

Reasons for desk rejection

- 1) The manuscript is not well-formed and is missing critical items: highlights, abstract, method, conclusions
- 2) Lack of state-of-the-art review
- 3) Lack of state-of-the-art analysis
- 4) Lack of a conceptual overview and scientific hypothesis at the beginning of the methodological sections
- 5) Lack of clear (reasoned) statement of the significance of the presented work in the conclusion section – linked to the state-of-the-art claim at the end of the introduction
- 6) Low quality of any of the sections – see the guide that follows.

Guide for writing scientific articles

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List of acronyms that are considered well-known and can be used (not exclusive, can be extended)

CEO	Chief Executive Officer
CO ₂	Carbon Dioxide (make sure the 2 is subscript)
DNA	Deoxyribonucleic acid
EU	European Union
GHG	Greenhouse Gases
ISO	International Organization for Standardisation
LCA	Life Cycle Assessment
NGOs	Non-governmental organisations
NO _x	Nitrogen Oxides
OECD	Organisation for Economic Co-operation and Development

¹ The current document provides an annotated guide for composing scientific articles. It expresses the personal experience and opinion of the author of this guide.

SD	Sustainable Development		
SME	Small and Medium size Enterprises UN	United Nations	
UNEP	United Nations Environment Programme		
UNESCO	United Nations Educational, Scientific and Cultural Organization		
UNICEF	United Nations Children’s Fund		
UNRISD	United Nations Research Institute for Social Development		
UK	United Kingdom of Great Britain and Northern Ireland		
USA	United States of Americ		
CHP	Combined Heat and Power		

[Highlights – Elsevier journals only]

Please add highlights to the article. This is mandatory. Please observe the following rules:

- Follow the pattern [problem definition] -> [concept] -> [action] -> [results] -> [significance] (5 items).
- Keep the highlights concise – the required upper limit is 85 characters per item. For detailed instructions please refer to the guide for authors. Please make sure not to introduce any uncommon acronyms.
- Do not repeat the title in the highlights – it is unnecessary and creates the impression that you have nothing to say.
- Make the items specific to your current work – generic statements that do not need research are not appropriate.

[Abstract]

Please follow strictly the general pattern of abstract composition (generally, the same parts as for highlights, but a little more descriptive): problem formulation, concepts, actions taken, results obtained, significance/state of the art contribution.

Please avoid acronyms in the title, the highlights and in the abstract, unless they are very common – like CHP for “Combined Heat and Power”. Acronyms make these paper parts unclear.

[Introduction]

The introduction section should start with the general topic introduction.

Next follows the state of the art overview. This is a review of literature sources and other previous works, which are described, summarised and analysed. The analysis goal is to clearly show the progress of the current work beyond the state of the art. The lack of proper justification creates the wrong impression that the authors are unaware of the recent developments. Please use relevant recent references by OTHER authors. For the year of manuscript submission 2023, recent means 2021 – 2023.

After the overview, it is necessary to connect the state of the art to your paper goals. Please follow the literature review by a clear and concise state of the art analysis. This should clearly show the knowledge gaps identified and link them to your paper goals. Please reason both the novelty and the relevance of your paper goals.

Please do not lump references. Instead, characterise each reference individually. This can be done by mentioning 1 or 2 phrases per reference to show how it is different from the others and why it deserves mentioning. This is not just a formalism. Having reference lumps in the text casts a serious doubt on whether the authors have really read and understood the cited sources. If you do not characterise the references individually it matters little how they are formatted. What really matters is to have meaningful references and the requirement for individual characterisation aims exactly at that. Even the small lumps leave something unsaid and reduce the quality and impact of the paper.

[Methodological sections]

This should start with a description of the scientific hypothesis, concepts and the relevant reasoning for choosing the particular modelling approach. This should be accompanied by an overall description of the followed procedure. The model description and any log of investigative/experimental actions should follow that. The methods proposed in the paper may include the following modelling elements:

- Assumptions
- Mathematical formulation – sets, constants, variables, equations, etc.
- Algorithms treating the other modelling elements

The model has to be presented clearly. Please avoid just listing the equations and defining the variables, stopping at that. For each equation please add a concise explanation including the reasoning for its definition, how does it work internally and how does it work within the model context. Same goes for the algorithms.

When describing a method, only providing a current system design and modelling equations is not sufficient. In the process of presentation, any modelling element (e.g., equation, design, diagram) developed for the current study has to be clearly declared as such and any other modelling elements should be accompanied with references where these elements have been borrowed from. In the process, please be careful to avoid copyright violations.

[Case studies – 1 or several]

The case studies are used for two possible purposes:

- (a) Validate your models and methods – adequacy, accuracy, modelling behaviour
- (b) Illustrate the applicability of the methods and the extent of the obtainable results

One should use any of the parts as applicable to the presented work.

[Optional: Discussion and analysis]

In many cases, the discussion of the methods and the case study results can be integrated into the case study section. However, in the case of more than one case study, a separate section on the discussion and analysis may be appropriate. In this section, the results can be summarised and analysed, keeping the discussion strictly within the validation and demonstration contexts.

[Conclusions]

In the conclusions, in addition to summarising the actions taken and results, please do explain their significance. It is recommended to use quantitative reasoning comparing with appropriate benchmarks, especially those stemming from previous work.

[References]

Please follow the instructions given in the guide for authors of the journal targeted by you. Normally, every journal has such a guide.

[Nomenclature]

This is a necessary section in the case that the article features notations and symbols for mathematical models, or any abbreviations. All such elements have to be listed in this section and their meaning clearly defined. For measurable quantities, the measurement units should be given. Generally, the SI units are recommended, unless the specific journal has other requirements – that has to be checked before each submission, consulting the guide for authors of the specific journal.

In some cases, as it is in the case of industrial utility systems and other chemical processes, the quantities may be expressed in custom measurement units, differing from any of the standardised unit sets used in the World. This is, for example the case of steam flows, which are frequently expressed in t/h, while the SI unit for this is kg/s. In such cases, it may be good to give the custom units used in the respective engineering field, but also to provide the value in SI units, added in parentheses. These decisions should be made after careful consideration of the journal, maybe even consulting previously published articles in this journal, especially for the period of the last 2 years before the current manuscript is submitted.