The journal of Progress in Natural Science: Materials International sponsored and organized by both Chinese Materials Research Society (C-MRS) and International Union of Materials Research Societies (IUMRS) started to publish its first issue in November, 2010. Progress in Natural Science: Materials International provides scientists and engineers throughout the world with a central vehicle for the exchange and dissemination of basic theoretical studies and applied research of advanced materials. The emphasis is placed on original research, both analytical and experimental, which is of permanent interest to engineers and scientists, covering all aspects of new materials and technologies, such as, energy and environmental materials; advanced structural materials; advanced transportation materials, functional and electronic materials; nano-scale and amorphous materials; health and biological materials; materials modeling and simulation; materials characterization; and so on. The latest research achievements and innovative papers in basic theoretical studies and applied research of material science will be carefully selected and promptly reported. Thus, the aim of this Journal is to serve the global materials science and technology community with the latest research findings.

As a service to readers, an international bibliography of recent publications in advanced materials is published bimonthly.

Benefits to authors
We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our author services.

Please see our Guide for Authors for information on article submission. If you require any further information or help, please visit our Support Center.

IMPACT FACTOR

2018: 3.310 © Clarivate Analytics Journal Citation Reports 2019
ABSTRACTING AND INDEXING

Directory of Open Access Journals (DOAJ)
Science Citation Index Expanded
Current Contents - Physical, Chemical & Earth Sciences
INSPEC

EDITORIAL BOARD

Chairs
B.B. Wei, Northwestern Polytechnical University, China

Editor-in-Chief
Y. Han, Chinese Materials Research Society, China

Deputy Editors-in-Chief
R.P.H. Chang, Northwestern University, United States
Y. Wu, Central Iron and Steel Research Institute Group, China
W.Z. Zhou, University of St Andrews, United Kingdom

Editorial Members
D.L. Chen, Ryerson University Department of Mechanical and Industrial Engineering, Canada
G. Z. Chen, University of Nottingham, United Kingdom
X. Chen, Institute of Metal Research Chinese Academy of Sciences, China
Z.G. Chen, National University of Singapore, Singapore
B.V.R. Chowdari, National University of Singapore, Singapore
T. Deng, Shanghai Jiao Tong University, China
D. Dodoo-Arhin, University of Ghana, Ghana
Q. Feng, University of Science and Technology Beijing State Key Laboratory for Advanced Metals and Materials, China
Y. P. Feng, National University of Singapore, Singapore
R. Gao, National Natural Science Foundation of China, China
W. Gao, The University of Auckland Department of Chemical and Materials Engineering, New Zealand
Y. Gao, Shanghai University, China
Z. Gu, Sichuan University, China
E. Han, Institute of Metal Research Chinese Academy of Sciences, China
B.Y. Huang, Central South University, China
X. Huang, Chinese Academy of Sciences, China
Y. Ikuma, Kanagawa Institute of Technology, Japan
G. Li, Sichuan University, China
C.T. Liu, City University of Hong Kong Department of Mechanical and Biomedical Engineering, Hong Kong
F. Liu, Northwestern Polytechnical University School of Materials Science and Engineering, China
J. Liu, Nanjing University, China
L. Liu, Beijing Computational Science Research Center, China
G.-Q.M. Lu, University of Surrey, United Kingdom
R. Martins, New University of Lisbon UNINOVA Institute for the Development of New Technologies, Portugal
Y. Mei, Fudan University, China
Z. Nie, Beijing University of Technology, China
F. S. Pan, Chongqing University, China
S. M. Rosales, Autonomous University of Nuevo Leon, Mexico
Z. Shan, Xi’an Jiaotong University School of Energy and Power Engineering, China
G. Shen, Chinese Academy of Sciences, China
A. Slaoui, National Centre for Scientific Research, France
A. Suzuki, Yokohama National University, Japan
O. Takai, Nagoya University, Japan
Z. Tian, Central Iron and Steel Research Institute Group, China
H. Tu, National Engineering Research Center for Semiconductor Materials, GRINM, China
G. Wang, University of Technology Sydney School of Civil and Environmental Engineering, Australia
R. Wang, East China Normal University, China
Y. Wang, Zhejiang University, China
Z.L. Wang, Georgia Institute of Technology School of Materials Science and Engineering, United States
W. Wei, Central South University, China
D. Weng, Tsinghua University, China
J. Williams, Australian National University, Australia
C. Wu, Shanghai Institute of Ceramics Chinese Academy of Sciences, China
Y. Xiong, University of Science and Technology of China, China
J. Xu, Chinese Academy of Sciences, China
J. Ye, National Institute for Materials Science, Japan
C. Yu, University of Queensland, Australia
J. Zhang, Beijing Institute of Technology, China
J. Zhao, The Ohio State University Department of Materials Science and Engineering, United States
L. Zhao, Beihang University School of Materials Science and Engineering, China
X. Zhao, Beihang University, China
Y.F. Zheng, Peking University Department of Material Science and Engineering, China
C. Zhou, Beihang University, China
S.X. Zhou, Central Iron and Steel Research Institute Group, China
Y. Zhou, Harbin Institute of Technology, China
M. Zhu, Donghua University, China
GUIDE FOR AUTHORS

Introduction
The journal of "Progress in Natural Science: Materials International" sponsored and organized by both Chinese Materials Research Society (C-MRS) and International Union of Materials Research Societies (IUMRS) started to publish its first issue in November, 2010. This journal reports the recent research results in the field of material science and technology, mainly covering the new materials and technologies in some key areas, such as, energy and environmental materials; advanced structural materials; advanced transportation materials, functional and electronic materials; nano-scale and amorphous materials; health and biological materials; materials modelling and simulation; materials characterization; and so on. The latest research achievements and innovative papers in basic theoretical studies and applied research on material science will be carefully selected and promptly reported. Collectively, these articles will provide rich contributions to the global material science and technology community.

The editorial office locates at the C-MRS headquarter office with the address of: Room 4102, No.62, Zizhuyuan Road, Haidian District, Beijing, China, 100048; Tel: 86-10-6872-2032 ;Fax: 86-10-6872-2033; Email: pns-mi@c-mrs.org.cn. The editorial board and all the editors of the Progress in Natural Science: Materials International are sincerely invite you to submit your papers of both original research results, reviews and letters in your research fields to publish in this journal.

Types of Manuscripts
The Progress in Natural Science: Materials International accepts review papers, research papers, and letters.

Research papers:
• A research paper presents the results of investigations on a relevant subject matter.
• The length should not normally exceed 6000 words and 8 diagrams - this corresponds to 6-8 journal pages.

Review articles:
• A review article succinctly reviews recent progress on a specific subject of active research. It should summarize the current state of knowledge of the topic by discussing the findings presented in recent research papers.
• The length should not normally exceed 8000 words and 15 diagrams - this corresponds to approximately 10 journal pages.

Letters:
• A letter informs the scientific community about recent research, which the authors wish to publish as quickly as possible, without writing a detailed full length research paper. The activity of IUMRS is also included.
• The length should not normally exceed 2000 words and 4 diagrams - this corresponds to approximately 4 journal pages.

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
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

Declaration of 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 interest statement using this template and upload to the submission system at the Attach/Upload Files step. If there are no interests to declare, please choose: 'Declarations of interest: none' in the template. This statement will be published within the article if accepted. More information.

Submission declaration

Submission of an article implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), 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, without the written consent of the copyright-holder.

By submitting a manuscript, the authors agree that the copyright for their article is transferred to the Chinese Materials Research Society if and when the article is accepted for publication. Responsibility for the contents of a manuscript rests upon the author(s) and not on this journal, the editors or the publisher. The technical contents of the manuscript should be carefully considered by the author(s) before submission for publication.

Note that conference proceedings are a form of publication.

Authors should make every effort to conform to the guidelines given below for the preparation of manuscripts. Proper preparation of manuscripts will speed publication of articles. Improperly prepared manuscripts may be returned to the author(s) for correction before being accepted for publication. The authors are advised to use either of the LaTeX or Word templates provided by the Elsevier Production Office at https://www.elsevier.com/locate/pnsmi.

Use of inclusive language

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

Contributors

Each author is required to declare his or her individual contribution to the article: all authors must have materially participated in the research and/or article preparation, so roles for all authors should be described. The statement that all authors have approved the final article should be true and included in the disclosure.

Changes to authorship

This policy concerns the addition, deletion, or rearrangement of author names in the authorship of accepted manuscripts:
Before the accepted manuscript is published in an online issue: Requests to add or remove an author, or to rearrange the author names, must be sent to the Journal Manager from the corresponding author of the accepted manuscript and must include: (a) the reason the name should be added or removed, or the author names rearranged and (b) written confirmation (e-mail, fax, 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. Requests that are not sent by the corresponding author will be forwarded by the Journal Manager to the corresponding author, who must follow the procedure as described above. Note that: (1) Journal Managers will inform the Journal Editors of any such requests and (2) publication of the accepted manuscript in an online issue is suspended until authorship has been agreed.

After the accepted manuscript is published in an online issue: Any requests to add, delete, or rearrange author names in an article published in an online issue will follow the same policies as noted above and 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 an 'Exclusive License Agreement' (see more information on this). Permitted third party reuse of 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 from the Journal Homepage 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
Progress in Natural Science: Materials International is published in English and submission to this journal proceeds totally online. Use the following guidelines to prepare your article. Via the homepage of this journal (https://www.elsevier.com/locate/pnsmi) you will be guided stepwise through the creation and uploading of the various files. Correspondences to the Editorial Office may be made through the electronic address pns-mi@c-mrs.org.cn
The system automatically converts source files to a single Adobe Acrobat PDF version of the article, which is used in the peer-review process. Please note that even though manuscript source files are converted to PDF at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by e-mail and via the author's homepage, removing the need for a hard-copy paper trail.

Please submit your article via http://ees.elsevier.com/pnsmi/.

**Telephone Support for Chinese speaking users is available. Call at +86 10 85208780 (Available from 9:00 to 17:30 CST)**

**Important notice**

Multi-part papers are not to be considered. Papers that are requested by the editors to be revised must be returned within 4 weeks or they will be regarded as withdrawn.

Water Research has no page charges.

The standards of publication for *Progress in Natural Science: Materials International* are extremely high. To ensure superior standards of quality and scientific validity, all papers submitted to the journal undergo a series of careful reviews by international experts, proficient in the relevant subject matter of the paper, before being accepted or rejected. Following full review procedure, inclusion of a manuscript in *Progress in Natural Science: Materials International* will be confirmed by an official acceptance letter forwarded to the corresponding author of the paper.

**Referees**

You are required to submit, with the manuscript, the names and addresses of 3 potential referees that can give an independent review.

**PREPARATION**

Authors should make every effort to conform to the guidelines given below for the preparation of manuscripts. Proper preparation of manuscripts will speed publication of articles. Improperly prepared manuscripts may be returned to the author(s) for correction before being accepted for publication. The authors are advised to use either of the LaTeX or Word templates provided by the Elsevier Production Office at https://www.elsevier.com/locate/pnsmi.

**Double-blind review**

This journal uses double-blind review, which means the identities of the authors are concealed from the reviewers, and vice versa. More information is available on our website. To facilitate this, please include the following separately:

**Title page (with author details):** This should include the title, authors' names, affiliations, acknowledgements and any Declaration of Interest statement, and a complete address for the corresponding author including an e-mail address.

**Blinded manuscript (no author details):** The main body of the paper (including the references, figures, tables and any acknowledgements) should not include any identifying information, such as the authors' names or affiliations.

**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.

**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.

**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.

**Abstract**

An abstract of 200 words or less should precede the introduction. The abstract should clearly indicate the nature of the manuscript and the results described therein

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major message. 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, they must be cited in full, without reference to the reference list. Also, abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

**Keywords**

Immediately after the abstract, provide 5 keywords, avoid general and plural terms and multiple concepts (avoid, for example, "and", "of"). These terms should be relatively independent (coordinate index terms) and, as a group, should optimally characterize the paper. Be sparing with abbreviations:
only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes. Use keywords that make your paper easy detectable for interested readers in literature databases. Repeating terms in the title is usually not needed.

**Abbreviations**

Nomenclature must be listed at the beginning of the paper and must conform to the system of standard SI units. Acronyms and abbreviations must be spelled out in full at their first occurrence in the text. In general, minimise the use of abbreviations so the paper remains easily understood by the general reader.

**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.

**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, EPS or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures these will be reproduced in color at no cost. For further information on the preparation of electronic artwork, please see https://www.elsevier.com/artworkinstructions.

Other artwork Instructions
All line drawings and photos should be in black and white, unless color is specifically requested. All lettering, graph lines and points or graphs should be succinctly large and bold to permit reproduction when the diagram has been reduced to 2 or 1 column widths. In a figure, graphs should be distinguished from each other and match their legends. If, in a figure, any mathematical expression is used, please make sure that all the superscript, subscript, small and cap letters be shown exactly as they appear in the text.

Original Photographs must be supplied as they are to be reproduced (e.g. black and white or colour). Please note that photocopies of photographs are not acceptable. Colour illustrations should be submitted as original photographs, high quality computer prints or transparencies, close to the size expected in publication.

Due to technical complications which can arise from converting colour figures to "grey scale" (for the printed version should you not opt for colour in print), please submit, in addition, usable black and white prints corresponding to all colour illustrations. Electronic Graphics Submit files for graphics as EPS files. If this is not possible, Tiff files are acceptable, as long as they can be opened in Adobe Photoshop with the minimum resolution of 600 dpi. No matter what method was used to produce the graphic illustration, it is necessary to provide a paper copy to the office of Progress in Natural Science: Materials International. Authors using graphic packages for the creation of electronic art should also avoid the use of any lines thinner than 0.5 points in width. Very thin lines or "hairlines", in the final printing process, become nearly invisible and may be lost entirely.

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.

Tables
Number tables consecutively in accordance with their appearance in the text. Place footnotes to tables below the table body and indicate them with superscript lowercase letters. Avoid vertical rules. Be sparing in the use of tables and ensure that the data presented in tables do not duplicate results described elsewhere in the article.

Minimise the use of symbols and abbreviations in the tables.

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.

Only cite the original papers and those relevant for the work, no need to give a full literature review in the introduction/discussion. A large fraction of self-citations is general an indication that the authors didn't place their work well in the literature context.

Citations should be numbered in sequence throughout the article in square brackets and listed in sequence numerically at the end of the paper.

Web references
As a minimum, the full URL should be given. 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/progress-in-natural-science-materials-international
When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

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:

Supplementary material
Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, movies, animation sequences, high-resolution images, background datasets, sound clips and more. Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. In order to ensure that your submitted material is directly usable, please ensure that data are provided in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. Video files:
please supply 'stills' with your files: you can choose any frame from the video or make a separate image. These will be used instead of standard icons and will personalize the link to your supplementary information. For more detailed instructions please visit our artwork instruction pages at https://www.elsevier.com/artworkinstructions.

**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. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. 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.

**Mathematical Expressions**

Particular care should be used in identifying unusual symbols or notations and upper and lower case letters. Define all non-standard nomenclature when they are first used. Avoid using awkward mathematical notations and non-standard symbols. Please note that consistency should be followed in using capital or small letters; superscripts or subscripts in mathematical environments. This should also be undertaken for figures where mathematical expressions are used. In type setting mathematical expressions, using Word software, please do not use any special style.

**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.

**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 be notified and receive a link to the published version of the open access article on ScienceDirect. This link is in the form of an article DOI link which can be shared via email and social networks. 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.