



# APPLIED SOFT COMPUTING

The Official Journal of the World Federation on Soft Computing (WFSC)

## AUTHOR INFORMATION PACK

### TABLE OF CONTENTS

|   |                                 |            |
|---|---------------------------------|------------|
| ● | <b>Description</b>              | <b>p.1</b> |
| ● | <b>Impact Factor</b>            | <b>p.2</b> |
| ● | <b>Abstracting and Indexing</b> | <b>p.2</b> |
| ● | <b>Editorial Board</b>          | <b>p.2</b> |
| ● | <b>Guide for Authors</b>        | <b>p.6</b> |



ISSN: 1568-4946

### DESCRIPTION

*Applied Soft Computing* is an international journal promoting an integrated view of **soft computing** to solve real life problems. Soft computing is a collection of methodologies, which aim to exploit tolerance for imprecision, uncertainty and partial truth to achieve tractability, robustness and low solution cost. The focus is to publish the highest quality research in application and convergence of the areas of **Fuzzy Logic, Neural Networks, Evolutionary Computing, Rough Sets** and other similar techniques to address real world complexities.

*Applied Soft Computing* is a rolling publication: articles are published as soon as the [editor-in-chief](#) has accepted them. Therefore, the web site will continuously be updated with new articles and the publication time will be short.

Major Topics:

The scope of this journal covers the following soft computing and related techniques, interactions between several soft computing techniques, and their industrial applications:

- Ant Colony
- Chaos Theory
- Evolutionary Computing
- Fuzzy Computing
- Hybrid Methods
- Immunological Computing
- Morphic Computing
- Neuro Computing
- Particle Swarm
- Probabilistic Computing
- Rough Sets
- Wavelet

The application areas of interest include but are not limited to applications of soft computing to:

- Agricultural Machinery and Produce
- Autonomous Reasoning
- Bio-inspired Systems
- Biomedical Engineering

- Condition Monitoring
- Consumer Electronics
- Data Mining
- Data Visualisation
- Decision Support
- Engineering Design Optimisation
- Fault Diagnosis
- Human-Machine Interface
- Industrial Electronics
- Intelligent Agents
- Intelligent Information Retrieval
- Internet Tools
- Manufacturing Systems
- Motion Control and Power Electronics
- Multi-objective Optimisation
- Nano and Micro-systems
- Power and Energy
- Process and System Control
- Process Optimisation
- Reactive Distributed AI
- Robotics
- Signal or Image Processing
- System Identification and Modelling
- Systems Integration
- Telecommunications
- Time Series Prediction
- Virtual Reality
- Vision or Pattern Recognition

## IMPACT FACTOR

---

2015: 2.857 © Thomson Reuters Journal Citation Reports 2016

## ABSTRACTING AND INDEXING

---

Current Contents/Engineering, Computing & Technology  
 CompuMath Citation Index  
 Scopus  
 Science Citation Index Expanded

## EDITORIAL BOARD

---

### *Editor-in-Chief*

**M. Köppen**, Professor, Graduate School of Creative Informatics Department of Computer Science and Electronics  
 Kyushu Institute of Technology 680-4, Kawazu, Iizuka, Fukuoka 820-8502 JAPAN

### *Founding Editor-in-Chief*

**R. Roy**, Cranfield University, Cranfield, Bedfordshire, UK

### *Managing Editor*

**B. van Vlijmen**, Universiteit van Amsterdam, Amsterdam, Netherlands

### *Assistant Managing Editor*

**S. Dadkhah**

### *Honorary Editor*

**L.A. Zadeh**, Dept. of Electrical Engineering and Computer Sciences (EECS), Div. of Computer Science, University  
 of California at Berkeley, Berkeley, California, CA 94720-1776, USA

### **Steering Committee**

**T. Furuhashi**, Nagoya University, Nagoya, Japan  
**D.E. Goldberg**, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA  
**S.J. Ovaska**, Helsinki University of Technology (TKK), Espoo, Finland  
**Y. Suzuki**, Muroran Inst. of Technology, Muroran, Japan

### **Associate Editors**

**P. Angelov**, School of Computing and Communications, Lancaster University, InfoLab, Southdrive, Lancaster University, LA1 4WA, Lancaster, UK  
**O. Castillo**, Dept. of Computer Science, Dof Graduate Studies and Research, Tijuana Institute of Technology, Calzada Tecnológico s/n Fracc. Tomas Aquino, 22379, Tijuana, Mexico  
**C.A. Coello Coello**, Dept. de Computación, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), Av. Instituto Politécnico Nacional No. 2508, D.F. 07300, Col. San Pedro Zacatenco, Mexico  
**I. de Falco**, Ist. di Calcolo e Reti ad Alte Prestazioni (ICAR), National Research Council of Italy (CNR), via Castellino Pietro 111, 80131, Napoli, Italy  
**U. Fiore**, Università degli studi di Napoli Federico II, Italy  
**X.-Z. Gao**, School of Electrical Engineering, Dept. of Electrical Engineering and Automatio, Aalto University, Otaniementie 17, 00076, Aalto, Finland  
**P. Gómez-Pérez**, Centro Universitario de la Defensa, Spain  
**E. Herrera-Viedma**, Dept. of Computer Science & Artificial Intelligence (DECSAI), E.T.S. Ingeniería Informática y Telecomunicación, Universidad de Granada, 18071, Granada, Spain  
**F. Hoffmann**, Lehrstuhl für Regelungssystemtechnik (RST), Fakultät für Elektro- und Informationstechnik, Technische Universität Dortmund, D-44221, Dortmund, Germany  
**T.W. Liao**, Dept. of Construction Management and Industrial Engineering, Louisiana State University, PFT Hall, Baton Rouge, Louisiana, LA 70803, USA  
**M. Mernik**, Fac. of Electrical Engineering and Computer Science, University of Maribor, Smetanova ulica 17, SI-2000, Maribor, Slovenia  
**W. Pedrycz**, Department of Electrical and Computer Engineering, University of Alberta, 9107 - 116 Street, Edmonton, T6G 2V4, Alberta, Canada  
**M. Randall**, Fac. of Business, Technology and Sustainable Development, Bond University, Brisbane, 4229, Queensland, Australia  
**B. Tütmez**, School of Engineering, Inonu University, Malatya, Turkey  
**M. Zhang**, School of Engineering and Computer Science, Victoria University of Wellington, Cotton Building Rm 358, P.O Box 600, 6140, Wellington, New Zealand

### **Book Review Editor**

**A. Tiwari**, Cranfield University, Cranfield, UK

### **Editorial Board**

**M.B. Abdelhalim**, Arab Academy of Science and Technology and Maritime Transport (AASTMT), Cairo, Egypt  
**A. Acan**, Eastern Mediterranean University (EMU), Turkey  
**B. Ahmed**, Czech Technical University in Prague (Ceské Vysoké Učení Technické)  
**R. Allmendinger**, University of Manchester, Manchester, UK  
**B. K. Ane**, Universität Stuttgart, Stuttgart, Germany  
**J. Antucheviciene**, Vilnius Gediminas Technical University, Vilnius, Lithuania  
**D. R. B. Araujo**, Universidade Federal de Pernambuco (UFPE), Pernambuco, Brazil  
**V.B. Bajic**, Institute for InfoComm Research, Singapore, Singapore  
**R. Ballini**, State University of Campinas, Brazil  
**W. Banzhaf**, Memorial University of Newfoundland, St. John's, Newfoundland and Labrador, Canada  
**C. J. A. Bastos-Filho**, University of Pernambuco (UPE), Recife, Brazil  
**G Beligiannis**, University of Patras, Agrinio, Greece  
**S. Bhattacharyya**, RCC Institute of Information Technology, Beliaghata, Kolkata, India  
**W. Browne**, Victoria University of Wellington, Wellington, New Zealand  
**A. Celikyilmaz**, University of California at Berkeley, Berkeley, California, USA  
**Y. Chai**, Chongqing University, Shapingba, China  
**P.C. Chang**, Yuan Ze University, Chung-Li, Taiwan, ROC  
**S.M. Chen**, National Taiwan University of Science and Technology, Taipei, Taiwan  
**B. Cheng**, Microsoft Research, Redmond, Washington, USA  
**F. Chiclana**, De Montfort University, Leicester, England, UK  
**A. Della Cioppa**, Università degli Studi di Salerno, Italy  
**R.G Crespo**, Universidad Internacional de la Rioja (UNIR), La Rioja, Spain  
**K. Dahal**, University of West Scotland, Paisley, Renfrewshire, Scotland, UK  
**D. Davis**, NUTECH, Inc., Newbury, USA  
**J. De Andrés Sánchez**, Universitat Rovira i Virgili, Reus, Spain  
**A. De Santis**, University of Salerno, Baronissi, Italy  
**F. Diaz Gomez**, Universidad de Valladolid, Segovia, Spain  
**V.N Dieu**, University of Technology, Ho Chi Minh City, Viet Nam

**T.S. Dillon**, La Trobe University, Melbourne, Victoria, Australia  
**P. D'Urso**, Università di Roma "La Sapienza", Rome, Italy  
**M.J. Embrechts**, Rensselaer Polytechnic Institute, Troy, New York, USA  
**F. Espinosa**, Universidad de Alcalá de Henares, Madrid, Spain  
**R Falcon**, Larus Technologies, Ottawa, Canada  
**R. Feldt**, Blekinge Institute of Technology, Karlskrona, Sweden  
**F. Fernández Riverola**, Universidade de Vigo, Vigo (Galiza), Spain  
**A. Ferreira**, Instituto Superior Técnico, Lisboa, Portugal  
**S. Fidanova**, Bulgarian Academy of Sciences, Bulgaria  
**B. Filipic**, Jožef Stefan Institute, Ljubljana, Slovenia  
**U. Fiore**, Università degli studi di Napoli Federico II, Italy  
**W. Froelich**, University of Silesia, Sosnowiec, Poland  
**A. Giagkos**, Aberystwyth University, UK  
**M Gündüz**, Selçuk Üniversitesi, Konya, Turkey  
**P. Gupta**, University of Delhi, Delhi, India  
**C. Gutiérrez Antonio**, Universidad Autónoma de Querétaro, Querétaro, Mexico  
**W.C. Hong**, Oriental Institute of Technology (Taiwan), Taipei, Taiwan, ROC  
**M. Hudec**, University of Economics Bratislava, Slovakia  
**J.A Iglesias**, Universidad Carlos III de Madrid, Madrid, Spain  
**L.C. Jain**, Bournemouth University, Poole, England, UK  
**A. Jastrzebska**, Warsaw University of Technology, Warsaw, Poland  
**M.S. Kiran**, Selçuk Üniversitesi, Konya, Turkey  
**H Kodaz**, Selçuk Üniversitesi, Konya, Turkey  
**R.J. Kuo**, National Taiwan University of Science and Technology, Taipei, Taiwan  
**P.L. Lanzi**, Politecnico di Milano, Milano, Italy  
**J. Li**, Guangzhou University, China  
**C.J. Liao**, National Taiwan University of Science and Technology, Taipei, Taiwan, ROC  
**P.J.G. Lisboa**, Liverpool John Moores University (LJMU), Liverpool, UK  
**A. Liu**, California State University at Fresno, Fresno, California, USA  
**L. Livi**, University of Exeter, Exeter, England, UK  
**P. Lorrentz**, University of Kent, Kent, England, UK  
**P. Maji**, Indian Statistical Institute, Calcutta, India  
**D. Mandal**, National Institute of Technology Durgapur, Durgapur, India  
**R.J Martis**, St. Joseph College of Engineering, Karnataka, India  
**J. Mehnen**, Cranfield University, Cranfield, Bedford, UK  
**P. Melin**, Tijuana Institute of Technology, Tijuana, Mexico  
**L. Meng**, Nanyang Technological University, Nanyang, Singapore  
**A. K. Muda**, Universiti Teknikal Malaysia Melaka, Melaka, Malaysia  
**P. Musilek**, University of Alberta, Edmonton, Alberta, Canada  
**M. Nilashi**, Universiti Teknologi Malaysia, Malaysia  
**K. Onishi**, Kyushu Institute of Technology, Fukuoka, Japan  
**F. Palmieri**, University of Salerno, Salerno, Italy  
**Y. Pan**, National University of Singapore, Singapore  
**R. Perez de Prado**, University of Jaen, Linares, Spain  
**K. Polat**, Abant İzzet Baysal University, Bolu, Turkey  
**C. Porcel**, University of Jaen, Jaen, Spain  
**R.-E. Precup**, Politehnica University of Timisoara, Timisoara, Romania  
**A. Sadeghian**, Ryerson University, Toronto, Ontario, Canada  
**J.L Salmeron**, University Pablo de Olavide, Seville, Spain  
**M. Sayed-Mouchaweh**, High National Engineering School of Mines, France  
**A. Singh**, University of Hyderabad, Hyderabad, India  
**S.W. Su**, University of Technology Sydney, Sydney, New South Wales, Australia  
**C. Sun**, Haidian University, Beijing, China  
**A.H Tan**, Nanyang Technological University, Singapore  
**S. Tavakoli**, University of Sistan and Baluchestan, Zahedan, Iran  
**S.M Thampi**, IIITM, Trivandrum, India  
**G.A. Trunfio**, University of Sassari, Alghero (SS), Italy  
**M.L. (Jackie) Tseng**, LungHwa University of Science and Technology, Guishan, Taiwan, ROC  
**G Ulutagay**, Izmir University, Uckuyular-Izmir, Turkey  
**R. Varela**, University of Oviedo, Spain  
**J. Vaščák**, Technical University Kosice, Kosice, Slovakia  
**M. Vecchio**, Università degli Studi eCampus  
**M. Waleed Fakhr**, Arab Academy of Science and Technology and Maritime Transport (AASTMT), Cairo, Egypt  
**C. Wang**, University of Science and Technology of China (USTC), Suzhou, China  
**C. Wang**, University of Science and Technology of China (USTC), Suzhou, China  
**R. Wang**, Massey University, New Zealand  
**R Weber**, Universidad de Chile, Santiago, Chile

**K.C Wong**, City University of Hong Kong  
**M. J. Wozniak**, Wroclaw University of Technology, Wroclaw, Poland  
**B. Xue**, Victoria University of Wellington, Wellington, New Zealand  
**Y Yongping Pan**, National University of Singapore, Singapore  
**P. Zanetti**, Università degli Studi di Napoli Parthenope, Naples, Italy  
**Z. Zeng**, Huazhong University of Science and Technology, Wuhan, China  
**B.-T. Zhang**, Seoul National University (SNU), Seoul, The Republic of Korea  
**Y. J. Zheng**, Zhejiang University of Technology (ZJUT), Zhejiang, China  
**H.J. Zimmermann**

***Industrial Panel***

**B. Azvine**, British Telecommunications plc, London, England, UK  
**E. Baum**  
**M. Herdy**, INPRO mbH, Berlin, Germany  
**T. Iokibe**, Research Institute of Application Technologies, Yokohama-Shi, Japan  
**M. Olhofer**, Honda Research Institute Europe GmbH, Offenbach/Main, Germany  
**S. Patel**, Unilever Research and Development, Wirral, UK  
**A. Satyadas**, Lotus Software, IBM Software Group, Cambridge, Massachusetts, USA  
**A. Wright**, Advanced Technology Centre - Sowerby, Bristol, England, UK

## GUIDE FOR AUTHORS

---

### INTRODUCTION

**Applied Soft Computing** is an international journal promoting an integrated view of soft computing to solve real life problems. Soft computing is a collection of methodologies, which aim to exploit tolerance for imprecision, uncertainty and partial truth to achieve tractability, robustness and low solution cost. The focus is to publish the highest quality research in application and convergence of the areas of Fuzzy Logic, Neural Networks, Evolutionary Computing, Rough Sets and other similar techniques to address real world complexities.

#### *Types of Paper*

Authors are invited to submit technical papers (no limit on max. number of pages), state of the art survey papers, industry reports (max. 5 pages) and book reviews. Authors are encouraged to utilize the opportunity given by this on-line publication to include animations, software demonstrations, and video clips etc. The papers will be published on Elsevier Web Site as soon as they are accepted, which enables authors to publish their work FAST and readers get the latest work in Soft Computing on their desktop!

#### *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)
- Relevant declarations of interest have been made
- 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 2400**, excluding taxes. Learn more about Elsevier's pricing policy: <http://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](#).

This journal has an embargo period of 24 months.

#### *Elsevier Publishing Campus*

The Elsevier Publishing Campus ([www.publishingcampus.com](http://www.publishingcampus.com)) is an online platform offering free lectures, interactive training and professional advice to support you in publishing your research. The College of Skills training offers modules on how to prepare, write and structure your article and explains how editors will look at your paper when it is submitted for publication. Use these resources, and more, to ensure that your submission will be the best that you can make it.

#### *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

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.

## Referees

Please submit, with the manuscript, the names and addresses of 4 potential referees.

## Additional Information

Appeal Process:

As part of the quality improvement of the Journal, it is also important that the authors are given the highest importance within the system. If you are not happy with the overall recommendation from the Editor in Chief on your paper, you could appeal once against the decision. The process for appeal is:

1. You write an email to the Editor in Chief explaining the reasons of your unhappiness and that you would like to appeal. Email to: [mkoeppen@ieee.org](mailto:mkoeppen@ieee.org)
2. The Editor in Chief will send your paper and all the reviews + copy of his overall decision to Prof. Witold Pedrycz (Arbitrator).
3. The arbitrator will communicate his comments to the Editor in Chief, and if necessary, Editor in Chief will reconsider his decision on the paper. Editor in Chief will communicate the results of the Appeal to the author at the earliest. There is only one appeal possible for each paper.

## PREPARATION

### 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*

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 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.

### *Vitae*

Include in the manuscript a short (maximum 100 words) biography of each author, along with a passport-type photograph accompanying the other figures.

### **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 and Enhancement service to ensure the best presentation of their images and in accordance with all technical requirements: [Illustration Service](#).

Highlights are a short collection of bullet points that convey the core findings of the article. Highlights are mandatory 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 listing of 3-10 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.

### *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.

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) 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. 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**

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 encouraged.

A DOI can be used to cite and link to electronic articles where an article is in-press and full citation details are not yet known, but the article is available online. 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](#) 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/applied-soft-computing-journal>

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:

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

Reference to a book:

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

Reference to a chapter in an edited book:



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

Reference to a website:

[4] Cancer Research UK, Cancer statistics reports for the UK. <http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/>, 2003 (accessed 13.03.03).

Reference to a dataset:

[dataset] [5] M. Oguro, S. Imahiro, S. Saito, T. Nakashizuka, Mortality data for Japanese oak wilt disease and surrounding forest compositions, Mendeley Data, v1, 2015. <https://doi.org/10.17632/xwj98nb39r.1>.

### **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. 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.

### **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.

### **Interactive MATLAB Figure Viewer**

This journal features the Interactive MATLAB Figure Viewer, allowing you to display figures created in MATLAB in the .FIG format in an interactive viewer next to the article. [More information and submission instructions](#).

### **Interactive plots**

This journal enables you to show an Interactive Plot with your article by simply submitting a data file. [Full instructions](#).

## **NOTES ON REVIEW ARTICLES FOR AUTHORS**

Review Article is the article type in EES for survey and review papers. These are published time to time, serve as a valuable reference material reflecting upon the current developments in a certain area of research and applications, typically aligned with the scope of the journal and aimed at a relatively broad readership.

Expertise of the author and active involvement in the research area are a prerequisite for a successful survey/review material. Upon submission to ASOC, an extended bio can be entered as part of the letter to the editor to help the handling editor and reviewers, a condensed version can be put at the

end of the survey. Writing a good survey is an arduous and challenging task. Reviewing a survey paper is also a very time-consuming task that requires a significant involvement of highly experienced reviewers.

When preparing a survey, one has to clearly identify the audience to whom this survey is catered (e.g., newcomers, specialists, practitioners, etc.) and specify the main objective of the survey work. It is anticipated that a good, useful, and of high impact survey has to include:

- (i) A well-thought-out taxonomy of the research completed in the area. A prudently balanced exposure of the material is essential
- (ii) critical, yet clearly articulated and presented in an unbiased manner, views of the author of the survey who has been working intensively in the area and has gathered solid evidence as to the quality, relevance and impact of the studies reported in the literature
- (iii) Identification of the key objectives formulated in the area and the main ways in which they have been addressed
- (iv) Discussion on related application areas offered at a certain level of generality; too specific material with a lot of domain details is misleading and accessible to a narrow group of readers familiar with a particular application domain
- (v) Comparative analysis, limitations, drawbacks, misleading opinions expressed in the existing literature. Different, maybe even conflicting, views expressed in the existing studies are important to be discussed and put in a right perspective
- (vi) A prudently established balance between a general, formula-free exposure and too dry formula-loaded coverage of the topic
- (vii) well-grounded conclusions as to the current progress and possible future prospects and promising directions, including open problems to be focused on.

In contrast, a good survey should NOT be:

- (i) A collection of abstracts of the papers without any critical assessment.
- (ii) a survey based solely on a literature review without authors perspective. Usually, such material does not sound convincing and could be of a very limited value and impact.
- (iii) A collection of graphs, pie plots, and others displaying general statistics and tendencies in the area but not being supported by any in-depth analysis.
- (iv) A very verbally biased presentation of the material lacking any depth of exposure.

Preparing a good survey the right way (some hints):

(i) How many papers should be referenced? Does a good survey always need hundreds of references? Doesn't a huge list of references already demonstrate honorable effort of authors? But see the comments given in this text: nothing really requires such a huge number of references. A survey can also be good with a lower number of discussed papers, for example with a focus on key papers or most cited papers.

(ii) Clarify the used bibliometric and retrieval method: the survey will necessarily involve a paper selection by authors, and thus has to be subject to the same scientific carefulness like any other kind of scientific report. Means: reproducible way of achieving results, clear statement of selection criteria, a motivated "material and method" section, judgment/justification of degree of completeness or degree of coverage.

(iii) Decide for one way among the possible ways of presenting results (like chronological, in historical context, by method grouping, by problem classes, by used paradigms) and follow this line. For example, it appears that tables with clearly introduced column headings are a generally good way, in favor of plain statistics and dozens of page-filling pie charts.

(iv) Before starting to prepare a survey at all, authors should ask themselves: is the survey (really) timely? And validate it in an objective way, e.g. by recent increase of publications in the field, new technology trends, or new application fields.

## **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>