



TABLE OF CONTENTS

●	Description	p.1
●	Impact Factor	p.2
●	Abstracting and Indexing	p.2
●	Editorial Board	p.2
●	Guide for Authors	p.3



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DESCRIPTION

The *Journal of Chemical Thermodynamics* exists primarily for dissemination of significant new knowledge in experimental **equilibrium thermodynamics** and transport properties of **chemical systems**. The defining attributes of The Journal are the quality and relevance of the papers published.

The Journal publishes work relating to gases, liquids, solids, polymers, mixtures, solutions and interfaces. Studies on systems with variability, such as biological or bio-based materials, gas hydrates, among others, will also be considered provided these are well characterized and reproducible where possible. Experimental methods should be described in sufficient detail to allow critical assessment of the accuracy claimed.

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622860jct.gif

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INTRODUCTION

General

Please consult this Guide for Authors for further details on the requirements for submitting your paper to *The Journal of Chemical Thermodynamics*. The guidelines described in this document, as well as those listed in the JCT Style Notes, should be carefully adhered to ensure high-quality and rapid publication of your manuscript.

Aims and Scope

The Journal of Chemical Thermodynamics exists primarily for dissemination of significant new measurements in experimental thermodynamics and thermophysics including bio-thermodynamics, calorimetry, phase equilibria, equilibrium thermodynamic properties and transport properties.

The Journal publishes work relating to gases, liquids, solids, mixtures, solutions, interfaces, including polymers and biological materials, provided that the systems studied are characterised and reproducible.

The defining attributes of The Journal are the quality and relevance of the papers published. Authors are expected to describe their methods and present their results in sufficient detail to allow critical assessment of the accuracy claimed.

Further, The Journal welcomes theoretical papers reporting on thermodynamics using molecular theory or modeling, provided the relationship with experiment is clearly described. Review articles will also be considered but prospective authors should first consult one of the Editors concerning the suitability of the proposed review.

Experimental measurements of a routine nature or those conducted on uncharacterised materials are not accepted.

The Journal of Chemical Thermodynamics, along with other journals in the field, cooperates with the Thermodynamics Research Center (TRC) of the National Institute of Standards and Technology (NIST) for the purpose of ensuring the quality of published experimental data. This collaboration relates to articles that report experimental measurements falling within the scope of the NIST ThermoML Archive (<http://www.trc.nist.gov/ThermoML.html>) and has two elements. First, upon submission of an article, NIST will provide a literature report to the authors and reviewers containing relevant references from the NIST Data Archive. Second, NIST will provide a data evaluation at the end of the review process immediately prior to acceptance of the article. This data evaluation will compare the reported experimental data with that existing in the NIST Data Archive and highlight any unexpectedly large discrepancies such as those arising from typographical errors. In order to facilitate the necessary electronic data capture, the experimental results and their uncertainties must be tabulated as described in this Guide (see also <http://trc.nist.gov/JCT-Support.html>).

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Divide the article into clearly defined sections.

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Introduction

State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Experimental

Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.

Results

Results should be clear and concise.

Discussion

This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.

Conclusions

The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices

If there is more than one appendix, they should be identified as A, B, etc. Formulae and 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, etc.

Style Requirements

Symbols, Units and Equations

1. Symbols and terminology must follow the recommendations of IUPAC (see: Quantities, Units and Symbols in Physical Chemistry, third ed.; RSC Publishing, Cambridge 2007, ISBN 0 85404 433 7).

2. SI units should be used throughout.

3. The algebra of quantities must be followed. Accordingly, the symbol for a physical quantity represents a pure number multiplied by a unit or combination of units.

4. Each physical quantity must be represented by a single symbol which may be decorated with subscript or superscript characters.

5. The symbol for a physical quantity must appear in italic or sloping type, even when the symbol appears in a subscript or a superscript. Conversely, symbols not designating a physical quantity should appear in Roman or upright type: e.g. YJCHT_ST_1.JPG represents the perfect-gas molar heat capacity (italic 'p' for pressure, Roman 'm' for molar).

6. Symbols should be defined in the text when they are first used, and also in figure and table legends.

7. Equations must always be dimensionally consistent. Equations used to correlate experimental data may be best in a dimensionless form.

Example

YJCHT_ST_2.JPG

8. The arguments of logarithmic, exponential and trigonometric functions must be dimensionless: e.g. $\ln(p/\text{MPa})$ or $\ln(p/p_0)$ but not $\ln(p)$.

9. Equations, when displayed, should be centred and numbered, flush right, in parenthesis eg

YJCHT_ST_3.JPG (1)

10. Always puncture after an equation to place it correctly within the sentence that contains it (see example above).

11. Wherever possible set equation and expressions on a single line: e.g.: dp/dT not YJCHT_ST_4.JPG

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12. When reporting experimental results, the uncertainty of each measured quantity should be reported and combined in quadrature to obtain the uncertainty of any derived quantities (see <http://physics.nist.gov/cuu/>).
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15. Plot each figure in a full rectangular (or triangular) frame.
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17. All lettering to be in 12-point Times Roman or similar typeface.
18. Lettering should be used to specify the scale and axis labels only. All legend material should be provided in a separate figure caption and not shown on the figure itself. Exceptionally, multi-part figures may be labelled (a), (b) etc.
19. Only dimensionless quantities should be plotted. Axis labels must therefore be dimensionless expressions presented in correctly-formatted symbols: e.g. T/K ; not T (K) or Temperature/K. All symbols must be defined in the accompanying caption.
20. Fractional deviations and similar quantities should be plotted as, e.g., $102(X-XC)/XC$; do not use 'ppm', 'per cent', '%' or similar abbreviations.
21. Plotting symbols only should be used to represent experimental data or discretely computed quantities. Smooth lines or curves only should be used to represent values computed from formulae or other continuous data (e.g. g.l.c. trace).
22. Avoid the use of colour in graphs; data sets should be distinguished by symbol or line styles only. Exceptionally, essential colour illustrations may be included.
23. Similar figures should be plotted in identically-sized frames.
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25. Include error bars where appropriate but only when they exceed the size of the plotting symbols.

Example figure and legend text

YJCHT_ST_5.JPG

FIGURE 1. (a) Densities ρ of pentafluoroethane at temperatures T : \square , saturated liquid; \bullet , saturated vapour; -----, saturated vapour and liquid calculated from Eq. (4). (b) Deviations of experimental saturated liquid densities ρ_1 from values ρ_{calc} calculated from Eq. (4).

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26. Number tables consecutively in accordance with their appearance in the text.
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Example table and legend text

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34. All chemical samples must be identified by IUPAC systematic name and the following details should be provided: sample source, initial purity, method of purification, final purity (as used) and analytical method used to determine the purity. Preferably, all of these details should be provided in a table (see <http://trc.nist.gov/JCT-Support.html>).

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A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

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[1] J. van der Geer, J.A.J. Hanraads, R.A. Lupton, The art of writing a scientific article, J. Sci. Commun. 163 (2010) 51–59.

Reference to a book:

[2] W. Strunk Jr., E.B. White, *The Elements of Style*, fourth ed., Longman, New York, 2000.

Reference to a chapter in an edited book:

[3] G.R. Mettam, L.B. Adams, How to prepare an electronic version of your article, in: B.S. Jones, R.Z. Smith (Eds.), *Introduction to the Electronic Age*, E-Publishing Inc., New York, 2009, pp. 281–304.

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