DESCRIPTION

The journal, *Renewable Energy*, seeks to promote and disseminate knowledge on the various topics and technologies of *renewable energy systems* and *components*. The journal aims to serve researchers, engineers, economists, manufacturers, NGOs, associations and societies to help them keep abreast of new developments in their specialist fields and to apply *alternative energy solutions* to current practices.

*Renewable Energy* is an international, multi-disciplinary journal in *renewable energy engineering* and *research*. The journal aims to be a leading peer-reviewed platform and an authoritative source of original research and reviews related to *renewable energy*.


The journal also welcomes papers on other related topics provided that such topics are within the context of the broader multi-disciplinary scope of *Renewable Energy*. It should be noted, however, that papers are within scope only if they are concerned with *power generation* and that the power is generated in a *renewable* or *sustainable* way. For instance, a paper concerning development and characterisation of a material for use in a renewable energy system, without any measure of the energy that this new material will convert, would be out of scope.

*Renewable Energy* accepts original research papers and review papers (the latter by invitation of the Editor-in-Chief only). Interested authors of review papers need to send the outline of the review together with a short CV of the main author/s to the Editor-in-Chief before submission of the paper.

AUDIENCE

Engineers, architects, technicians interested in and working with energy systems, scientists and engineers in the underdeveloped/developing countries, industries, manufacturers, inventors, universities, researchers and consultants.
IMPACT FACTOR

2016: 4.357 © Thomson Reuters Journal Citation Reports 2017

ABSTRACTING AND INDEXING

Compendex
Current Contents/Engineering, Computing & Technology
Engineering Index Monthly
FLUIDEX
GEOBASE
GeoRef
OCLC Contents Alert
Referativnyi Zhurnal VINTI-RAN (Russian Academy of Sciences)
Research Alert
SCISEARCH
Web of Science
SciSearch/Science Citation Index Expanded
Arts & Humanities Search
Engineering Information Database EnCompass LIT (Elsevier)
Scopus
Academic Search (EBSCO)

EDITORIAL BOARD

Editor-in-Chief
Soteris Kalogirou, Cyprus University of Technology, Lemesos, Cyprus

Editorial Assistant
Gregoris Panayiotou, Cyprus University of Technology, Lemesos, Cyprus

Associate Editors

Biomass:
Robert O. Dunn, U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Peoria, Illinois, USA
David Fulford, Kingdom Bioenergy Ltd, Woodley, Reading, England, UK

Biomass and Solar Thermal:
Sotirios Karellas, National Technical University of Athens (NTUA), Zografou, Greece

Photovoltaics:
Viorel Badescu, Politehnica University of Bucharest, Bucharest, Romania

Wind:
John K. Kaldellis, Technological Education Institute of Piraeus, Egaleo, Greece

Subject Editors

Energy Storage and Geothermal Systems:
Luisa F. Cabeza, Universitat de Lleida, Lleida, Spain

Fuel Cells and Hydrogen:
Jinlong Gong, Tianjin University, Tianjin, China

Ocean Energy and Offshore Wind:
Carlos Guedes Soares, Universidade de Lisboa, Lisboa, Portugal
Young-Ho Lee, Korea Maritime and Ocean University (KMOU), Busan, The Republic of Korea

Policy:
Emilia Kondili, Technological Education Institute of Piraeus, Aegaleo, Greece

Wind and PV Systems – Control and Grid Integration:
Ghanim Putrus, Northumbria University, Newcastle upon Tyne, England, UK
Mingming Zhang, Chinese Academy of Sciences (CAS), Beijing, China

Editorial Board Members

Biomass:
Raf Dewil, KU Leuven, Sint-Katelijne-Waver, Belgium
Gary Leake, Cranfield University, Cranfield, Bedfordshire, England, UK
Jerry Murphy, University College Cork, Cork, Ireland
Haijia Su, Beijing University of Technology, Beijing, China
Shang-Shyng Yang, University of Science and Technology of China (USTC), Nankang, Taiwan

Desalination:
Diego-César Alarcón-Padilla, Ciemat, Tabernas, Spain
Vassilios Belessiotis, National Centre for Scientific Research (NCSR) "Demokritos", Agia Paraskevi, Greece
Panagiotis Christofides, University of California at Los Angeles (UCLA), Los Angeles, California, USA
V.G. Gude, Mississippi State University, Mississippi State, Mississippi, USA
E. Mathioulakis, National Centre for Scientific Research (NCSR) "Demokritos", Agia Paraskevi, Greece

Energy Meteorology:
Carlos F.M. Coimbra, University of California at San Diego (UCSD), La Jolla, California, USA
Ian Grant, Bureau of Meteorology, Melbourne, Victoria, Australia
Harry Kambezidis, National Observatory of Athens, Athens, Greece
Philippe Lauret, Université de La Réunion, Saint-Denis, France
Silas Michaelides, The Cyprus Institute, Aglantzia, Nicosia, Cyprus

Geothermal:
Malek Bouazza, Monash University, Clayton, Victoria, Australia
Gustavo Cáceres, Universidad Adolfo Ibáñez, Peñaloléén, Santiago, Chile
Denis Marcotte, École Polytechnique de Montreal, Montreal, Quebec, Canada
Darius Mottaghy, Aachen University of Applied Sciences (FH Aachen), Jülich, Germany
Ladislaus Rybach, Eidgenössische Technische Hochschule (ETH) Zürich, Zurich, Switzerland
Ulrich Schmidtchen, German Hydrogen Association (DMV), Berlin, Germany
Umran Serpen, Istanbul Technical University, Istanbul, Turkey

Hydrogen and Fuel Cells:
Jazaer Dawody, Volvo Technology Corporation, Göteborg, Sweden
Derek Northwood, University of Windsor, Windsor, Ontario, Canada
Panagiotis Tsiakaras, University of Thessaly, Leoforos Athinon - Pedion Areos, Greece
Shudong Wang, Chinese Academy of Sciences (CAS), Dalian, China

Hydrotechnology:
André Lejeune, Université de Liège, Liège, Belgium

Low Energy Architecture and Building:
Mahroo Eftekhari, Loughborough University, Loughborough, Leicestershire, England, UK
Manuel Correia Guedes, Instituto Superior Técnico, Lisbon, Portugal
Neveen Hamza, Newcastle University, Newcastle upon Tyne, England, UK
Denia Kolokotsa, Technical University of Crete, Chania, Greece
Running Yao, University of Reading, Reading, UK
Chongqing University, Chongqing, China

Ocean Energy and Offshore Wind:
Kyoung Kwan Ahn, University of Ulsan, Ulsan, The Republic of Korea
António Franco de Oliveira Falcão, Universidade de Lisboa, Lisboa, Portugal
Jens Peter Kofoed, Aalborg University, Aalborg SV, Denmark
Ye Li, Shanghai Jiao Tong University, Shanghai, China
Torgeir Moan, Norwegian University of Science & Technology NTNU, Trondheim, Norway
Simon P. Neill, Bangor University, Menai Bridge, Wales, UK
Wanan Sheng, University College Cork, Cork, Ireland
Peter Kenneth Stansby, University of Manchester, Manchester, England, UK
Diego Vicinanza, Seconda Università degli Studi di Napoli, Aversa (CE), Italy
Zhaoqing Yang, Pacific Northwest National Laboratory, Seattle, Washington, USA

Photovoltaics:
Daniel Chemisana, Universitat de Lleida, Lleida, Spain
Giorgio Graditi, ENEA, Italy
Rolf Hanitsch, Technische Universität Berlin (TUB), Berlin, Germany
Eftichios Koutoulis, Technical University of Crete, Chania, Crete, Greece
Frederik C. Krebs, Danmarks Tekniske Universitet (DTU), Roskilde, Denmark
Adel Mellit, University of Jijel, Jijel, Algeria
Francesco Morabito, Università degli Studi Mediterranea, Via Grazielle, Italy
Niels Reich, Fraunhofer-Institut für Solare Energiesysteme (ISE), Freiburg, Germany
Wilfried van Sark, Utrecht University, Utrecht, Netherlands

Policy:
Maria Dicorato, Politecnico di Bari, Bari, Italy
Dany Escudié, INSA de Lyon, Lyon, France
Rainer Hinrichs-Rahlwes, BBE German Renewable Energy Federation, Berlin, Germany
Lado Kurdgelashvili, University of Delaware, Newark, Delaware, USA
Henrik Lund, Aalborg University, Aalborg, Denmark
Angeliki Menegaki, Organismos Georgikon Asfaliseon, Komotini, Greece
Hellenic Open University, Patras, Greece
Anna Stoppato, Università degli Studi di Padova, Padova, Italy

Thermal Technology:
Giorgio Besagni, Politecnico di Milano, Milano, Italy
Christian Cristofari, SPE University of Corsica, Ajaccio, France
Notton Gilles
Klaus Gottschalk, Leibniz-Institut für Agrartechnik und Bioökonomie e.V. (ATB), Potsdam, Germany
Afif Hasan, Birzeit University, Birzeit, Palestinian Territory, Occupied
Lingai Luo, Centre National de la Recherche Scientifique (CNRS), Nantes, France
Khamid Mahkamov, Northumbria University, Newcastle Upon Tyne, England, UK
Brian Norton, Dublin Institute of Technology, Dublin, Ireland
Mervyn Smyth, Ulster University, Belfast, UK
Manolis Souliotis, University of Western Macedonia, Kozani, Greece
Aggelos Zacharopoulos, Ulster University, Coleraine, Northern Ireland, UK

Wind Energy:
Morten Blarke, Aalborg University, Aalborg, Denmark
Aoife M. Foley, Queen’s University Belfast, Belfast, Northern Ireland, UK
Carlos Labriola, National University of Comahue, Comahue, Argentina
David Lindley, Woodfield House, Beaconsfield, Bucks, UK
David Milborrow, Lewes, UK
Athanasios Sfetsos, National Centre for Scientific Research (NCSR) "Demokritos", Agia Paraskevi, Greece

Founding Editor
A.A.M. Sayigh, World Renewable Energy Network, Brighton, UK
GUIDE FOR AUTHORS

Your Paper Your Way
We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article.

To find out more, please visit the Preparation section below.

Types of Paper
Renewable Energy considers for publication: original scientific or engineering research papers concerned with any aspect of renewable energy research, measurement, development or application, and invited reviews looking at the state-of-the-art of a particular topic through publications in that field.

Procedure - Original articles should be submitted to the journal via EES. Authors interested in submitting a review article should send their CV, together with the outline of the proposed review paper, to the Editor in Chief (c/o rene-editor@cut.ac.cy) for evaluation.

Paper Length - As a guide, original papers should be between 4000 and 6000 words (excluding table/figure captions and references), and review articles should be up to 10,000 words. Authors must state the number of words in their manuscript at submission stage.

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 pages on Ethics in publishing and Ethical guidelines for journal publication.
**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. If there are no conflicts of interest then please state this: 'Conflicts of interest: none'. 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 or as part of a published lecture or academic thesis or as an electronic preprint, see 'Multiple, redundant or concurrent publication' section of our ethics policy 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 CrossCheck.

**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 open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). 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.

**Funding body agreements and policies**

Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the Open Access Publication Fee. Details of existing agreements are available online.

**Open access**

This journal offers authors a choice in publishing their research:

- **Open access**
  - Articles are freely available to both subscribers and the wider public with permitted reuse.
  - An open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

- **Subscription**
  - Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs.
  - No open access publication fee payable by authors.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.

For open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:

- **Creative Commons Attribution (CC BY)**
  - Lets others distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), include in a collective work (such as an anthology), text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author’s honor or reputation.

- **Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)**
  - For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The open access publication fee for this journal is **USD 2850**, excluding taxes. Learn more about Elsevier's pricing policy: [https://www.elsevier.com/openaccesspricing](https://www.elsevier.com/openaccesspricing).

**Green open access**

Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our green open access page for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution’s repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. [Find out more.](https://www.elsevier.com/openaccesspricing)

This journal has an embargo period of 24 months.

**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 WebShop.
Submission
Submission to this journal proceeds totally online. Use the following guidelines to prepare your article. Via the homepage of this journal (http://ees.elsevier.com/rene) you will be guided stepwise through the creation and uploading of the various files. 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.

Referees
Please submit the names and institutional e-mail addresses of several potential referees. 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

NEW SUBMISSIONS
Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process. As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or layout that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

References
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 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.

Formatting requirements
There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions. If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes. Divide the article into clearly defined sections.

Please ensure your paper has consecutive line numbering - this is an essential peer review requirement.

Figures and tables embedded in text
Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

Peer review
This journal operates a single blind 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. More information on types of peer review.

REVISED SUBMISSIONS
Use of word processing software
Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). 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 detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should 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. 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. 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**
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.

**Highlights**
Highlights are mandatory for this journal. They consist of a short collection of bullet points that convey the core findings of the article and 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). You can view example Highlights on our information site.

**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.

**Abbreviations**
Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

**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.
Nomenclature and units
Follow internationally accepted rules and conventions: use the international system of units (SI). If other quantities are mentioned, give their equivalent in SI. You are urged to consult IUPAC: Nomenclature of Organic Chemistry for further information.

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 build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

Artwork
Electronic artwork
General points
• Make sure you use uniform lettering and sizing of your original artwork.
• Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Indicate per figure if it is a single, 1.5 or 2-column fitting image.
• For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
• Please note that individual figure files larger than 10 MB must be provided in separate source files. 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
Regardless of the application used, 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 the font or save the text as 'graphics'.
TIFF (or JPG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
TIFF (or JPG): Bitmapped line drawings: use a minimum of 1000 dpi.
TIFF (or JPG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

Please do not:
• Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
• 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) regardless of whether or not these illustrations are reproduced in color in the printed version. For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article. Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

Figure captions
Ensure that each illustration has a caption. 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
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.

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 and Zotero, as well as EndNote. Using the word processor 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.

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/renewable-energy
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 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 book:
Reference to a chapter in an edited book:
Reference to a website:
Reference to a dataset:

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 files in one of our recommended file formats with a preferred maximum size of 150 MB in total. Any single file should not exceed 50 MB. 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.

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.

Please always supply any associated raw data to enable the Editor to properly assess your paper. Should you have uploaded your data at an open database repository then you may instead provide the link for the dataset(s) at the repository.

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 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.

ARTICLE ENRICHMENTS
AudioSlides
The journal encourages authors to create an AudioSlides presentation with their published article.
AudioSlides are brief, webinar-style presentations that are shown next to the online article on
ScienceDirect. This gives authors the opportunity to summarize their research in their own words
and to help readers understand what the paper is about. More information and examples are
available. Authors of this journal will automatically receive an invitation e-mail to create an AudioSlides
presentation after acceptance of their paper.

Google Maps and KML files
KML (Keyhole Markup Language) files (optional): You can enrich your online articles by providing
KML or KMZ files which will be visualized using Google maps. The KML or KMZ files can be uploaded
in our online submission system. KML is an XML schema for expressing geographic annotation and
visualization within Internet-based Earth browsers. Elsevier will generate Google Maps from the
submitted KML files and include these in the article when published online. Submitted KML files will
also be available for downloading from your online article on ScienceDirect. More information.

Interactive plots
This journal enables you to show an Interactive Plot with your article by simply submitting a data
file. Full instructions.

AFTER ACCEPTANCE
Online proof correction
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 Webshop. Corresponding authors who have published their article 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 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.

© Copyright 2014 Elsevier | http://www.elsevier.com