

ECOS 2022: Manuscript Template

First Author^a, Second Author^b, Third Author^c and Fourth Author^d

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Abstract:

Manuscript submitted to ECOS Conference must describe original, previously unpublished work (in a journal or a conference with refereed proceedings), and must not be simultaneously submitted or be under review for publication elsewhere. Authors are kindly requested to prepare the manuscript using this template. If needed, detailed information on paper preparation can be found in Section 2.

Keywords:

Thermodynamics, Energy, ECOS Conference, Exergy, Sustainability.

1. Introduction

Papers that already appeared in unpublished or informally published workshop proceedings may be submitted (in this case please cite the prior publication in the list of references and contact the ECOS International Scientific chair for permission). Information on Ethics in Publishing and Ethical guidelines for journal publication see at: <http://www.elsevier.com/publishingethics> and <http://www.elsevier.com/ethicalguidelines>.

1.1. Platform submission

Authors are requested to submit their manuscripts ONLY via the DIS Eventure platform accessible from the Conference page <http://ecos2022.org/>. Registration of the Corresponding Author is needed to perform any upload. This registration is an Author Registration and does neither imply any obligation on the part of the Author, nor generate any charge. Conference Registration and the corresponding payment options can be finalized later through a different window, according to the schedule published on the site.

1.2. Information

Any doubts regarding the submission process should be sent to the local organization committee contact, through the e-mail <mailto:hdv@discongress.com>.

2. General information about ECOS 2022 papers

2.1. Manuscript preparation process

The manuscript must be prepared in English (British or American spelling) and should be free of grammatical, spelling and/or punctuation errors. The manuscript must be thoroughly edited and proofread before it is submitted. Authors have the responsibility to ensure clear and adequate English expression, since indecipherable language could be a valid reason for rejection of the paper.

Units in the paper must be according to the International System of Units (SI). Other units may be given in parentheses (when they first appear in the text), dual-unit tables, or an appendix.

Authors are requested to prepare the manuscript by using this template. **The manuscript length is limited to a mandatory maximum of twelve (12) pages.**

The template documents contain necessary information regarding desktop publishing format, type sizes, and typefaces. Formatting styles are classified in three groups:

- Character styles, indicated by prefix CS.
- List styles, indicated by prefix LS.
- Paragraph styles, indicated by prefix PS, (only Normal style and Title style do not have that prefix, but they still belong to this group).

2.2. Manuscript submission and review process

Authors are requested to submit their manuscript, with page numbers, as a Portable Document Format (PDF) file, with highest portability and quality options. Optionally, authors can be requested to submit the manuscript as $\LaTeX$ code if their PDF file does not fulfil the publishing standard of ECOS Conference proceedings.

For each submission that falls within the scope of the ECOS Conference, at least two independent experts in the field of the submission will be selected to act as reviewers. ECOS Conferences use a single-blind peer review process where the identity of the reviewers will remain anonymous but those of the Authors are public. The appropriate editor will assess the recommendation report from the reviewers as to whether the article should be accepted, revised or rejected. The submitted manuscript, subject to final acceptance on the basis of the Reviewers' report, will be included in the Conference Proceeding without any modifications.

3. Organization of paper

The basic parts of a paper are listed below in the order in which they should appear:

- Title (Section 3.1.).
- Author(s), author's (or authors') affiliation(s), Corresponding author identifier (Section 3.2.).
- Abstract and Keywords (Section 3.3.).
- Subject matter of the paper with numbered main headings and sub-headings (Section 3.4.).
- Acknowledgments, if any, (Section Acknowledgments).
- Appendices, if any, (Section Appendix A, Appendix B).
- Nomenclature with SI units, if any, (Section Nomenclature).
- References (Section References).

3.1. Title

The article title appears centred at the top of the first page. To format the title authors should use `\title`. Only the first word and proper nouns for the title should be capitalized. The use of acronyms and abbreviations in the title should be avoided, unless they are widely understood, or they are accompanied by the expanded expression.

3.2. Authors information

The list of authors follows just below the title. To avoid confusion, the family name must be written as the last part of each author name (e.g. Nikola Tesla, not Tesla Nikola, Ben Roethlisberger, not Roethlisberger Ben; Ming Yao, not Yao Ming). To format the author name(s) use `\author`.

Author details must not show any professional title (e.g. Managing Director), any academic title (e.g. Dr.) or any membership of any professional organization (e.g. Senior Member IEA). Each affiliation must include, at the very least, the name of the institution, city, country and e-mail addresses. For multiple affiliations, each affiliation should appear on a separate line. Author names and affiliations are linked with superscripts. To format the affiliations use `\address`. Corresponding author identifier (**CA**) should be put after the e-mail address of the corresponding author selected only. This information is compulsory for the submission process.

3.3. Abstract and keywords

The abstract and keywords follow the title and author information. The headings, Abstract and Keywords do not have a section numbers. The Abstract section should consist of a single paragraph containing no more than 300 words, and should be formatted by `\abstract`. Abbreviations and acronyms should be expanded when they appear for the first time in the abstract. Keywords (`\keywords`) are usually composed of a bout five terms or phrases in alphabetical order. The first letter of each keyword or keyword phrase should be capitalized; the keywords or phrases should be separated from one another by semi-colons, with a period (full stop) following the last one.

3.4. Subject matter of the paper with numbered main headings and sub-headings

The subject matter (body) of the paper should be composed of main sections, each preceded by a main heading (`\section`), and subsections, each preceded by a subheading (first level `\subsection`, second level `\subsubsection`, third level `\paragraph`). Numbered Headings (in Arabic numerals) consist of:

- Section number followed by a period.
- Sub-section number within that section, followed by a period.
- One space.

- Text of the heading.

Only the first word and proper nouns for the text of the heading should be capitalized. Main headings of sections Nomenclature, References, Acknowledgments and Appendix are unnumbered by using `\section*`.

Paragraphs that follow the headings should not be indented. For body text of the paper no formatting should be applied. During the text preparation authors may:

- Manually format any special text that needs to be italicized, bolded, subscripts or superscripts. For emphasis the boldface should be used, while underlining is not recommended in the manuscript. The use of different fonts for special purpose should be avoided.
- Authors should use the manual hyphenation command to have uniform spacing between the words. Automatic hyphenation should not be used.

Abbreviations and acronyms should be expanded when they appear for the first time in the text, even if they have already been defined in the title or abstract. Abbreviations that incorporate periods should not have spaces: write “C.N.R.S.,” not “C. N. R. S.” Chemical compounds should be named according to the rules of the IUPAC or Chemical Abstracts.

Footnotes should be kept to a minimum and used only for substantial observations. In this case authors should use `\footnote`. Endnotes should not be used at all.

3.4.1. The use of landscape format space

In the case that some object (figure or table) is not legible enough – or is exceptionally big – to be contained in the proposed page format, authors may place the object in the following landscape page.

Landscape format of a page may be obtained by use of dedicated $\text{\LaTeX}$ packages.

Authors are strongly advised to spare the use of landscape pages.

3.4.2. Displayed list: Bulleted list and number list

A displayed list is a list that is set off from the text, as opposed to a run-in list that is incorporated into the text. There is no strict rule when to create a displayed list, but within the text lists should not have more than three items. For example, within the text lists would appear: 1) using a number, 2) followed by a closing parenthesis.

The bulleted list should be defined with the `itemize` environment like below:

- Use a colon to introduce the list.
- The template uses predefined bullets instead of checks, arrows, etc. for bulleted lists.
- Tab spacing within the lists is also predefined.

The numbered list with the `enumerate` environment:

1. Use a colon to introduce the list.
2. Labels should not be numbers enclosed in parentheses because such labels cannot be distinguished from equation numbers.
3. Tab space between symbol and text is 0.5 cm.

If more depth within the list is needed, lists can be nested.

- Top level
 - Second level

3.4.3. Equations and expressions

Equations should be centered in a separate line with spacing before and after, with use of `equation` environment. Applying the proposed environment ensures that equations will be numbered automatically with Arabic numbers in parentheses.

$$y = a_j x_j + (a_j b_j + \epsilon_j) \quad (1)$$

A recommended order of closures for parenthesis, brackets and braces, is the following:

$$\{[(...)]\} \quad (2)$$

Authors should refer to equations in the text by (1), not by “Eq. (1)” or “Equation (1)” except at the beginning of a sentence: “Equation (1) is used. . .”. If there are chemical formulae included, i.e. reactions, please number them (R1), (R2), etc. Complicated chemical structures should ideally be prepared with chemistry drawing software (e.g. ChemDraw, Chem Windows, ISIS/Draw) and treated like figures.

Expressions which are simple, short, and not of major importance can be left in the text, and written in one-line form (e.g., use $\beta = a/b$ for fractions). For expressions within a line of text authors should use regular text and the symbols like:

- For binary operations:
 - Plus sign (+).
 - Minus sign (−).
 - Multiplication sign (·) or (×).
 - Fractional sign slash / or division sign (÷).
 - Composition sign (°), also degree sign.
- For binary relations =, ≠, <, > and |.

Symbols in equations and expressions must be defined in the Nomenclature, or in some cases immediately following them.

3.4.4. Figures and Tables

Figures and tables are most effective when they are clear, self-explanatory, accurate, easily understood and remembered. In general, tables and figures should have enough explanation in their captions to stand alone.

Tables and figures (graphs, charts, drawing, and photographs) must be embedded in the document. They should be placed between paragraphs, after (or near) their first mention in the text. Note that the arrangement of the elements may slightly change after applying all the text formatting.

Figure captions have to be placed **below** the figures and table titles have to be placed **above** the tables. Authors should include a minimum of one sentence summarizing what the figure/table shows or illustrates in the text; also verify that the figures and tables mentioned in the text actually exist.

All of tables and figures should be numbered consecutively and captioned; the caption should be 10pt Roman, upper and lower case letters.

3.4.4.1 Figures

The recommended font in artwork is Arial, same size as the text. Figure lettering should be large enough to be legible when the size of the drawing is reduced. Axis titles on graphs must be labelled with words rather than symbols. As an example, the vertical axis in Fig. 1 is labelled as the quantity “Pressure” or “Pressure, p_1 ” not just “ p ” or “ p_1 ”. Units should be put in parentheses.

If a figure has two (or more) parts, authors should include labels “(a)”, “(b)” as part of the artwork. Figures are going to be reproduced in colour in the electronic versions of the Proceedings, but in the journals they will be printed in black and white. Therefore, distinctions have to be used so that images can still be understandable in black and white printings.

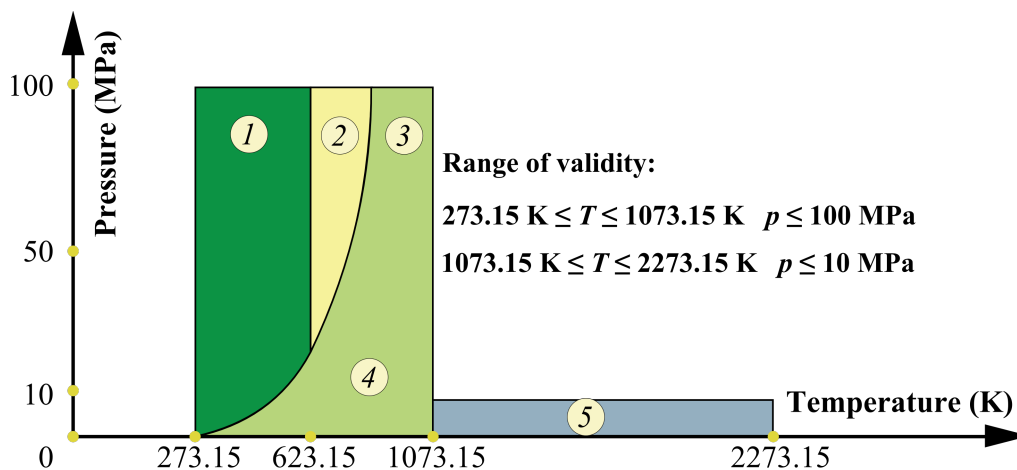
For easier manuscript preparation authors are advised to create separate figure files and convert them into proper file format. For ECOS proceedings TIF, JPG, GIF, PNG (raster artwork) and EPS, PDF (vector artwork) are the preferred formats. It is important to understand that the non-preferred formats are not ideally suited to high-quality image reproduction, and are not acceptable for conversion to a paper that may be considered for archival journal publication.

Before inserting in the document each figure should be:

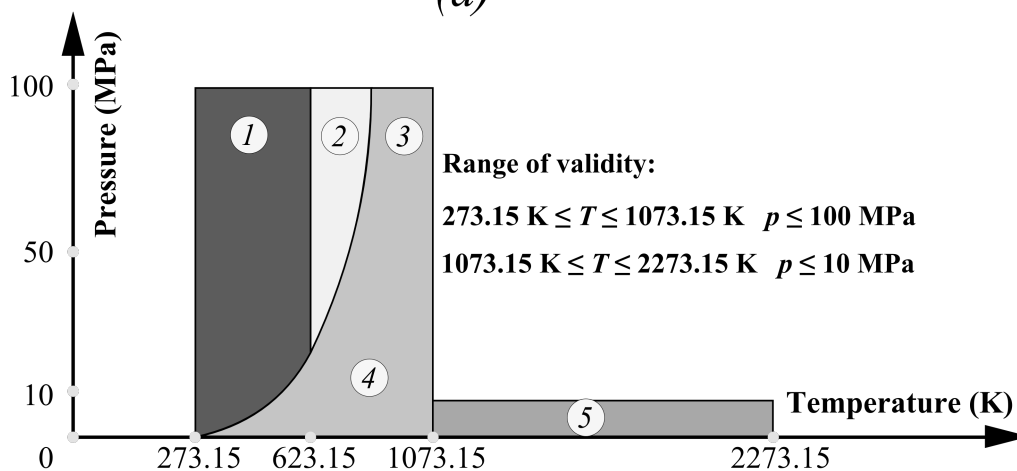
- Prepared as simply as possible for clarity. Avoid sideways illustrations if possible.
- Sized to the desired final dimensions in order to minimize the final document file size.
- Prepared with at least 300 dpi resolutions for raster artwork (greyscale and colour halftones), 600 dpi for combinations (line art and halftone together) and 1200 dpi for line art.

To embed (insert) images, prepared in separate files, authors should use *figure* environment. If the authors are providing scanned figures, they have to be clear, with all the legends and data labels easily readable. If this is not possible, the author must redraw the figures especially in the case of simple ones. Illustrations borrowed or adapted from another source have to be properly acknowledged. Figure caption should be below the figure.

When a figure is referred to in the text, it should be typed as Fig. 1 or Figs. 2 to 4, with “Fig.” capitalized and abbreviated (unless it is the first word in a sentence) and without period at the end (unless the reference appears at the end of a sentence).



(a)



(b)

Figure 1: Use of appropriately contrasted colours for black and white printing: a) colour figure, b) greyscale figure.

3.4.4.2 Tables

All tables should be prepared using the `table` environment. Tables should be numbered consecutively and captioned, the caption should be 10pt Roman, upper and lower case letters. Table caption should be above the Table.

Tables should be as simple as possible, with single horizontal lines above and below column headings and subheadings, and at the bottom of the table (if it is necessary the authors may put horizontal lines between the rows). Limit the number of columns to fewer than 10, since the use of many columns will create readability problems. Vertical lines and shaded areas should be avoided where possible. Fancy frames or borders around tables should not be used.

When Tables are referred to in the text, they should be typed as Table 1 or Tables 2 to 4. Authors should not abbreviate “Table” and should not put a period after the number, unless the reference appears at the end of a sentence.

Acknowledgments

Any acknowledgments authors wish to make should be included in a separate section with normal formatting, at the end of the main text and before the appendix (if any), nomenclature and references section. This section starts with headings Acknowledgments.

Appendices should be entered in the appendices.

Table 1: Table format in ECOS: Template for manuscripts

Month	$\rho_{cs}, \%$	$\rho_{ps}, \%$	$\rho_{os}, \%$
JAN	5.88	36.88	57.24
FEB	6.79	45.65	47.57
MAR	5.48	40.40	54.12
APR	16.39	51.58	32.03
MAY	11.18	45.27	43.55
JUN	12.87	33.68	53.45
JUL	15.94	40.45	43.62
AUG	6.10	50.22	43.68

Appendix A Adding Detailed Explanations

Technical detail deemed necessary for a better understanding, but that interrupts the flow of the article, may be consigned to an appendix. Appendices are enumerated with upper-case Latin letters in alphabetic order (A, B, C...). Equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1; Table B.1a; Fig. B.1a, etc.

x

(3)

Appendix B Formatting Specifications

The $\text{\LaTeX}$ formatting of the ECOS 2022 template is provided in the ECOS_2022.c1s file.

Nomenclature

It is strongly recommended to include a separate Nomenclature section using `\section*`. The Section starts with heading Nomenclature. This section lists in detail all the symbols used in the text and their definitions. The list should include:

- Letter symbol; each symbol used in a paper should have a unique definition.
- Accurate and concise definition of the symbol. Definitions do not require “the” and are followed by comma and one space.
- Units of measure used in the paper. No end punctuation in nomenclature.

All Letter symbols (dimensional and dimensionless) should be listed in alphabetic order. Letter symbols are followed by Greek symbols, subscripts and superscripts. These two sections are under the separate subheadings `\subsection*`.

- Letter symbol; each symbol used in a paper should have a unique definition.
- Accurate and concise definition of symbol. Definitions do not require “the” and are followed by comma and one space.
- Units of measure used in the paper. No end punctuation in nomenclature.

All Letter symbols (dimensional and dimensionless) should be listed in an alphabetic order. Letter symbols are followed by Greek symbols, subscripts and superscripts.

Example

- c specific heat, J/(kgK)
- h heat transfer coefficient, W/m²K
- $\dot{m}$ mass flow rate, kg/s
- t temperature, °C

Greek symbols

- η efficiency

ϕ maintenance factor

Subscripts and superscripts

a Air

Citations

Authors should acknowledge the referenced sources (either from a printed document or from the web) whenever they:

- Paraphrase or summarize another person's ideas or points.
- Quote another person's work.
- Use information from any source, including information contained in tables, graphs, figures or diagrams.

ECOS uses the numeric system of referencing, according to the conventions set down in the Vancouver/Numeric style. References to cited literature should be numbered consecutively throughout the paper and collected together in a section References. In the text, each reference number (Arabic numerals) should be enclosed in square brackets in the same line as the text ([1], [3]), before any punctuation such as: full stops, commas, colons and semi-colons. Author should refer to the reference number, and do not use "Ref. [4]" or "reference [4]" except at the beginning of a sentence: "Reference [4] was. . ." When multiple references are cited at a given place in the text, author should:

1. Use a hyphen to join the first and last numbers that are inclusive: [3–6].
2. Use commas (without space) to separate no inclusive numbers in a multiple citation [3–6, 8].

A reference to a particular article or chapter in a book may be cited in the text multiple times but must only appear once in the reference list. During the text preparation authors are encouraged to:

- Substitute reference numbers for the name of the author whenever appropriate:
 - As Smith, Wesson and Ruger, and Williams et al. demonstrate, **incorrect**.
 - As [1], [3], and [4] demonstrate, **correct**.
 - As Smith [1], Wesson and Ruger [3], Williams et al. (for more than 2 co-authors) [4]. **correct**.
- Place numbers directly after the reference rather than at the end of a clause or sentence, (unless the reference ends at the end of a clause or sentence).
 - One study examined the energy efficiency in . . . [1], **incorrect**.
 - One study [1] examined the energy efficiency in . . . , **correct**.

Authors must provide a full description of each source which has been cited in the text in a reference list. The information must be sufficient to make it possible for interested readers to easily locate and obtain the source. The references should be listed in the same order as cited in the text, not in alphabetical order.

References to electronic data available only from personal Web sites or commercial, academic, or government ones where there is no commitment to archiving the data, should be avoided. Depending on the circumstances, private communications, Web site addresses, citations like "In preparation" and "To be submitted" may be incorporated into the main text of a paper or may appear in appendix. The following examples demonstrate the format for a variety of types of references.

Citations should be given according to the examples in the section References for articles in journals ¹ [1], [2] and proceedings [3], chapter in book [4] as well as for books [5], technical reports [6], dissertations [7] and web available sources [8].

References

- [1] Sciacovelli A., Verda V. *Entropy generation analysis in a monolithic-type solid oxide fuel cell (SOFC)*. Energy 2009;34(7):850-65.
- [2] Yapici H., Kayatas N., Albayrak B., Basturk G., *Numerical calculation of local entropy generation in a methane air burner*. Energy Convers Manage 2005;46:1885-919 ².

¹ Journal titles can be abbreviated, see URL: <http://www.efm.leeds.ac.uk/mark/ISlabbr/>.

² If a journal carries continuous pagination throughout a volume the month and issue number may be omitted.

- [3] Bolliger R., Favrat D., Maréchal F., *Advanced Power Plant Design Methodology using Process Integration and Multi-Objective Thermo-Economic Optimisation*. In: Kjelstrup S., Hustad E., Gundersen T., Røsjorde A., Tsatsaronis G., editors. ECOS 2005: Proceedings of the 18th International Conference on Efficiency, Cost, Optimization, Simulation, and Environmental Impact of Energy Systems; 2005 Jun 20-25; Trondheim, Norway. Tapir Academic Press:777-84.
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- [8] National Institute of Standards and Technology. *NIST-JANAF Thermochemical Tables* Available at: <http://kinetics.nist.gov/janaf/> [accessed 12.3.2008].