the figure. In the text, figures and tables should be referred to as follows: “Figure 1 shows the relationship …” or “the measured values are given in Table 1.” Figures and tables should be inserted into the text soon after they are first referenced (as illustrated by Table 1).



Figure 1: Monthly electricity consumption

Equations and Symbols

Use the “Equation Editor” whenever possible. Equations should be centered, with the equation number flush with the right margin. If you are using the “IIR equation” style, this is accomplished by inserting tab characters before the equation number. An equation should be cited in the text with its number, for example, “…as shown in Eq. (1)”. Equations should be separated from the text above and below by a blank space, already predefined in the style.

Symbols used in equations should be explained directly within the paragraph they first appear or in a nomenclature section at the end of the manuscript. Symbols for physical quantities should be *italicized*. Exceptions are symbols for established dimensionless groups (e.g., Reynolds Number, Re), which should not be italicized. An example equation would be the ideal gas law:

$pV=RT$ Eq. (1)

where p is pressure in kPa, T is temperature in K, V is molar volume in m3.mol–1, and R is the gas constant. If few equations are used, the definition of symbols may follow each equation. Otherwise, the manuscript shall include a Nomenclature section where all symbols and abbreviations are explained. Use the international system of units (SI). Avoid use of the solidus (/), but present quantities in the denominator always with negative exponents. The units used should be given, if appropriate. For the Nomenclature section only, a two-column format may be used, if desired, to save space.

Use of “Styles” in Word of the IIR Conference Paper Template for Authors

The IIR Conference Paper Template for Authors with pre-created paragraph styles has been provided to help authors format their papers in Microsoft Word. We have prepared this template using Word’s “styles” feature. Styles are a very powerful tool that can greatly simplify the formatting of a manuscript, but we find that many authors are unfamiliar with their use. The basic idea is to define a “style” for each element in the paper—title, author list, section headings, text paragraphs, equations, references, etc. When preparing the manuscript, the author simply types (or pastes in from other sources) the appropriate words. Then, at the end, the vast majority of the formatting effort is accomplished by simply applying the appropriate “style” to the various elements. Alternately, authors can open this document in Word and replace the elements of this paper with their own material. For example, place your cursor over the names in the author list at the top of the paper, and type your name(s).

The appearance and location of the “Styles Gallery” and “Styles Pane” will vary depending on the version of Word that you are using. Within the Styles Pane, you can click on Options and specify that all styles “in use” be shown. All of the styles defined in this paper start with “IIR” followed by a descriptive word or two, such as “IIR TITLE.” A number of other standard styles, defined by Word itself, may also appear in the gallery. Refer to the topic “Apply styles” under the Help menu for more information on using styles.

CONCLUSIONS

The Conclusions section should list the major conclusions of the work and summarize the significance of the paper as clearly and concisely as possible.

ACKNOWLEDGEMENTS

A short section may acknowledge special assistance, such as financial aid, help of guiding technical committees, individuals, or other groups.

NOMENCLATURE

|  |  |  |
| --- | --- | --- |
| *p* | pressure (kPa) [Text Normal] | *R* molar gas constant (8.314472 J×mol–1×K–1) |
| *T* | temperature (K) | *V* molar volume (m3×mol-1) |

REFERENCES

Bibliographical sources should be cited within the paper by giving the last name(s) of the author(s) and the year of publication. The year should always be listed within parentheses. Author names may be listed within the narrative text or within parentheses, preceding the year of publication. The citations for Herbe and Lundqvist (1997) and Pearson (1996) provide examples for the format for a journal article and conference proceeding, or the citations could be (Herbe and Lundqvist, 1997) and (Pearson, 1996). In the case of a source with three or more authors, the citation could be Hirschfelder et al. (1967) or (Hirschfelder et al., 1967); only the name of the first author is cited in the text, but all authors are listed in the entry in the References section. The References section should be alphabetized by the last name of the first author.

The sources should be presented as follows:

Article from a periodical/journal: Surname(s) of the author(s), first name initial(s)., year of publication. Title of article. Title of periodical and abbreviated according to international standards, Volume number, issue number (between parentheses), first and last page.

Paper published in conference proceedings: Surname(s) of the author(s), first name initial(s)., year of publication. Title of article. Title of the conference, publisher of proceedings, first and last page.

Book: Surname(s) of the author(s), first name initial(s)., year of publication. Title of the book. Name of publisher, place of publication, number of pages. Establishments can be considered authors when they assume main responsibility for the text and their publications reflect their collective reflections or activities.

Book chapter: Surname(s) of the author(s), first name initial(s)., year of publication. Title of chapter. In: name(s) and initial(s) of the coordinator(s), title of the book, name of publisher, place of publication, first and last page.

Examples:

Duminil, M., 1995. Principes de la production du froid. In: Côme, D., Ulrich, R., La chaîne du froid – Le froid au service de l'homme, Hermann, Paris, 33-144. [Book chapter]

Herbe, L., Lundqvist, P., 1997. CFC and HCFC refrigerants retrofits. Int. J. Refrigeration 20(1), 49-54. [Article from a periodical]

Janna, S.W., 1986. Engineering Heat Transfer. PWS Publishers, Boston, 769 p. [Book]

Pearson, S.F., 1996. Uses of Hydrocarbon Refrigerants. Proceedings of the IIR Conference on Applications for Natural Refrigerants, Aarhus, Denmark, IIF/IIR, 439-446. [Paper published in conference proceedings]