DESCRIPTION

General Perspective

- The Journal of Alloys and Compounds is an international peer-reviewed medium for the publication of work on materials comprising compounds as well as alloys. Its great strength lies in the diversity of disciplines which it encompasses, drawing together results from materials science, physical metallurgy, solid-state chemistry and physics. The interdisciplinary nature of the journal is evident in many subject areas. Experimental and theoretical approaches to materials problems require an active interplay between a variety of traditional and novel scientific disciplines.

- The journal will not consider topics on liquid alloys, traditional steel, wear, creep, welding and joining, organic materials and polymers, coordination chemistry, ionic liquids, catalysis (excepting catalysis combined with microstructural analysis or further materials properties) and biochemistry; it will not consider papers reporting only syntheses without any properties, purely computational papers without sufficient experimental validation, CALPHAD papers without regard to experimental observations. The submission of papers on technology of materials and processing is not encouraged. First principle calculations can only be accepted, if the system has already been proven in experiment or if this is required for a dedicated application. Technical reports will not be accepted.

- The work published in the journal should comprise studies on synthesis and structure combined with investigations of chemical and physical properties of alloys and compounds, contributing to the development of areas of current scientific interest.

- Papers submitted for publication should contain new experimental or theoretical results and their interpretation. The Journal of Alloys and Compounds provides a unique international forum where materials scientists, chemists and physicists can present their results both to researchers in their own fields and to others active in related areas.

AUDIENCE

Chemists, physicists, metallurgists and materials scientists, Materials Chemists
IMPACT FACTOR

2019: 4.650 © Clarivate Analytics Journal Citation Reports 2020

ABSTRACTING AND INDEXING

Cambridge Scientific Abstracts
Chemical Abstracts
Current Contents
Engineering Index
Metals Abstracts
Pascal Francis
Physics Abstracts
Physikalische Berichte
Research Alert
Science Citation Index
FIZ Karlsruhe
Ceramics Abstracts
Scopus
INSPEC

EDITORIAL BOARD

Editor-in-Chief
Ludwig Schultz, Dresden University of Technology Institute for Materials Science, Germany

Senior Editors
Livio Battezzati, University of Turin Department of Chemistry, Torino, Italy
Thermodynamics of alloys, phase transformations in alloys, solidification, non-equilibrium processing, metallic glasses, metastable compounds, quasicrystals, high temperature alloys, high entropy alloys, nanoporous metals by alloy corrosion, metal oxidation.
Jurgen Buschow, University of Amsterdam Van der Waals-Zeeman Institute, Amsterdam, Netherlands
Solid State Physics; Magnetism; Physical Metallurgy;
Hongge Pan, Zhejiang University School of Materials Science and Engineering, Hangzhou, China
Hydrogen storage materials and hydrides, Anode and cathode materials for rechargeable batteries, Supercapacitor, Magnetic materials, Photocatalystic materials
Vitalij Pecharsky, Iowa State University Department of Materials Science and Engineering, Ames, Iowa, United States of America
Structure-property relationships; Intermetallic and rare earth compounds. Electronic, magnetic and caloric materials. Mechanochemistry.

Editors
Eiji Abe, The University of Tokyo Graduate School of Engineering Faculty of Engineering Department of Materials Engineering, 7-3-1, Hongo, Bunkyo-ku, 113-865, Bunkyo-Ku, Japan
Microstructures of alloys, Phase transformations in alloys, Electron microscopy (TEM/STEM), X-ray/ electron diffraction, Crystallography of alloys/inorganic compounds
Mehmet Acet, University of Duisburg-Essen Faculty of Physics, Duisburg, Germany
Phenomena involving the interplay between magnetism and structure: magnetovolume effects (invar, anti-invar), magnetostuctural transitions (Heuslers, anti-perovskites, manganites, and crystallographic properties at interfaces separating different magnetic configurations (shell-ferromagnets); functionalities relevant to refrigeration, energy-conversion, non-volatile magnetic memory, permanent magnets.
Jennifer Aitken, Duquesne University Department of Chemistry and Biochemistry, 600 Forbes Avenue, 308 Mellon Hall, 15282, Pittsburgh, Pennsylvania, United States of America
Solid-state chemistry, flux synthesis, chalcogenides, nonlinear optical materials, thermoelectrics, single crystal X-ray diffraction, powder X-ray diffraction, semiconductors
Na Chen, Tsinghua University School of Materials Science and Engineering, 100084, Beijing, China
Metallic glasses; Bulk metallic glasses; Glass nanocomposites; Thermodynamics of alloys; Non-equilibrium processing; High entropy alloys; Magnetic thin films
Yuan Chen, The University of Sydney, Sydney, 2006, New South Wales, Australia
Lawrence Cook, Catholic University of America Department of Materials Science and Engineering, 620 Michigan Ave., 20064, Washington, District of Columbia, United States of America
High temperature materials, Mechanical properties, Phase equilibria, Thermal analysis

Daria Drozdenko, Charles University Faculty of Mathematics and Physics Department of Physics of Materials, 3 Ke Karlouva, 121 16, Praha, Czechia
Analysis of plastic deformation in metals by acoustic emission (AE) technique., Complex study of Mg alloys (including Mg-LPSO-based alloys), microstructure and mechanical properties, Advanced techniques for microstructure analysis

Dmitry G. Eskin, Brunel University Brunel Centre for Advanced Solidification Technology, UB8 3PH, Uxbridge, United Kingdom
Ultrasonic processing of liquids, Ultrasonic exfoliation, Ultrasonic emulsification, Solidification processing, Light alloys, Structure refinement, Grain refinement, Metal matrix composites

Huiqing Fan, Northwestern Polytechnical University School of Materials Science and Engineering, 127 Youyixilu, 710072, Xian, China
Functional Ceramics, Nano Materials, Thin Films

Josef Fidler, TU Wien Institute of Solid State Physics, Wiedner Hauptstrasse 8-10, 1040, Wien, Austria

Thiagarajan Gnanasekaran, Indira Gandhi Centre for Atomic Research, Indira Gandhi Centre for Atomic Research,Kalpakkam, 603102, Kalpakkam, India
Phase Diagrams; Measurement of Thermochemical Properties; Solid State Ionics; Chemical Sensors and Sensor Materials; Hydrogen in Metals; Chemical Synthesis of Inorganic Compounds

Mohamed Henini, University of Nottingham School of Physics and Astronomy, University Park, NG7 2RD, Nottingham, United Kingdom
Low Dimensional Structures and Devices, Nanotechnology and Nanoscience, Self-Assembled Semiconductor Nanostructures, Semiconductor Materials, III-V Electronic and Optoelectronic Devices, Photovoltaic Materials and Devices, Molecular Beam Epitaxy, Deep Level Transient Spectroscopy

Jacques Huot, University of Quebec in Trois Rivieres Hydrogen Research Institute, 3351 Boulevard Des Forges (P.O. Box 500), Trois Rivières, G9A 5H7, Quebec, Canada
Hydrogen research, Hydrogen storage, Metal hydrides, Gas-solid interactions, Materials characterization, Neutron diffraction, Materials synthesis

Li Jin, Shanghai Jiao Tong University School of Materials Science and Engineering, 1954 Hua Shan Road, 200030, Shanghai, China
Texture of Mg alloys, Texture induced deformation behaviour, Metal forming, Application of light alloys

Yongchang Liu, Tianjin University, 300072, Tianjin, China
Solid-state phase transformations: thermodynamic and kinetic analyses; rapid solidification; metal-activated sintering and Microstructural control in ni(co)-based superalloys, heat-resistance steels, superconducting materials, lead-free solders and ti-al intermetallic compounds.

Nicoleta Lupu, National Institute of Research and Development for Technical Physics, Mageron Av 47, 6600, Iasi, Romania
Metallic glasses; Bulk metallic glasses; Magnetic and magnetoelectric materials; Magnetoelastic processes; sensors and devices; Physics and chemistry of surfaces and interfaces; Nanoparticles and nanowire arrays; Hydrogen storage materials.

Valmor Mastelaro, University of Sao Paulo Campus of Sao Carlos, Sao Carlos, Brazil
Structure-property relationships, ZnO Based Materials, Metal Oxide Gas sensors, Glass and Glass-Ceramics, Metal oxide thin films, XAS and XPS spectroscopies

BS Murty, Indian Institute of Technology Hyderabad, IITH Main Road, Near NH-65, Sangareddy, 502285, Kandi, India
Physical metallurgy, alloy design, Phase transformations, High entropy alloys, bulk metallic glasses, nanocrystalline materials, metal matrix composites, electron microscopy, atom probe tomography.

Hari Srikanth, University of South Florida Department of Physics, 4202 E Fowler Ave, FL 33620, Tampa, Florida, United States of America
Magnetism and magnetic materials, Nanostructured materials for energy and biomedical applications, Structure-property correlations in functional materials, Strongly correlated systems

Wieslaw Strek, Institute of Low Temperature and Structure Research Polish Academy of Sciences, Okólna str. 2, 50-422, Wroclaw, Poland
Rare earth ions and transition metal ions, doped sol-gel materials, photonic structures, nanomaterials, nanoceramics and crystals.

Isabel Van Driessche, Ghent University Department of Chemistry, Krijgslaan 281 (Building S3), 9000, Gent, Belgium
Chemical Solution deposition (CSD, ink jet printing) of ceramics. Materials of interest : superconducting perovskites and buffer layers for production of coated conductors, titanates for (photo)catalytic and battery applications, low-E coatings; Formulation of environmentally friendly based inks. Use of bottom-up chemical synthesis approaches (hydrothermal, microwave-assisted, hot injection) for the synthesis of ceramic nanoparticles/suspensions.
Mingzhong Wu, Colorado State University Department of Physics, 1875 Campus Delivery, CO 80523, Fort Collins, Colorado, United States of America
Experimental Condensed Matter: Magnetism, Magnetic Materials, Spintronics, and Spin Caloritronics

Renbing Wu, Fudan University Department of Material Science, 200433, Shanghai, China
Semiconductor, Transition Metal-based composites, Electrode materials for energy storage and conversion

Xuezhang Xiao, Zhejiang University School of Materials Science and Engineering, 38 Zheda Road, Hangzhou, China
Volodymyr Yartys, Institute for Energy Technology, 2027, Kjeller, Norway

Assistant Editor

Editorial Advisory Board

G. Adachi, Osaka, Japan
Chemistry and materials science of rare earths, Solid state electrochemistry

A.V. Andreev, Praha, Czechia
Magnetism of rare-earth and uranium intermetallics, Crystal structure of rare-earth and uranium intermetallics, Metallic hydrides, Permanent magnets

A. Dahle, Jonkoping, Sweden
Solidification, Rheology, Light alloys, Lead-free soldering, Hydrogen storage

F.J. Di Salvo, Ithaca, New York, United States of America
Synthesis and characterization of solid state compounds, novel crystal structures. Physical properties such as electrical resistivity, thermal conductivity, thermopower.

T.B. Flanagan, Burlington, Vermont, United States of America
Hydrogen diffusion through metals and alloys, Thermodynamics of H metal systems, Characterization of intermetallic-H systems

C. Gomez Polo, Pamplona, Spain
Magnetism; magnetic nanoparticles and nanostructured magnetic materials; transition metal oxides

J.-M. Greneche, Le Mans, France

V.G. Harris, Boston, Massachusetts, United States of America
Magnetoceramics, principally ferrites, rf materials, magnetism

H-I. Hsing-I, Tainan, Taiwan
Ceramic processing, Electroceramics, CIGS/CZTS, Powder synthesis

D.C. Johnson, Eugene, Oregon, United States of America
Solid state chemistry, Thermoelectric materials, X-ray reflectivity, Thermal conductivity, Electrical transport

H. Kleinke, Waterloo, Ontario, Canada
Solid state chemistry, materials chemistry, energy conversion, thermoelectric materials, transport properties, electronic structure calculations, crystal structures, chalcogenides, pnictides

E.J. Mittermeijer, Stuttgart, Germany
Phase transformations, (interface) thermodynamics and kinetics; Nanomaterials, their unusual properties; Stress and phase transformations in (very) thin (multi)layers; surface engineering (nitriding and nitrocarburizing of iron, iron alloys and steels); oxidation of metals and alloys

Y. Mozharivskyj, Hamilton, Ontario, Canada
Thermoelectric materials, Magnetocaloric materials, X-ray analysis

R. Nesper, Zurich, Switzerland
Inorganic chemistry, Zintl phases, nanoscience, intermetallic phases, electrochemistry, hard materials.

E. Peterson, Los Alamos, New Mexico, United States of America
Actinide thermodynamics and equilibrium phase diagrams, High temperature superconductor synthesis, characterization, and applications, Carbon nanotubes, Radiation damage, and Vaporization studies

W. Prellier, Caen, France
K. Z. Rožman, Ljubljana, Slovenia
H. Sakaguchi, Tottori, Japan
Li ion materials, Hydrogen storage materials, hydrides

H. Sato, Tokyo, Japan
O.N. Senkov, Dayton, Ohio, United States of America
K. Suzuki, Miyagi, Japan
T. Takabatake, Higashihiroshima, Japan
T. Yamase, Yokohama, Japan
Catalysis, photoluminescence.

C.-L. Yeh, Taichung, Taiwan
Self-propagating High-temperature Synthesis (SHS), Transition metal borides and nitrides, Intermetallics, MAX phases, Thermite Reaction
GUIDE FOR AUTHORS

INTRODUCTION
Editors reserve the right to adjust style to certain standards of uniformity. Please use Word, Word Perfect or LaTeX files for the text of your manuscript. For further information about LaTeX submission, please go to https://www.elsevier.com/latex.

Types of contributions
- Original research not already published
- Reviews by invitation only
- Correspondence (not more than 2000 words)

Details for submission
Editor assignments are made by the journal editorial office. Authors may request an editor when submitting their papers, but assignments are not assured due to fluctuations in individual editor workload.

Elsevier Editorial System
Submission of manuscripts proceeds totally online via the Elsevier Editorial System at https://www.editorialmanager.com/jalcom/default.aspx. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail and via the Author's main menu in Editorial Manager. For any queries, please visit our Support Center.

Submission checklist
You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:

One author has been designated as the corresponding author with contact details:
- E-mail address
- Full postal address

All necessary files have been uploaded:
Manuscript:
- Include keywords
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print

Graphical Abstracts / Highlights files (where applicable)
Supplemental files (where applicable)

Further considerations
- Manuscript has been 'spell checked' and 'grammar checked'
- All references mentioned in the Reference List are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources (including the Internet)
- A competing interests statement is provided, even if the authors have no competing interests to declare
- Journal policies detailed in this guide have been reviewed
- Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

BEFORE YOU BEGIN
Ethics in publishing
Please see our information on Ethics in publishing.
Studies in humans and animals

If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. The manuscript should be in line with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals and aim for the inclusion of representative human populations (sex, age and ethnicity) as per those recommendations. The terms sex and gender should be used correctly.

Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Institutes of Health guide for the care and use of Laboratory animals (NIH Publications No. 8023, revised 1978) and the authors should clearly indicate in the manuscript that such guidelines have been followed. The sex of animals must be indicated, and where appropriate, the influence (or association) of sex on the results of the study.

Declaration of competing interest

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors should complete the declaration of competing interest statement using this template and upload to the submission system at the Attach/Upload Files step. Note: Please do not convert the .docx template to another file type. Author signatures are not required. If there are no interests to declare, please choose the first option in the template. More information.

Submission declaration and verification

Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

Preprints

Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

Use of inclusive language

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns ("clinicians, patients/clients") as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

Author contributions

For transparency, we encourage authors to submit an author statement file outlining their individual contributions to the paper using the relevant CRediT roles: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources;
Software; Supervision; Validation; Visualization; Roles/Writing - original draft; Writing - review & editing. Authorship statements should be formatted with the names of authors first and CRediT role(s) following. More details and an example

Changes to authorship
Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.

Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.

Article transfer service
This journal is part of our Article Transfer Service. This means that if the Editor feels your article is more suitable in one of our other participating journals, then you may be asked to consider transferring the article to one of those. If you agree, your article will be transferred automatically on your behalf with no need to reformat. Please note that your article will be reviewed again by the new journal. More information.

Copyright
Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete a 'License Agreement' (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

Author rights
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing
Find out how you can share your research published in Elsevier journals.

Role of the funding source
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

Open access
Please visit our Open Access page for more information.
Elsevier Researcher Academy

Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

Language (usage and editing services)
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's Author Services.

Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Decisions
The decision of the Editor is final and will stand. Resubmissions of previously rejected manuscripts will be returned to the author.

Referees
Please submit the names and institutional e-mail addresses of several potential referees. Please provide a list of at least three referees. Note that the referees provided should not be from your own country. For more details, visit our Support site. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

PREPARATION

Queries
For questions about the editorial process (including the status of manuscripts under review) or for technical support on submissions, please visit our Support Center.

Peer review
This journal operates a single anonymized review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. Editors are not involved in decisions about papers which they have written themselves or have been written by family members or colleagues or which relate to products or services in which the editor has an interest. Any such submission is subject to all of the journal's usual procedures, with peer review handled independently of the relevant editor and their research groups. More information on types of peer review.

Use of word processing software
It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

LaTeX
You are recommended to use the Elsevier article class elsarticle.cls to prepare your manuscript and BibTeX to generate your bibliography. Our LaTeX site has detailed submission instructions, templates and other information.
**Article structure**

*Subdivision - numbered sections*

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

*Introduction*

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

*Material and methods*

Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

*Theory/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.

*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.

**Essential title page information**

- **Title.** Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible.
- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.
- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**
- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

*Highlights*

Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: [example Highlights](#).
Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

**Abstract**
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.

**Graphical abstract**
Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarize the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. You can view Example Graphical Abstracts on our information site. Authors can make use of Elsevier's Illustration Services to ensure the best presentation of their images and in accordance with all technical requirements.

**Keywords**
Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Immediately after the abstract, provide a maximum of 6 keywords from the keyword list at the bottom of this page, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, "and," "of"). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

**Acknowledgements**
Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

**Formatting of funding sources**
List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Math formulae**
Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).
Footnotes
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Artwork
Electronic artwork
General points
- Make sure you use uniform lettering and sizing of your original artwork.
- Embed the used fonts if the application provides that option.
- Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Provide captions to illustrations separately.
- Size the illustrations close to the desired dimensions of the published version.
- Submit each illustration as a separate file.
- Ensure that color images are accessible to all, including those with impaired color vision.

A detailed guide on electronic artwork is available.
You are urged to visit this site; some excerpts from the detailed information are given here.
Formats
If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.
Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):
EPS (or PDF): Vector drawings, embed all used fonts.
TIFF (or JPEG): Color or grayscale photographs (halftones), keep to a minimum of 300 dpi.
TIFF (or JPEG): Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale), keep to a minimum of 500 dpi.
Please do not:
- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colors;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

Color artwork
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF) or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) in addition to color reproduction in print. Further information on the preparation of electronic artwork.

Figure captions
Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

Text graphics
Text graphics may be embedded in the text at the appropriate position. If you are working with LaTeX and have such features embedded in the text, these can be left. See further under Electronic artwork.

Tables
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

References
Citation in 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 are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either ‘Unpublished results’ or ‘Personal communication’. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Reference links
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.

Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, 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.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal’s style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:
http://open.mendeley.com/use-citation-style/journal-of-alloys-and-compounds
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by
the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

**Reference style**

**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:


Reference to a journal publication with an article number:


Reference to a book:


Reference to a chapter in an edited book:


Reference to a website:


Reference to a dataset:


Reference to software:


**Journal abbreviations source**

Journal names should be abbreviated according to the List of Title Word Abbreviations.

**Video**

Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

**Data visualization**

Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

**Supplementary material**

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article.
and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

**Research data**

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the [research data page](#).

**Data linking**

If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the [database linking page](#).

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

**Mendeley Data**

This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. Before submitting your article, you can deposit the relevant datasets to Mendeley Data. Please include the DOI of the deposited dataset(s) in your main manuscript file. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the [Mendeley Data for journals page](#).

**Data in Brief**

You have the option of converting any or all parts of your supplementary or additional raw data into a data article published in Data in Brief. A data article is a new kind of article that ensures that your data are actively reviewed, curated, formatted, indexed, given a DOI and made publicly available to all upon publication (watch this video describing the benefits of publishing your data in Data in Brief). You are encouraged to submit your data article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed, published open access and linked to your research article on ScienceDirect. Please note an open access fee is payable for publication in Data in Brief. Full details can be found on the [Data in Brief website](#). Please use this template to write your Data in Brief data article.

**Data statement**

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the [Data Statement page](#).
**Keywords**
The keywords for the *Journal of Alloys and Compounds* are separated into four categories:

**A. Types of Material**
actinide alloys and compounds
amorphous materials
ceramics
clusters
coating materials
composite materials
data storage materials
disordered systems
electrode materials
energy storage materials
ferroelectrics
fuel cells
fullerenes
half metals
heterojunctions
high-temperature alloys
high-Tc superconductors
hydrogen absorbing materials
inorganic materials
insulators
intermetallics
interstitial alloys
liquid crystals
magnetic films and multilayers
magnetically ordered materials
metal hydrides
metallic glasses
metal matrix composites
metals and alloys
nanostructured materials
nitride materials
nuclear reactor materials
optical materials
oxide materials
permanent magnets
phosphers
polymers, elastomers, and plastics
quantum wells
quasicrystals
rare earth alloys and compounds
semiconductors
spin glasses
superconductors
surfaces and interfaces
thin films
transition metal alloys and compounds
thermoelectric materials

**B. Preparation and Processing**
amorphisation
chemical synthesis
crystal growth
gas-solid reactions
laser processing
liquid-solid reactions
precipitation
powder metallurgy
mechanical alloying
mechanochemical processing
nanofabrications
rapid-solidification, quenching
sintering
sol-gel processes
solid state reactions
vapor deposition

C. Phenomena
atomic scale structure
acoustic properties
anisotropy
anharmonicity
catalysis
composition fluctuations
crystal structure
corrosion
crystal and ligand fields
crystal binding and equation of state
cyclotron resonance
dielectric response
diffusion
dislocations and disclinations
domain structure
discovery
elasticity
electrical transport
electrochemical reactions
electromotive force, EMF
electron-electron interactions
electron-phonon interactions
electronic band structure
electronic properties
enthalpy
entropy
exchange and superexchange
fractional quantum Hall effect
flux pinning and creep
galvanomagnetic effects
grain boundaries
heat capacity
heat conduction
heavy fermions
hyperfine interactions
ionic conduction
impurities in semiconductors
kondo effect
kinetics
magnetisation
magnetocaloric
magnetoresistance
magnetostriction
magneto-volume effects
mechanical properties
microstructure
noise
optical properties
order-disorder effects
oxidation
phase diagrams
phase transitions
phonons
photoconductivity and photovoltaics
piezoelectricity, electrostriction
preferential site ordering
point defects
quantum Hall effect
quantum localization
radiation effects
recombination and trapping
shape memory
spin dynamics
spin-orbit effects
thermal expansion
thermodynamic properties
thermoelectric
thermochemistry
tunnelling
vacancy formation
valence fluctuations

D. Experimental and Theoretical Methods
atomic force microscopy, AFM
atom, molecule, and ion impact
calorimetry
computer simulations
elastic light scattering
electrochemical impedance spectroscopy
electron emission spectroscopies
electron energy loss spectroscopy
electron paramagnetic resonance
EXAFS, NEXAFS, SEXAFS
high-pressure
high magnetic fields
inelastic light scattering
inelastic neutron scattering
light absorption and reflection
luminescence
magnetic measurements
Mössbauer spectroscopy
metallography
molecular dynamics simulations
muon spectroscopies
neutron diffraction
nonlinear optics
nuclear resonances
optical spectroscopy
perturbed angular correlations, PAC
photoelectron spectroscopies
positron spectroscopies
Rutherford backscattering, RBS
scanning electron microscopy, SEM
scanning tunnelling microscopy, STM
strain, high pressure
surface electron diffraction (LEED, RHEED)
synchrotron radiation
thermal analysis
thermodynamic modeling
time-resolved optical spectroscopies
transmission electron microscopy, TEM
X-ray diffraction
X-ray and gamma-ray spectroscopies
AFTER ACCEPTANCE

Online proof correction
To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors. If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.

We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

Offprints
The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Author Services. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

Author discount
Contributors to Elsevier journals are entitled to a 30% discount on all Elsevier books.

AUTHOR INQUIRIES
Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.
You can also check the status of your submitted article or find out when your accepted article will be published.