

Instructions for Authors

Shape Memory and Superelasticity publishes papers that focus on shape memory materials research with contributions from materials science, materials engineering, experimental and theoretical mechanics, mathematics, and physics. Of particular interest are papers that lead to understanding the response of these materials to external stimuli such as force, displacement, temperature, magnetic fields, irradiation, corrosive media, and so on in pursuit of uncovering new phenomenon, new materials and new applications as follows: (i) the journal papers will examine these materials utilizing the principles of continuum mechanics, micromechanics, microstructurally informed constitutive modeling, atomistic models, mathematics of microstructures, and other methodologies; (ii) the development and use of advanced experimental techniques to expose and understand the shape memory response including thermal and mechanical cycling, application of magnetic, and other external fields; (iii) the exploration and further understanding of shape memory materials due to fatigue, fracture, and environmental factors are of significant interest; and (iv) novel applications of the materials will be explored in all areas including bio-medical devices, actuators, thin films, robotics, mechanical and aerospace engineering components, civil engineering structures, and micro-electromechanical systems (MEMS).

Specifically, the journal will include the following topics:

- 1) Behavior of all classes of shape memory materials including metals, non-metals (such as shape memory ceramics, shape memory polymers), and shape memory composites
- 2) Stress-strain response in thermo-mechanical loadings (experimental observations and modeling)
- 3) Life prediction methodologies (different approaches including fracture mechanics, role of grain boundaries, the role of slip and twinning on shape memory behavior, crack nucleation modeling)
- 4) Thermodynamics of the transformation, the fundamentals of superelasticity and related areas such as twinning, detwinning, and residual martensites
- 5) Solutions of shape memory problems in industry (including biomedical, electronic, MEMS, microdevice and microactuator applications, and applications in aero-, civil-, mechanical, electrical, and other engineering disciplines)
- 6) Critical experiments that shed insight into shape memory behavior including digital image correlation, diffraction methodologies (including those using high energy sources), in-situ microscopy, infra-red imaging techniques, and conventional and nano mechanical testing methods
- 7) Novel experimental techniques for shape memory response (ranging from specimens of micron size, wires, laboratory specimens, rings, bent beams, complex shapes to components, and complex loading conditions)
- 8) Single crystals and polycrystals of shape memory metals highlighting the role of texture and orientation effects on superelasticity and recoverable strain levels, and the role of different processing methods on the SMA response
- 9) Shape memory response under coupled mechanical-magnetic fields, irradiation effects, magnetic shape memory and thermo-caloric effects, and high temperature applications
- 10) Alloy design (with cognizance of the chemical composition of underlying phases and crystallography) to tailor the properties to achieve shape memory materials with improved functionality in applications

- 11) Surface engineering, corrosion, and interaction of SMAs with fluids, behavior of shape memory thin films, and shape memory at nanoscale
- 12) Application of atomistic methods (density functional theory and molecular dynamics) to gain insight into properties of such materials and enlighten shape memory alloy design with these materials
- 13) Production and processing of shape memory alloys, including shape memory metals, shape memory polymers, shape memory ceramics, thin films, nanosize objects and specimens, and hybrids

Shape Memory and Superelasticity supplies the readers with knowledge focused on shape memory materials and highlighting contributions that could influence other disciplinary fields in engineering, sciences, and medicine. The journal brings together the latest innovations in this ever-expanding field. The journal provides a forum for researchers, scientists, and engineers of varied disciplines to access information about shape memory materials. The journal is aimed at disclosing the most pertinent needs in this area and providing a systematic approach to address these needs with experiments, theory, and simulation. Articles are authored to describe results from original research and provide technical information that can be appreciated by readers in the subdisciplines while providing significant results that may foster research in applications and related areas. Therefore, the information provided can be utilized in many different disciplines, including medical device design, energy harvesting, structural damping, and so on.

All manuscripts will be reviewed in accordance with standard review criteria to ensure high technical quality by one or two qualified reviewers, assigned by the Editor or an Associate Editor. The reviewers shall each submit a recommendation to the editorial office regarding the merit of the manuscript, but the Editor on the recommendation of the Associate Editor will make a final determination on the acceptance of the paper for publication. The journal reserves the right to reject papers, which, in the opinion of the editor, do not meet its editorial standards, without further review.

Authors should demonstrate within the cover letter of the paper the novelty of the work and why it deserves publication in *Shape Memory and Superelasticity*. Throughout the paper, emphasis should be given to explaining the findings and the scientific reasons behind the arguments. The Editor reserves the right to reject manuscripts that merely report test results without providing a reasonable and consistent scientific explanation.

Publication ethics

Submission for publication is representation that neither the manuscript nor the basic information in the manuscript has been copyrighted, published, or submitted for publication elsewhere and that its publication has been approved by any and all co-authors, as well as by the responsible parties – tacitly or explicitly – at the institute where the work has been carried out. The publisher and journal owner will not be held legally responsible should there be any claims for compensation. Prior publication is a basis for rejection except under special circumstances, such as appearance as an internal organizational report or expanded versions of a conference or symposium proceedings with limited circulation. The prior publication history should be clearly noted on the manuscript. If the manuscript is under a prior copyright but still appropriate for publication in *Shape Memory and Superelasticity*, the author must obtain permission of

the prior copyright holder for *Shape Memory and Superelasticity* to publish the manuscript. It is understood that the corresponding author has obtained the permission to include the names of co-authors in the submission.

Authors must avoid plagiarism. Any material taken verbatim from another source needs to be clearly identified to distinguish it from the present submission and the original source must be credited. Authors wishing to include figures, tables, or text passages that have already been published elsewhere are required to obtain permission from the copyright holder and to include evidence that such permission has been granted when submitting their papers. Any material received without such evidence will be assumed to be unpublished work generated by the authors.

Shape Memory and Superelasticity utilizes iThenticate Plagiarism Detection Software. All manuscripts submitted to *Shape Memory and Superelasticity* are automatically upon submission submitted to the CrossCheck Database to check for potential plagiarism.

English

In addition to technical acceptability, material should be presented clearly and concisely in English. Authors for whom English is not their native language are encouraged to have their manuscript reviewed prior to submittal. Additional details are given in Sec. 9 under "Manuscript Preparation". The Editor and the Associate Editors reserve the right to return a paper to the author without further review if in their opinion the English is of a poor quality. Manuscripts resubmitted that fail to address the concerns of *Shape Memory and Superelasticity* reviewers may be rejected and debarred from further submittal.

Shape Memory and Superelasticity publishes two classes of papers:

Peer-Reviewed Papers: Manuscripts should represent completed original work embodying the results of extensive field, plant, laboratory, or theoretical investigation, or new interpretations of existing problems. Material must be considered to have significant permanent value. The length of the paper should be approximately 8 journal pages. Longer papers can be considered with permission of the Editor.

Reviews: Reviews may be submitted by invitation of the Editor only. Potential authors will be invited to submit an extended abstract (400-500 words) and a listing of section headings to the Editor prior to submission of the complete manuscript. It is expected that this prior discussion and planning of the paper will facilitate rapid publication.

MANUSCRIPT PREPARATION

1. Manuscripts submitted to *Shape Memory and Superelasticity* should be based on Word files with only essential formatting included (Bold, Italic, etc.). Any extraneous formatting (double column text, embedded figures/tables, margin adjustments, etc.) should be removed. Manuscript text, references, figure captions, and tables should all be included in one single document. Tables and figures should be separately included after the reference section. High quality art work should be included as separate files. All figures must be labeled, numbered, and numerically cited in the text of the manuscript.

2. Submit art at print size as separate .tif or .jpg files at 300 DPI resolution for photos and micrographs, at 1200 DPI resolution for line drawings, and at 600 DPI for combination grayscale/line drawings. Final manuscripts with poor quality figures and micrographs, which are unlikely to reproduce properly, may be returned to the author until better quality figures are supplied even if the paper has been accepted for publication. Art embedded into a Word document defaults to 72 DPI, resulting in low resolution not suitable for publication. However, for review purposes figures may be embedded in a Word document in addition to submittal as separate files. All micrographs must include micron markers. The journal reserves the right to return the manuscript to the author, if in the view of the Editor, the submitted figures and micrographs are of poor quality and impede a fair and objective review.

For more specific guidelines, authors may refer to the Springer guidelines for artwork at <http://www.springer.com/authors/manuscript+guidelines?SGWID=0-40162-12-331200-0>.

For previously published figures and tables, written confirmation of permission to reprint should be included for each item along with the manuscript at submission.

3. The full contact address and email address of the corresponding author must be provided and will be included in the published *Shape Memory and Superelasticity* article. Also, include contact information for coauthors. If there is only one author, please provide contact information for an assistant or coworker as backup.

4. The title of the contribution should be succinct (no greater than 15 words) and clearly describe the focus of the work. **The abstract is the author's summary of a scientific paper.** It should indicate newly observed facts, conclusions, and the essential parts of any new theory and experimental procedures. It should be concise and informative and limited to less than 200 words. The abstract should provide a descriptive summary of the major findings of the research.

5. Include 4 to 7 keywords. Two to three of the keywords provided must be taken from Journal's pull-down menu.

6. The required Reference format is shown in the section entitled **STYLING OF REFERENCES**. Reference to unpublished work that is difficult to obtain should be avoided unless it is inevitable for the understanding of the work and if the authors can make it available as review-only material. The editor may ask for further clarification or substantiation of such references. The title for all journal references must be included.

7. Extensive revision at the author's option of text or figures in proof is costly and will be charged to the author. Typographical errors may be corrected and references updated without charge.

8. All submissions shall be in English. There are no facilities for translating or making editorial revisions of contributions written in a foreign language. All papers will be published in English. Papers should be proofed before submission for acceptable English composition. If the abstract of the paper is not clear to the staff receiving the manuscript, it will be returned to the author(s) for revision.

9. Authors who require assistance with English language editing to bring their manuscript to a level sufficient for peer review may consider using the following services:

Edanz (<http://www.edanzediting.com/springer>)
American Journal Experts (www.journalexerts.com)
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Also available is the Springer Author Academy, <http://www.springer.com/authors/author+academy>, which provides helpful information to new authors.

These are offered as potential paths by which authors may improve the language quality of their manuscripts and a small sample of many such services available, but no guarantee is made regarding the services. Editing services must be arranged and paid for by the authors. Such editing may be required by the editors when they deem it necessary. Procurement of language editing by the authors does not guarantee acceptance of their manuscript.

10. The policy of the *Shape Memory and Superelasticity* is to use metric units based on the International System of Units (SI). For guidelines, access the [NIST site](http://physics.nist.gov/cuu/Units/index.html) (<http://physics.nist.gov/cuu/Units/index.html>) to obtain information on SI units. If a particular situation justifies the use of another system, conversion must be made to SI units in parentheses or in tabular form. For temperature, degrees C (Celsius or Centigrade) is allowed.

11. Avoid the use of trade names and proprietary information whenever possible. Such use can occasionally be justified if this is the best way to specify a particular material or process. Company name and location (city, state, and country) must accompany trade name use.

12. A series of papers dealing with the separate aspects of a subject should be cross-referenced. Divisions, such as Part I and Part II, are not recommended as they complicate the review procedure and abstract listings. If such divisions are considered essential, they should be justified by the author at the time of submission and are subject to approval in review.

13. Symbols should be defined when first introduced in the manuscript.

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STYLING OF REFERENCES

Reference citations in the text should be identified by sequential numbers in square brackets.

Reference examples:

Journal article

Hamburger, C.: Quasimonotonicity, Regularity and duality for nonlinear systems of partial differential equations. *Ann. Mat. Pura. Appl.* 169(1), 321–354 (1995)

Article by DOI

Slifka, M.K., Whitton, J.L.: Clinical implications of dysregulated cytokine production. *J Mol Med.* (2000) doi:10.1007/s001090000086

Book

Geddes, K.O., Czapor, S.R., Labahn, G.: *Algorithms for Computer Algebra*. 2nd ed. Kluwer, Boston (1992)

Book chapter

Broy, M.: Software engineering — from auxiliary to key technologies. In: Broy, M., Denert, E. (eds.) *Software Pioneers*, pp. 10–13. Springer, Heidelberg (2002)

Online document

Cartwright, J.: Big stars have weather too. IOP Publishing PhysicsWeb. <http://physicsweb.org/articles/news/11/6/16/1> (2007). Accessed 26 June 2007

Thesis/Dissertation

Jones, J. P.: Theoretical aspects of cold fusion, Ph.D. Thesis, Available from University of Cambridge Library, UK. Thesis completed June, 2001.

Other references:

If the work being cited is an article in a book or journal, the article title must be included.

- All authors' names must be listed.
- Use the standard abbreviation of a journal's title according to the ISSN List of Title Word Abbreviations, see <http://www.issn.org/2-22661-LTWA-online.php>
- If an article is written in a language other than English, list the title in the original language, followed by the English translation (if available) in parentheses. State the language of the paper at the end of the citation preceding the year of publication.
- Example:
Grein, H.: De la cavitation: unevued'ensemble (Cavitation: An Overview). *Rev. Tech. Sulzer* 87(2), 87–112, in French (1974)
- When citing specifications and standards, the critical elements are the standard number, year of revision, and the name of the standards organization.
- In-press references must include the journal name and as many details as are available at that time, and be denoted by “in-press,” “submitted for publication,” or “to be published.”

MANUSCRIPT SUBMISSION

Online Submission System

Go to <http://mc.manuscriptcentral.com/shapememory>. Log in to ScholarOne Manuscripts or click the “Create Account” option if you are a first time user.

IMPORTANT: Read all author instructions on how to prepare your manuscript and figures before you submit. Author instructions are found through the “Instructions & Forms” link in the upper right corner of all pages. Click the “Submit a Manuscript” link in

the menu bar to begin. Enter data and answer questions about the manuscript as prompted. Click the "Next" button on each screen to save your work and advance to the next screen. You will be prompted to upload your files.

The following file formats are unsuitable for production and are excluded from submission:

- **ppt, .pdf, .exe, .zip, .com, and .vbs.**

Names and email addresses for all authors listed on the manuscript must be entered during the submission process. The authors and co-authors will receive an e-mail message confirming that the manuscript has been received by the journal. You may log in to ScholarOne Manuscripts and select the Author Center anytime from anywhere to check the status of your manuscript. You may stop a submission at any stage and complete it later. From the Author Center, click on "Unsubmitted Manuscripts" and then click on the "Continue Submission" link to resume the submission process. If you need assistance, click on the "**Get Help Now**" button found on every screen. You may also call 888-503-1050 or 434-964-4100 or email support@ScholarOne.com for assistance.

PUBLICATION OF SYMPOSIUM PAPERS

There are special situations when it is desirable to publish a group of papers concurrently in *Shape Memory and Superelasticity*. Typically, these arise when a technical committee has organized a limited meeting program on a particular theme. The material must be original, of high quality, and closely correlated but not sufficient in volume to justify a monograph or proceedings-type publication.

To obtain approval, the chairman of the symposium program should write to the Editor outlining the symposium scope and the papers to be considered, and abstracts if available. On receipt of this information, the Editor will determine suitability of the material for a focused issue. All manuscripts in the symposium will be reviewed according to *Shape Memory and Superelasticity* standard review procedure. Presentation at the symposium is no guarantee that the editor will accept the paper for publication in *Shape Memory and Superelasticity*.

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ONLINE FIRST POLICY

Articles accepted for publication in *Shape Memory and Superelasticity* will be published Online First once the initial proof has been corrected and finalized. This is the official

date of publication. Online First publication allows readers to access articles well before print publication. These articles are searchable and citable by their DOI (Digital Object Identifier).

OPEN ACCESS POLICY

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