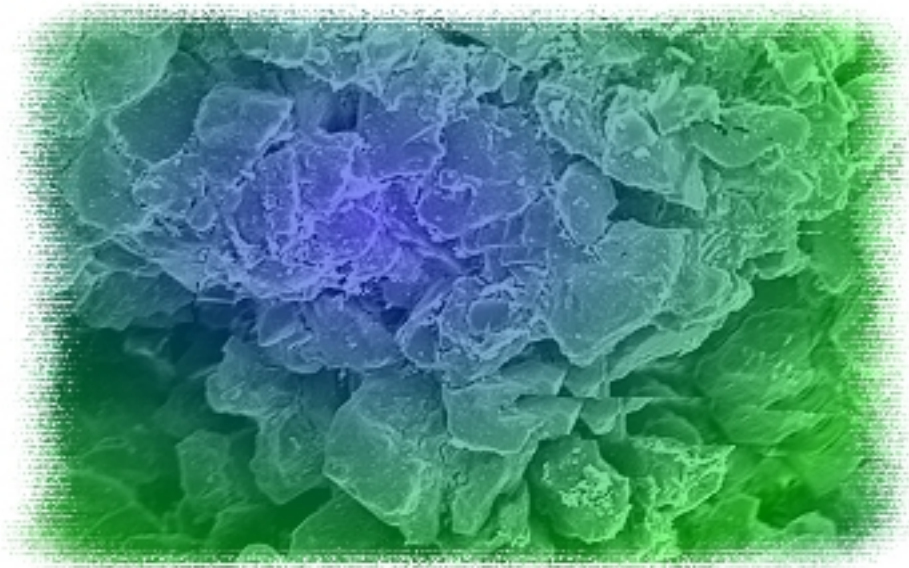


# Journal of Applied Engineering Science & Technology



## Issue 1 (June 2014)

Eurocode 7 on 'Geotechnical design': a code for soil-structure interaction

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Behavior of Soil-structure interfaces under cyclic loading for large numbers of cycles: Application to piles

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Study of the behavior of bridges under seismic loads considering soil-structure interaction

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# Volume 1

# 2014-15

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# Journal of Applied Engineering Science & Technology

## Volume 1 (2014-15)

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## 1. About Journal of Applied Engineering Science & Technology, JAEST

### 1.1. Aims and Scope

The J. Appl. Eng. Sci. Technol., JAEST, (ISSN 2352-9873) is a peer-reviewed biannual journal published in both electronic and print versions by the Faculty of Sciences and Technology, FST, of the University of Biskra. The JAEST provides immediate open access to its content on the principle that making research freely available to the public supports a greater global exchange of knowledge.

The objective of this journal is to communicate recent and projected advances in applied engineering science & technology. The scope of JAEST covers a wide spectrum of subjects including:

- A- Electrical, Electronics and Automatic Engineering;
- B- Thermal, Mechanical and Materials Engineering;
- C- Geotechnical and Civil Engineering;
- D- Environmental and Water Resource Engineering;
- E- Chemical and Process Engineering;
- F- Architectural and Building Engineering.

The journal welcomes manuscripts in English or French that provide information not previously published in journals in the fields of engineering science research. The JAEST publishes also special issues containing the best papers selected from various conferences in sub-fields of applied engineering science and technology.

### 1.2. Journal Publication Process

1. **Manuscript submission:** A prospective author should submit the manuscript for publication consideration in electronic file, preferably in MS Word, via e-mail attachment to the Editor-in-Chief, at [jaest@outlook.fr](mailto:jaest@outlook.fr).
2. **Peer Review Process:** All the submitted papers will undergo a peer-review process. Once a paper is reviewed and accepted for publication in the JAEST, it will be edited to conform to the Journal's style and format.
3. **Production process:**
  - **Proofs and copyright:** The production office prepares and sends the proofs and the copyright form to the corresponding author. Corrections should be restricted to typesetting errors and minor changes. The corresponding author, on behalf of all authors, must sign the copyright form. A scanned copy of the document must be sent by email to the production office of the journal.
  - **Online and print publications:** Once the author proofs has been returned, the final PDF version of the article will be made and the article will be assigned to the current Issue 'In Progress'. This will make the article available online, accessible, searchable and fully citable. Once the volume is completed, the issues are printed and published in a single document.

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Journal of Applied Engineering Science & Technology  
Faculty of Sciences and technology.  
Univ. Biskra.  
BP 145, Biskra 07000, Algeria.

Tel / fax: +213 (0)33 543 239  
Web site: <http://revues.univ-biskra.dz/index.php/jaest>  
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## Editorial preface to the first volume of Journal of Applied Engineering Science & Technology

We are pleased to bring you this inaugural volume of the Journal of Applied Engineering Science & Technology, completed in 20<sup>th</sup> March 2015 with two issues of 10 papers in 77 pages in total.

The Journal of Applied Engineering Science & Technology, abbreviated as JAEST or as J. Appl. Eng. Sci. Technol., is a peer-reviewed biannual journal published, in both electronic and print versions, by the Faculty of Sciences and Technology, FST, of the University of Biskra. The JAEST's scope covers a wide spectrum of subjects including: A- Electrical, Electronics and Automatic Engineering; B- Thermal, Mechanical and Materials Engineering; C- Geotechnical and Civil Engineering; D- Environmental and Water Resource Engineering; E - Chemical and Process Engineering; and F- Architectural and Building Engineering. JAEST provides immediate open access to the journal content on the principle that making research freely available to the public supports a wider global exchange of knowledge. To providing greater visibility for researchers' work, the journal publishes manuscripts in English or French not previously published. JAEST publishes also special issues containing the best papers selected from various conferences in sub-fields of applied engineering science and technology.

After the assignment of JAEST's ISSN (2352-9873) in 30<sup>th</sup> January 2014, the editorial board proceeded to the development and finalization of the JAEST paper format and the content of JAEST's website (For further information, please refer to Appendix A, B, C & D at the end of this document). In June 2014, the first issue of JAEST is completed and published online. This issue is a collection of five selected papers from the workshop on the characterization and modeling of geomaterials, CMG14, held at the University of Biskra in February 2014 (Frank 2014; Bekki et al. 2014; Delage 2014; Messast et al. 2014; Pereira 2014). We have received a good response to this special issue of JAEST (section C: Geotechnical and Civil Engineering) from scientists and researchers, particularly from the Algerian and French research institutions. The Editorial Board is pleased by this response and is very committed to build the journal as an international platform to communicate recent and projected advances in applied engineering science & technology.

As a result of the success of the first issue, the second issue of JAEST is published in February-March 2015 with three sections, namely:

Section A (Electrical, Electronics and Automatic Engineering) contains the investigation of Taibi et al. (2015) from the University of Biskra and the University of Orléans. In this article, the authors presented a research work on the stability analysis of the extended Kalman filter for Permanent Magnet Synchronous Motor;

Section B (Thermal, Mechanical and Materials Engineering) contains a single paper from the University of Biskra (Labeled et al. 2015). The authors conducted a study of the feasibility of solar desiccant cooling systems in Algerian sahara, particularly in the region of Biskra. The authors present also the results of an experimental investigation of solar flat plate collectors (FPCs) to test and estimate their heat regeneration capacity for solid desiccant cooling applications in the region of Biskra;

Section C (Geotechnical and Civil Engineering) contains three papers, all in the fields of geotechnical engineering. Khemissa et al. (2015), from the University of M'sila, presented a state-of-the art review on the behavior of problematic soils in arid and semi-arid regions in Algeria, where significant damages frequently appear affecting the road infrastructures, roadway systems and various networks and other small civil and industrial constructions. The article deals with characterization and treatment experimental studies on some Algerian expansive natural soils, including those conducted on M'sila expansive clays. Rahmouni et al. 2015, from the University of Biskra, presented a numerical analysis using the FLAC3D (Fast Lagrangian Analysis of Continua in 3 Dimensions) in order to investigate the influence of the inclined blocs on the behavior of geogrid-reinforced soil segmental retaining walls. The third article was received from the University of Batna (Baheddi and Youb 2015). The authors investigated the seismic stability of bridges considering the soil structure interaction, which is one of the most important phenomena in the field of earthquake engineering that can influence the behavior of the structure and thus its vulnerability.

From statistical point of view, 60% of the authors are researchers from outside of the University of Biskra. The concerned institutions are the Universities of Tiaret, Blida, Skikda, Bejaia, Jijel, M'sil and Batna from Algeria; and the University of Orléans, the University Paris-Est Créteil and the Ecole des Ponts ParisTech from France. In addition, if only the affiliation of the first author is considered, we have seven papers from outside of the University of Biskra; four papers from Algerian universities and 3 papers from French research institutions. These statistics show that the international dimension of JAEST is already apparent in this inaugural volume.

Finally, on behalf of the editorial team of JAEST, I would like to thank all the authors, readers, reviewers and editors for their contribution to the development of a journal of high professional standards. I would like also to thank the Rector of the University of Biskra and the Dean of the faculty of sciences and technology for helping the team to achieve its goals.

April 2015

Professor Adel Benchabane  
Editor-in-Chief

**Appendix A:** Editorial Policies (pages 79-80).

**Appendix B:** Responsible research publication: Standards for authors. The content of this appendix is mainly based on the guidelines and standards developed by Triaridis and Kyrgidis (2010) and Wager and Kleinert (2011 & 2013) (pages 81-83).

**Appendix C:** Copyright form (page 85).

**Appendix B:** Author Guidelines (pages 87-88).

## References

- Baheddi, M., Y. Youb (2014) Study of the behavior of bridges under seismic loads considering soil-structure interaction. *Journal of Applied Engineering Science & Technology* 1(2): 71-77.
- Bekki, H., B. Tali, J. Canou, J.-C. Dupla, A. Bouafia (2014) Behavior of Soil-structure interfaces under cyclic loading for large numbers of cycles: Application to piles. *Journal of Applied Engineering Science & Technology* 1(1): 11-16.
- Delage, P. (2014) Geotechnical problems due to the collapse of unsaturated soils: the case of loess from northern France. *Journal of Applied Engineering Science & Technology* 1(1): 17-22.
- Frank, R. (2014) Eurocode 7 on 'Geotechnical design': a code for soil-structure interaction. *Journal of Applied Engineering Science & Technology* 1(1): 1-10.
- Khemissa, M., A. Mahamedi, L. Mekki (2015) Problematic soil mechanics in the Algerian arid and semi-arid regions: Case of M'sila expansive clays. *Journal of Applied Engineering Science & Technology* 1(2): 37-41.
- Labeled, A., A. Rouag, A. Benchabane, N. Moumami, M. Zerouali (2015) Applicability of solar desiccant cooling systems in Algerian Sahara: Experimental investigation of flat plate collectors. *Journal of Applied Engineering Science & Technology* 1(2): 61-69.
- Messast, S., M. Hazem, N. Bousbia, H. Mokhbi (2014) Numerical modeling of the face reinforcement of Djebel El-Kantour tunnel face (highway east-west). *Journal of Applied Engineering Science & Technology* 1(1): 23-29.
- Pereira, J.M. (2014) Time effects in geomaterials. *Journal of Applied Engineering Science & Technology* 1(1):31-36.
- Rahmouni, O., A. Mabrouki, D. Benmeddour, M. Mellas (2015) Numerical study of geogrid-reinforced segmental earth retaining wall. *Journal of Applied Engineering Science & Technology* 1(2): 43-49.
- Taibi, D., A. Titaouine, F. Benchabane, O. Bennis (2015) Stability analysis of the extended Kalman filter for Permanent Magnet Synchronous Motor. *Journal of Applied Engineering Science & Technology* 1(2): 51-60.
- Triaridis, S., & Kyrgidis, A. (2010). Peer review and journal impact factor: the two pillars of contemporary medical publishing. *Hippokratia*, 14(Suppl 1): 5-12.
- Wager, E., & Kleinert, S. (2013). Why do we need international standards on responsible research publication for authors and editors?. *Journal of global health*, 3(2): 1-7.
- Wager E & Kleinert S (2011) Responsible research publication: international standards for authors. A position statement developed at the 2nd World Conference on Research Integrity, Singapore, July 22 - 24, 2010. Chapter 50 in: Mayer T & Steneck N (eds) Promoting Research Integrity in a Global Environment. Imperial College Press / World Scientific Publishing, Singapore (pp 309-16). (ISBN 978-981-4340-97-7)1.

## Editorial Policies

### 1. Aims and Scope

The Journal of Applied Engineering Science & Technology, JAEST, (ISSN 2352-9873) is a peer-reviewed biannual journal dedicated to the applied engineering sciences and technology. The objective of this journal is to communicate recent and projected advances in applied engineering science & technology.

The scope of JAEST covers a wide spectrum of subjects including:

- A. Electrical, Electronics and Automatic Engineering;
- B. Thermal, Mechanical and Materials Engineering;
- C. Geotechnical and Civil Engineering;
- D. Environmental and Water Resource Engineering;
- E. Chemical and Process Engineering;
- F. Architectural and Building Engineering.

The journal welcomes manuscripts in English or French that provide information not previously published in the fields of engineering science research. The JAEST publishes also special issues containing the best papers selected from various conferences in sub-fields of applied engineering science and technology.

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### 3. Author Fees

There are no submission or publication fees.

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1. The article has not been previously published, elsewhere either in print or online, nor is it before another journal for consideration (If not, email explanation should be communicated immediately to the Editor).
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3. The paper has been prepared according to the research and publication ethics listed below, also available in website of the JAEST.
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### 5. Peer Review Process

All the submitted papers will be subjected to the following peer review process:

1. The Editor-in-Chief initially reviews briefly all articles submitted to the JAEST for possible publication.
2. A notification of successful submission is sent to the corresponding author.
3. A Section Editor is assigned to take charge of the start of the peer review process.
4. After initial screening, the article is sent out to at least two reviewers with a Referee's Report Form. This process can take between four and eight weeks.
5. Based on the comments of the Referees and the Section Editor, the Editor-in-Chief makes decisions to accept (as is it, with minor or major revisions) or reject paper.
6. After the acceptance decision, The Editor returns reviews to the authors, asking for a prompt and appropriate revision. Revisions must be completed within two months.
7. After receiving the new version of the article with required corrections, the Editor-in-Chief may accept, reject, accept with minor alterations, or sent out for third review.

## 5. Research and Publication Ethics

### Responsibilities of authors (Researchers)

- The research being reported should have been conducted in an ethical and responsible manner and should comply with all relevant legislation.
- Researchers should present their results clearly, honestly, and without fabrication, falsification or inappropriate data manipulation.
- Researchers should strive to describe their methods clearly and unambiguously so that their findings can be confirmed by others.
- Researchers should adhere to publication requirements that submitted work is original, is not plagiarised, and has not been published elsewhere.
- Authors should take collective responsibility for submitted and published work.
- The authorship of research publications should accurately reflect individuals' contributions to the work and its reporting.
- Funding sources and relevant conflicts of interest should be disclosed.

For more detail about the standards for authors, please refer to Appendix B.

### Responsibilities of Editors

- Editors are accountable and should take responsibility for everything they publish.
- Editors should make fair and unbiased decisions independent from commercial consideration and ensure a fair and appropriate peer review process.
- Editors should adopt editorial policies that encourage maximum transparency and complete, honest reporting.
- Editors should guard the integrity of the published record by issuing corrections and retractions when needed and pursuing suspected or alleged research and publication misconduct.
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- Editors should have appropriate policies in place for handling editorial conflicts of interest.

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- Expertise: A reviewer should accept manuscripts for review only in his areas of expertise.
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- Ethical Concerns: The reviewer is responsible for reporting suspected duplicate publication, fraud, plagiarism, or ethical concerns about the use of animals or humans in the research.
- Nobility: A reviewer should write reviews in a collegial, constructive manner.

## 6. Abstracting and Indexing

Google Scholar

## Responsible research publication: Standards for authors

This section aims to establish standards for authors of scholarly research publications and to describe responsible research reporting practice. All the information sources of the below standards were cited in the editorial preface to the first volume of the JAEST, March 2015 [Triaridis and Kyrgidis (2010) & Wager and Kleinert (2011 & 2013)].

### 1. Soundness and reliability

1. The research being reported should have been conducted in an ethical and responsible manner and follow all relevant legislation. [See also the Singapore Statement on Research Integrity, [www.singaporestatement.org](http://www.singaporestatement.org)]
2. The research being reported should be sound and carefully executed.
3. Researchers should use appropriate methods of data analysis and display (and, if needed, seek and follow specialist advice on this).
4. Authors should take collective responsibility for their work and for the content of their publications. Researchers should check their publications carefully at all stages to ensure methods and findings are reported accurately. Authors should carefully check calculations, data presentations, typescripts/submissions and proofs.

### 2. Honesty

1. Researchers should present their results honestly and without fabrication, falsification or inappropriate data manipulation. Research images (eg, micrographs, x-rays, pictures of electrophoresis gels) should not be modified in a misleading way.
2. Researchers should strive to describe their methods and to present their findings clearly and unambiguously. Researchers should follow applicable reporting guidelines. Publications should provide sufficient detail to permit experiments to be repeated by other researchers.
3. Reports of research should be complete. They should not omit inconvenient, inconsistent or inexplicable findings or results that do not support the authors' or sponsors' hypothesis or interpretation.
4. Research funders and sponsors should not be able to veto publication of findings that do not favour their product or position. Researchers should not enter agreements that permit the research sponsor to veto or control the publication of the findings (unless there are exceptional circumstances, such as research classified by governments because of security implications).
5. Authors should alert the editor promptly if they discover an error in any submitted, accepted or published work. Authors should cooperate with editors in issuing corrections or retractions when required.
6. Authors should represent the work of others accurately in citations and quotations.
7. Authors should not copy references from other publications if they have not read the cited work.

### 3. Balance

1. New findings should be presented in the context of previous research. The work of others should be fairly represented. Scholarly reviews and syntheses of existing research should be complete, balanced, and should include findings regardless of whether they support the hypothesis or interpretation being proposed. Editorials or opinion pieces presenting a single viewpoint or argument should be clearly distinguished from scholarly reviews.
2. Study limitations should be addressed in publications.

### 4. Originality

1. Authors should adhere to publication requirements that submitted work is original and has not been published elsewhere in any language. Work should not be submitted concurrently to more than one publication unless the editors have agreed to co-publication. If articles are co-published this fact should be made clear to readers.
2. Applicable copyright laws and conventions should be followed. Copyright material (eg, tables, figures or extensive quotations) should be reproduced only with appropriate permission and acknowledgement.
3. Relevant previous work and publications, both by other researchers and the authors' own, should be properly acknowledged and referenced. The primary literature should be cited where possible.
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## 5. Transparency

1. All sources of research funding, including direct and indirect financial support, supply of equipment or materials, and other support (such as specialist statistical or writing assistance) should be disclosed.
2. Authors should disclose the role of the research funder(s) or sponsor (if any) in the research design, execution, analysis, interpretation and reporting.
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1. The research literature serves as a record not only of what has been discovered but also of who made the discovery. The authorship of research publications should therefore accurately reflect individuals' contributions to the work and its reporting.
2. In cases where major contributors are listed as authors while those who made less substantial, or purely technical, contributions to the research or to the publication are listed in an acknowledgement section, the criteria for authorship and acknowledgement should be agreed at the start of the project. Ideally, authorship criteria within a particular field should be agreed, published and consistently applied by research institutions, professional and academic societies, and funders. While journal editors should publish and promote accepted authorship criteria appropriate to their field, they cannot be expected to adjudicate in authorship disputes. Responsibility for the correct attribution of authorship lies with authors themselves working under the guidance of their institution. Research institutions should promote and uphold fair and accepted standards of authorship and acknowledgement. When required, institutions should adjudicate in authorship disputes and should ensure that due process is followed.
3. Researchers should ensure that only those individuals who meet authorship criteria (ie, made a substantial contribution to the work) are rewarded with authorship and that deserving authors are not omitted. Institutions and journal editors should encourage practices that prevent guest, gift, and ghost authorship.

### Note:

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1. All authors should have read and be familiar with the reported work and should ensure that publications follow the principles set out in these guidelines. In most cases, authors will be expected to take joint responsibility for the integrity of the research and its reporting. However, if authors take responsibility only for certain aspects of the research and its reporting, this should be specified in the publication.
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4. Authors should respond appropriately to post-publication comments and published correspondence. They should attempt to answer correspondents' questions and supply clarification or additional details where needed.

## 8. Adherence to peer review and publication conventions

1. Authors should follow publishers' requirements that work is not submitted to more than one publication for consideration at the same time.
2. Authors should inform the editor if they withdraw their work from review, or choose not to respond to reviewer comments after receiving a conditional acceptance.
3. Authors should respond to reviewers' comments in a professional and timely manner.
4. Authors should respect publishers' requests for press embargos and should not generally allow their findings to be reported in the press if they have been accepted for publication (but not yet published) in a scholarly publication. Authors and their institutions should liaise and cooperate with publishers to coordinate media activity (eg, press releases

and press conferences) around publication. Press releases should accurately reflect the work and should not include statements that go further than the research findings.

### **9. Responsible reporting of research involving humans or animals**

1. Appropriate approval, licensing or registration should be obtained before the research begins and details should be provided in the report (eg, Institutional Review Board, Research Ethics Committee approval, national licensing authorities for the use of animals).
2. If requested by editors, authors should supply evidence that reported research received the appropriate approval and was carried out ethically (eg, copies of approvals, licences, participant consent forms).
3. Researchers should not generally publish or share identifiable individual data collected in the course of research without specific consent from the individual (or their representative). Researchers should remember that many scholarly journals are now freely available on the internet, and should therefore be mindful of the risk of causing danger or upset to unintended readers (eg, research participants or their families who recognise themselves from case studies, descriptions, images or pedigrees).
4. The appropriate statistical analyses should be determined at the start of the study and a data analysis plan for the prespecified outcomes should be prepared and followed. Secondary or post hoc analyses should be distinguished from primary analyses and those set out in the data analysis plan.
5. Researchers should publish all meaningful research results that might contribute to understanding. In particular, there is an ethical responsibility to publish the findings of all clinical trials. The publication of unsuccessful studies or experiments that reject a hypothesis may help prevent others from wasting time and resources on similar projects. If findings from small studies and those that fail to reach statistically significant results can be combined to produce more useful information (eg, by meta-analysis) then such findings should be published.
6. Authors should supply research protocols to journal editors if requested (eg, for clinical trials) so that reviewers and editors can compare the research report to the protocol to check that it was carried out as planned and that no relevant details have been omitted. Researchers should follow relevant requirements for clinical trial registration and should include the trial registration number in all publications arising from the trial.







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- The corresponding author is responsible for having ensured that this agreement has been reached, that all authors have agreed to be so listed and approved the manuscript submission to the JAEST, for managing all communication between the journal and all co-authors, before and after publication.
- Any changes to the author list after submission, such as a change in the order of the authors, or the deletion or addition of authors, needs to be approved by every author.
- The research being reported should have been conducted in an ethical and responsible manner and should comply with all relevant legislation.
- Researchers should present their results clearly, honestly, and without fabrication, falsification or inappropriate data manipulation.
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## Author Guidelines

### 0. Submission Preparation Checklist

As part of the submission process, authors are required to ensure their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to these guidelines:

- The submission has not been previously published, nor is it before another journal for consideration (or an explanation has been provided in Comments to the Editor).
- The responsibility for the contents of the paper rests upon the authors and the paper has prepared according to the research and publication ethics (Appendix A) and standards for authors (Appendix B) available at the JAEST website.
- Authors of submitted papers automatically agree to the terms of the Copyright Notice (Appendix D).
- The authors must indicate in the submission email the topic of the article. The seven topics of JAEST are as follows: A- Electrical, Electronics and Automatic Engineering; B- Thermal, Mechanical and Materials Engineering; C- Geotechnical and Civil Engineering; D- Environmental and Water Resource Engineering; E- Chemical and Process Engineering; F- Architectural and Building Engineering.
- The text adheres to the stylistic and bibliographic requirements outlined in the Author Guidelines as follows.

### 1. Preparation of the manuscript

**File format:** All manuscripts should be submitted electronically in ms-word (MS Word 2007 or an earlier version).

**Language:** Please write your text in good English (American or British usage is accepted, not a mixture of these) or French.

**Manuscript content:**

- **English paper:** Material should be placed in the following order: title, author names, all address of author institutions, abstract, keywords, topic (A . . . F), text, acknowledgments, appendices and references.
- **French paper:** Material should be placed in the following order: English title, French title, author names, all address of author institutions, English abstract, French abstract, English and French key words, topic (A . . . F), text, acknowledgments, appendices and references.

**Page setup**

- Margins: Top: 2.5cm, Bottom: 2.5cm, Left: 2.5cm, Right: 2.5cm.
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- Title of article: Calibri or Time New Roman, Font size 16.
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- Subdivision: Calibri or Time New Roman, Font size 12. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc.
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- Electronic artwork: TIFF (or JPEG): Color or grayscale photographs, keep to a minimum of 300 dpi. All illustrations should be inserted immediately after the citation in the text or at the end of the article.
- Figure captions: Ensure that each illustration has a caption. Supply captions separately, not attached to the figure.
- Tables: Calibri or Times New Roman, Font size 10, Inserted immediately after the citation in the text.
- **Reference style:**

**Citation**

Cite references in the text by name and year in parentheses, as in the following examples:

radiation is expressed by the Hottel-Whillier-Bliss equation (Duffie and Beckman 2013)

This observation was confirmed by Ouamane and Lempérière (2006).

This mechanism has been widely studied (Soltani et al. 2003; Zahi et al. 2003; Betka and Moussi 2004).

**Reference list**

Reference list should appear at the end of the paper and should be alphabetized by the last names of the first author of each work.

**Some examples:**

**Reference to a journal publication:**

Betka, A., A. Moussi (2004) Performance optimization of a photovoltaic induction motor pumping system, *Renewable Energy* 29(14): 2167-2181.

**Reference to a book:**

Duffie, J.A., W.A. Beckman (2013) *Solar Engineering of Thermal Processes: Fourth Edition*, New York, Wiley.

**Reference to a chapter in an edited book:**

El Hadrami, I., A. El Hadrami (2009) Breeding date palm, in Breeding Plantation Tree Crops: Tropical Species. Ed. S.M. Jain and P.M. Priyadarshan, New York, Springer, pp. 191-216.

**Reference to a paper presented at a conference:**

Ouamane, A., F. Lempérière (2006) Design of a new economic shape of weir. Proceedings of the International Symposium on Dams in the Societies of the 21st Century, Barcelona, Spain, pp. 463-470.

**2. Submitting Your Manuscript**

Authors are asked to submit manuscripts electronically, preferably in MS Word, via e-mail attachment to the Editor-in-Chief.

**3. Peer Review Process**

All the submitted papers will undergo a peer-review process. Once a paper is reviewed and accepted for publication in the JAEST, it will be edited to conform to the Journal's style and format.

**4. Proofs**

Proofs will be sent to the corresponding author and should be returned within 3 days of receipt. Corrections should be restricted to typesetting errors and minor changes.

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Once the volume is completed, the issues are printed as a single document.