

# Guide for Authors

## 1. General

Please consult this Guide for Authors for further details on the requirements for submitting your paper to *Thermochimica Acta*. The guidelines described in this document should be adhered to carefully, to ensure high-quality and rapid publication of your manuscript. All information for authors can be found online at the Journal's website, <http://www.elsevier.com/locate/tca>.

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### Aims and Scope of *Thermochimica Acta A*

*Thermochimica Acta* publishes original research contributions covering all aspects of thermoanalytical and calorimetric methods and their application to experimental chemistry, physics, biology and engineering. Specific areas of research include:

- instrumentation and theory of instrumentation
- new and improved methods of investigation
- analysis and interpretation of research data
- fundamental research and industrial application.

Papers from new emerging areas of the field are particularly welcome. The journal publishes *regular articles*, *communications* (novel, unexpected experimental results or interpretation presented within four printed pages), and *feature articles* (usually invited by the Editors).

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## 3. Guidelines for text files and formats

Most word-processing formats are accepted (ideally Microsoft Word or WordPerfect). Please check the current style of the journal, particularly the reference style, and avoid excessive layout styling as most formatting codes will be removed or replaced during the processing your article. In addition, do not use options such as automatic word breaking, justified layout, double columns or automatic paragraph numbering (especially for numbered references). However, do use bold face, italic, subscripts, superscripts, etc. When preparing tables, if you are using a table grid, please use only one grid for each separate table and not a grid for each row. If no grid is being used, use tabs to align columns not spaces. Footnotes to tables should be typed below the table and should be referred to by superscript lower case letters. No vertical rules should be used. Tables should not duplicate results presented elsewhere in the manuscript (e.g., in graphs).

Submission of a paper implies that it is an original research work which has not been published previously, that it is not under consideration for publication elsewhere, and that if accepted it will not be published elsewhere in the same form, in English or in any other language, without the written consent of the Publisher.

## 4. Manuscript preparation

**General:** All pages must be numbered consecutively. Tables, schemes and figures should be inserted into the main text or, if this is not possible, added at the end of the manuscript. Sequences of tables, figures and schemes should be numbered with Arabic numerals.

**Language and style:** Manuscripts should be written in English in a clear and concise manner and follow the style of a current issue of *Thermochimica Acta*. International Science Editing and Asia Science Editing can provide English language and copyediting services to authors who want to publish in scientific, technical and medical journals and need assistance *before* they submit their article or, *before* it is accepted for publication. Authors can contact these services directly: International Science Editing (<http://www.internationalscienceediting.com>) and Asia Science Editing (<http://www.asiascienceediting.com>) or, for more information about language editing services, please contact [authorsupport@elsevier.com](mailto:authorsupport@elsevier.com) who will be happy to deal with any questions.

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**Title:** The title should be concise, informative and representative of the contents of the manuscript.

**Author(s) and Affiliation(s):** Full affiliations and postal addresses must be given for all authors. An asterisk should designate the author to whom correspondence is to be addressed and a footnote must provide their full e-mail address, fax and telephone numbers.

**Abstract:** An abstract of approximately 100–150 words identifying the new and significant results of the study must be provided for all manuscripts, including articles, reviews, and communications. The abstract should comprise a brief and factual account of the contents and conclusions of the paper as well as an indication of any new information presented and its relevance. Abstracts should be self-contained.

References to formulae, equations or reference that appear in the main text are not permissible.

**Keywords:** A maximum of six keywords are required for indexing purpose.

**Text:** The main text should include introduction, experimental section, results, discussion and conclusion. All footnotes (except for table footnotes) should be identified with superscript Arabic numbers. Headings and subheadings for different sections of the papers should be used and clearly identified. If each section needs to be numbered, a sequence such as 2., 2.1., 2.1.1., etc. should be used. All tables and figures must be mentioned in the text. Trade names should have an initial capital letter.

For full-length manuscripts, a proper *introduction* is required. The purpose of the introduction is to briefly summarise previous work and recent progress in the field and not to repeat information found in previous publications. The introduction must be kept to a minimum length and only references that pertain to the information in the manuscript should be used. For shorter articles, introductions should be correspondingly brief.

The *experimental section* should provide sufficient detail of the materials, methods and equipment to allow repetition of the work elsewhere, but should not contain excessive detail of commonly used procedures. Precautions for handling dangerous material or for performing hazardous procedures should be explicitly stated.

**Theory and/or calculation:** A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis. Include in figure legends and table texts technical details of methods used, while describing the methods themselves in the main text.

**Results:**

**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 forth.

**Acknowledgements:** Place acknowledgements, including information on grants received, before the references, in a separate section, and not as a footnote on the title page.

**References:** Responsibility for the accuracy of bibliographic citations lies entirely with the authors.

- Citations in the text: Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications should not be in the reference list, but may be mentioned in the text. Citation of a reference as ‘in press’ implies that the item has been accepted for publication.

- Citing and listing of web references: As a minimum, the full URL should be given. Any further information, if known (author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

- Text: Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.

- Example: “... as demonstrated [3,6]. Barnaby and Jones [8] obtained a different result . . .”

- List: Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

Examples:

Reference to a journal publication:

[1] J. van der Geer, J.A.J. Hanraads, R.A. Lupton, *J. Sci. Commun.* 163 (2000) 51–59.

Reference to a book:

[2] W. Strunk Jr., E.B. White, *The Elements of Style*, third ed., Macmillan, New York, 1979.

Reference to a chapter in an edited book:

[3] G.R. Mettam, L.B. Adams, in: B.S. Jones, R.Z. Smith (Eds.), *Introduction to the Electronic Age*, E-Publishing, Inc. New York, 1994, pp. 281–304.

Journal names should be abbreviated according to CAS (Chemical Abstracts Service): <http://www.cas.org/>.

**Units:** All measurements and data should be given in SI units.

**Symbols:** It is helpful to identify Greek symbols by name in the margin the first time they appear. Abbreviations and acronyms should only be used for unwieldy terms and names that occur frequently in the manuscript.

**Maths:** Detailed mathematical discussion should be placed in an appendix. Equations and formulae should be typewritten. Present simple formulae in the line of normal text where possible. Variables are to be presented in italics. Use the solidus (/) instead of a horizontal line, e.g.,  $X_p/Y_m$ .

Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separate from the text (if referred to explicitly in the text).

**Nomenclature:** Nomenclature should conform to current scientific usage. Author(s) should use systematic names similar to those used by Chemical Abstracts Service and the International Union of Pure and Applied Chemistry. Chemical Abstracts (CA) nomenclature rules can be found in Appendix IV of the Chemical Abstracts Index Guide.

**Thermal analysis data:** Please see Appendix A for recommendations for reporting thermal analysis data. These should be adhered to as much as possible.

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10.1016/j.physletb.2003.10.071

## 5. Preparation of electronic illustrations

Illustrations can be prepared in black and white, grayscale or colour. Only use colour if it is necessary to convey a scientific message; else it should be avoided. Colour artwork will be published without cost to the authors subject to the discretion of the Editor, and provided the artwork is of sufficient quality. If, together with your accepted article, you submit usable colour figures then Elsevier will ensure, at no additional charge, that these figures will appear in colour on the web (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in colour in the printed version. Consider the page format of the journal when designing the illustrations.

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## Appendix A. Brief recommendations for reporting thermal analysis data

Because thermal analysis techniques involve the measurement of some system parameter as a function of temperature [1], it is essential that all experimental details be given in the typescript. The reports of the Nomenclature Committee of the International Confederation for Thermal Analysis (ICTA) [2,3] and the recommendations of McAdie [4,5] should, in general, be adhered to as far as typescript space permits. Some of the recommendations are briefly summarized here; for further information the original references should be consulted.

- (1) Identify all materials by a definitive name, an empirical formula, or equivalent compositional data.
- (2) State the sources of all materials, their chemical purities, and other pertinent data.
- (3) Give the furnace heating rate over the temperature range of interest.
- (4) Identify the sample chamber atmosphere by pressure, composition and purity. The conditions of atmosphere control (static, dynamic or self-generated) should be specified.
- (5) Label the abscissa in temperature units or time.

In reporting TG data:

- (6) Give the type of thermobalance employed, including the manufacturer's name and the instrument model number.
- (7) Mass loss should be plotted as a downward type curve either in mass or percent mass units.

In reporting DTA data:

- (8) Give the type of instrument employed, including the manufacturer's name and the instrument model number.
- (9) Report the sample preparation and dilution, and also the reference material employed.
- (10) The ordinate scale should indicate the temperature difference between sample and reference sample  $T = TS - TR$ . Preferred plotting for endothermic reactions consists of downward deflection of the curve peaks, and exothermic reactions as upward deflections. In addition, authors must make clear the sign convention they are using.

In reporting DSC data:

- (11) Give the type of instrument employed, including the manufacturer's name and the instrument model number.
- (12) The ordinate scale should be described in power or units. Plotting for endothermic reactions is as upward deflection of the curve peaks, and exothermic reactions as downward deflections. In addition, authors must make clear the sign convention they are using.

Other thermal analysis techniques:

- (13) Give the type of instrument employed, including the manufacturer's name and the instrument model number.
- (14) The ordinate scale should be accurately described in the preferred units of measurement.

#### *Quantities and units*

Length  $l$ : metre (m)

Mass  $m$ : kilogram (kg); gram (g)

Time  $t$ : second (s); minute (min); hour (h)

Thermodynamic temperature  $T$ ; kelvin (K)

Celsius temperature  $t$ ;  $\theta$ ; degree Celsius ( $^{\circ}\text{C}$ )

Amount of substance  $n$ : mole (mol)

Molar mass  $M$ : ( $\text{kg mol}^{-1}$ )

Concentration (amount)  $c$ : ( $\text{mol dm}^{-3}$ ); ( $\text{mol l}^{-1}$ )

Molality  $m$ : ( $\text{mol kg}^{-1}$ )

Pressure  $p$ : pascal (Pa)

Energy  $E$ : joule (J)

Heat  $q$ ,  $Q$ : joule (J)

Power, heat flow rate  $P$ ,  $\Phi$ : watt (W)

Volume  $V$ : ( $\text{m}^3$ ); litre (l), (L)

Chemical potential (partial molar Gibbs energy): ( $\text{J mol}^{-1}$ )

Viscosity: dynamic  $\eta$  ( $\text{Pa s}$ ); kinematic ( $\text{m}^2\text{s}^{-1}$ )

Subscripts to denote a chemical process:

Combustion: c; reaction: r; transition: trs; fusion: fus; solution: sol; vaporization: vap; mixing: mix; sublimation: sub.

#### *Superscripts for standard conditions*

\_ or  $^{\circ}$

Examples:  $p_{\text{atm}}$  = 105 Pa (1 bar)

D<sub>CH<sub>4</sub></sub>

$H_B H_-$  (standard partial molar enthalpy of substance B)

### Prefixes

10<sup>-1</sup> d; 10<sup>-2</sup> c (centi); 10<sup>-3</sup> m (milli); 10<sup>-6</sup>  $\mu$  (micro); 10<sup>-9</sup> n (nano); 10<sup>-12</sup> p (pico); 10<sup>-15</sup> f (femto); 10<sup>-18</sup> a (atto); 10 da (deca); 10<sup>2</sup> h (hecto); 10<sup>3</sup> k (kilo); 10<sup>6</sup> M (mega); 10<sup>9</sup> G (giga); 10<sup>12</sup> T (tera); 10<sup>15</sup> P (peta); 10<sup>18</sup> E (exa)

### Special recommendations for thermal analysis

(International Confederation for Thermal Analysis and Calorimetry, ICTAC)

Differential scanning calorimetry: DSC

Differential thermal analysis: DTA

Dynamic mechanical analysis: DMA

Thermogravimetry/thermogravimetric analysis: TG/TGA

Thermomechanical analysis: TMA

Average heating rate:  $\beta$  (K min<sup>-1</sup>)

Fractional extent of reaction:  $\alpha$

### Subscripts

S, sample; R, reference sample.

To denote characteristic temperatures: i, initial; e, extrapolated onset; p, peak; f, final, g, glass transition.

When labelling the axes of graphs, symbols and units must be used as follows in order to have dimensionless data on the axes.

### Examples

T/K or  $T_{in}$  K

(or temperature in K)

10<sup>3</sup> T/K

m/kg or m in kg

(or mass in kg)

ln (p/MPa)

P/W or P in W

(or heat flow rate in W)

do not write T(K) or T[K], etc.

### References

[1] W.W. Wendlandt, Thermal Methods of Analysis, third ed., Wiley-Interscience, New York, 1976, Chapter 1.

[2] R.C. Mackenzie, Talanta 16 (1969) 1227.

[3] R.C. Mackenzie, C.J. Keatch, D. Dollimore, J.A. Forrester, A.A. Hodgson, J.P. Redfern, Talanta 19 (1972) 1079.

[4] H.G. McAdie, Anal. Chem. 39 (1967) 543.

[5] H.G. McAdie, Anal. Chem. 44 (1972) 640.