*Advanced Biomedical Engineering*

Official journal of the Japanese Society for Medical and Biological Engineering (JSMBE)

# Instructions to Authors

*Advanced Biomedical Engineering* is a vital new journal covering the full range of topics in biomedical engineering. The journal aims to be a forum for its global readership – which includes biomedical engineers, medical doctors, nurses, medical specialists and regulatory authorities – to connect, exchange information and increase their knowledge and skills.

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## AIMS & SCOPE

*Advanced Biomedical Engineering* (ABE) is an international, Open Access and fully peer-reviewed journal covering all areas of biomedical engineering. Supported by the Japanese Society for Medical and Biological Engineering (JSMBE), the journal aims to be a forum for exchanging information on new developments and ideas. ABE welcomes manuscripts describing rigorous research on topics including:

- biomedical signal processing and imaging
- bio-instrumentation and sensors applications
- informatics in healthcare and biomedicine
- cardiovascular and respiratory systems engineering
- neural and rehabilitation engineering
- cellular and tissue engineering
- biomechanics and robotics
- therapeutic and diagnostic technology
- clinical engineering
- regulatory science in biomedical engineering.

ABE publishes Review Papers, Original Papers, Research Letters and Technical Notes, which are freely available online. The journal's broad international audience includes biomedical engineers, clinicians, nurses, medical specialists (co-medicals) and regulatory authorities. Graduate students and young investigators, in particular those from developing countries, are encouraged to submit their manuscripts to ABE.

## MANUSCRIPT TYPES

The journal welcomes four manuscript types, all of which are subject to peer review.

### Review Papers

Review Papers are invited by the Editorial Board to provide comprehensive and insightful overviews of the latest advances in the field's technology and research. In addition, authors can send Review Paper proposals to the Editor-in-Chief. The length of Review Papers can vary depending upon their subject and scope, and is decided by the Editorial Board for each article.

### Original Papers

Original Papers are descriptions of new and significant research. The journal particularly welcomes interdisciplinary manuscripts that address issues of both medicine and engineering. The recommended length is not more than 4000 words.

### Research Letters

Research Letters are designed to present and report new concepts, new experimental phenomena, and other new findings or observations that merit early publication. The recommended length is not more than 2500 words.

Both Original Papers and Research Letters should contain the following elements: (i) purpose of the study and potential benefits in the application of the study's findings; (ii) support or evidence for the originality of the study; (iii) the experimental results or computations; and (iv) main outcomes of the study.

### Technical Notes

Technical Notes present information that is useful to ABE readers: for example, system design parameters and experimental results, as well as survey results related to medical and biological engineering. The recommended length is not more than 1500 words.

## JOURNAL & ETHICS POLICIES

ABE upholds the highest standards regarding research and publishing practice. This comprehensive suite of policies covers the main responsibilities of the journal's authors, reviewers, editors and publisher.

### Author responsibilities

### Submission

ABE welcomes manuscript submissions from authors anywhere in the world.

Submission to the journal implies that all authors have read and approved the manuscript, have agreed to its submission, and have the right to publish their work.

Submission to the journal also implies that all authors have read and complied with the journal's policies on publication ethics. Authors of submitted manuscripts acknowledge that the journal's editors reserve the right to reject or retract any manuscript that they believe may breach any of these policies.

### Duplicate submission

Authors must not submit manuscripts that have been previously published (in part or in whole, in any language), or that are in press or under consideration for publication elsewhere.

Authors must inform the editors if any related manuscripts are under consideration, in press or published elsewhere. The availability of a manuscript on a publicly accessible preprint server does not constitute prior publication (see 'Preprints').

Note that manuscripts that have been published as Proceedings are considered prior publications. Proceedings articles often contain one or more pages, figures and tables and describe details of the research undertaken. Preprints (see below) or abstracts without figures or tables and less than 400 words are not considered prior publications.

If authors choose to submit their manuscript elsewhere before a final decision has been made on its suitability for publication in ABE, they should first withdraw it from ABE.

### Originality

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### Preprints

To support the wide dissemination of research, the journal encourages authors to post their research manuscripts on community-recognized preprint servers, either before or alongside submission to the journal. This policy applies only to the original version of a manuscript that describes primary research. Any version of a manuscript that has been revised in response to reviewers' comments, accepted for publication or published in the journal should not be posted on a preprint server. Instead, forward links to the published manuscript may be posted on the preprint server.

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When assessing the novelty of a manuscript submitted to the journal, the editors will not be influenced by other manuscripts that are posted on community-recognized preprint servers after the date of submission to ABE (or after the date of posting on a preprint server, if the manuscript is submitted to the journal within 4 months).

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Authors are responsible for their published work and must follow the International Committee of Medical Journal Editors (ICMJE) Recommendations on 'Defining the Role of Authors and Contributors'. The journal's authorship policy follows the four ICMJE author criteria, which are that each author:

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2) drafted the work or revised it critically for important intellectual content.
3) approved the version to be published.
4) agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are addressed appropriately.

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Submission to the journal implies that all authors have seen and approved the author list. Changes to the author list after manuscript submission – such as the insertion or removal of author names, or a rearrangement of author order – must be approved by all authors and the editor.

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The Editorial Board reserves the right to reject manuscripts when high ethical standards are not maintained, even if formal approval for work has been obtained.

### Clinical trial registration

The journal adheres to the International Committee of Medical Journal Editors (ICMJE) policy on Clinical Trials Registration and the CONSORT statement, which recommend that all clinical trials are registered in a public trials registry in a standard format, at or before the time of first patient enrollment, as a condition of consideration for publication. Manuscripts describing clinical trials must include the registration number of the trial and the name of the trial registry.

### Reporting guidelines

The journal requires authors to follow the EQUATOR Network's Reporting Guidelines for health research. Study types include, but are not limited to, randomized trials, observational studies, systematic reviews, case reports, qualitative research, diagnostic and prognostic studies, economic evaluations, animal pre-clinical studies and study protocols.

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### Conflicts of interest

In the interests of transparency, the journal requires all authors to declare any conflicts of interest in relation to their submitted manuscript.

A conflict of interest exists when there are actual, perceived or potential circumstances that could influence an author's ability to conduct or report research impartially. Potential conflicts include (but are not limited to) competing commercial or financial interests, commercial affiliations, consulting roles, or ownership of stock or equity. If in any doubt, please contact the journal's Editorial Office.

Each author must complete and submit a Conflict of Interest Disclosure Form, and the corresponding author should upload all the forms as a PDF file when submitting a manuscript. This form can be downloaded from https://abe-journal.org/COI_Form.docx.

A declaration should also be included in the 'Conflicts of Interest' section of each manuscript (see the Manuscript Preparation section for more details). If the authors have no conflicts of interest, they should declare as follows in the Conflicts of Interest section of the manuscript: "The authors declare no conflicts of interest with any companies or commercial organizations per the definition of Japanese Society for Medical and Biological Engineering."

Authors should list all funding sources for their work in the Acknowledgements. For each funding source, both the research funder and the grant number should be given.

### Confidentiality

The journal maintains the confidentiality of all unpublished manuscripts. Further, ABE recognizes that manuscripts submitted to the journal are privileged communications and are authors' private and confidential property. ABE keeps the editorial process confidential, including whether a manuscript has been received or under review, the contents, the status of review, and any criticism provided by reviewers. Reviewers of ABE also agree to keep the review process confidential.

By submitting their manuscript to the journal, the authors warrant that they will keep all correspondence about their manuscript (from the Editorial Office, editors and reviewers) similarly in strict confidence.

## PEER REVIEW PROCESS

### Editorial and peer review process

The journal uses single-blind peer review.
When a manuscript is submitted to the journal, it is assigned to the Editor-in-Chief, who performs initial screening. Manuscripts that do not fit the journal's scope or are not deemed suitable for publication are rejected without review.

The remaining manuscripts are assigned to one of the journal's Editorial Board Members (hereafter the member is referred to as Editor), who is responsible for the peer review process. The assigned Editor invites two reviewers who are selected according to the field of the submitted manuscript. If the opinions of the reviewers diverge greatly, a third reviewer may be asked to review the manuscript. The deadline for submission of the reviewers' reports varies by article type.

When the reviewers' reports are returned, the Editor prepares a decision recommendation based on the manuscript, the reviewers' reports, and the acceptance criteria (as described in the section below). The Editor-in-Chief then makes the first decision. If the decision is to request revision of the manuscript, authors have 3 months to resubmit their revised manuscript. Revised manuscripts submitted after this deadline will be withdrawn and treated as new submissions.

The Editor may send revised manuscripts to peer reviewers for their feedback or may use his or her own judgement to assess if the authors have adequately attended to the Editor's and the reviewers' comments on the original manuscript. The Editor then makes a recommendation to the Editor-in-Chief on the manuscript's suitability for publication. The Editor-in-Chief is responsible for making the final decision on each manuscript. It should be noted that a second round (or more) of revisions may be required if necessary.

The members of the International Advisory and Editorial Boards act in advisory roles, providing feedback as reviewers and making suggestions to improve the journal. In cases where the Editor-in-Chief is an author on a manuscript submitted to the journal, a member of the Editorial Board is responsible for making the final decision on the manuscript's suitability for publication in the journal.

### Acceptance criteria

If a manuscript satisfies the journal's requirements and represents a valuable contribution to the published literature, the Editor may recommend acceptance for publication in the journal.
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- within the subject area as outlined in the Aims and Scope
- novel and important to the field
- scientifically, ethically, and otherwise rigorous
- of interest to the journal's broad audience, even if focused on a local or regional scale
- thoughtfully constructed and well written in English

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### Reviewer suggestions

When submitting a manuscript to the journal, authors

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### Reviewer reports

It is the journal's policy to transmit reviewers' comments to the authors in their original form. However, the journal reserves the right to edit reviewers' comments, without consulting the reviewers, if the Editor or Editor-in-Chief judges it necessary. For example, if the comments contain offensive language, confidential information or recommendations for publication.

### Editorial independence

The JSMBE has granted the journal's Editorial Board complete and sole responsibility for all editorial decisions. The society executive will not become involved in editorial decisions, except in cases of a fundamental breakdown of process.

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5. share or upload the contents of the manuscript to any AI tool or public platform.

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## Editor / publisher responsibilities

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- disclose a reviewer's identity unless the reviewer makes a reasonable request for such disclosure
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### Conflicts of interest

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Members of the journal's Editorial Board undertake to declare any conflicts of interest when handling manuscripts. An editor who declares a conflict of interest is unassigned from the manuscript in question and is replaced by a new editor.

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The journal recognizes the importance of maintaining the integrity of published literature.

A published article that contains an error may be corrected through the publication of an Erratum. Errata describe errors that significantly affect the scientific integrity of a publication, the reputation of the authors, or the journal itself. Authors who wish to correct a published article should contact the editor who handled their manuscript or the Editorial Office with full details of the error(s) and their requested changes. In cases where co-authors disagree over a correction, the Editor-in-Chief may consult the Editorial Board or external peer reviewers for advice. If an Erratum is published, any dissenting authors will be noted in the text.

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Any member of the journal's Editorial Board who is an author on a submitted manuscript is automatically excluded from the peer review process. Within the journal's online manuscript submission and tracking system, they will be able to see their manuscript as an author but not as an editor, thereby maintaining the confidentiality of peer review.

Any manuscript authored by an editor of ABE undergoes the same standards of peer review and editorial decision making as any manuscript submitted to the journal.

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### Reviewer responsibilities

### Confidentiality

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- reveal their identity to any of the authors of the manuscript
- discuss the manuscript or its contents with anyone not directly involved in the review process
- involve anyone else in the review (for example, a post-doc or PhD student) without first requesting permission from the Editor
- use any data or information from the manuscript in their own work or publications
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A conflict of interest exists when there are actual, perceived or potential circumstances that could influence a reviewer's ability to assess a manuscript impartially. Such circumstances might include having a personal or professional relationship with an author, working on the same topic or in direct competition with an author, having a financial stake in the work or its publication, or having seen previous versions of the manuscript.

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### Title page

The first page should be the title page, which should include the title of the manuscript, the names of the authors, and their affiliations. In addition, you should supply an abbreviated title for the manuscripts, the Abstract and the Keywords.

### Title

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### Abbreviations and units

Each abbreviation should be defined in parentheses together with its non-abbreviated term when it first appears in the text (except in the Title and Abstract).

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### Abstract

The Abstract should clearly express the basic content of the manuscript in a single paragraph and should include the problem addressed, experimental approach, main results and conclusions. Abstracts must not exceed 350 words for all article types. Avoid using specific abbreviations or citing figures or tables. Structured abstracts cannot be accommodated. If it is essential to refer to a previous publication, omit the article title (e.g. Kawada T, Mukkamala R, Sugimachi M: Adv Biomed Eng. **8**, 110-123, 2019).

### Introduction

The Introduction is important as it allows the reader and reviewers the opportunity to understand the novelty and potential scientific validity of the article.

The Introduction should provide enough background information to allow the reader to understand the aims and purpose of the research and the relationship to previous studies, and to provide a clear definition of the problem identified from those studies. In addition, it can be useful if the author describes the overall strategies used to solve the defined problem.

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The description of the methods should be brief, but it must include sufficient detail to enable experiments or procedures to be repeated. The sources of unusual chemicals, animals, microbial strains or equipment should be described, and the location (city, country) of the manufacturer or supplier should be provided in parentheses. Use equations and figures appropriately and describe them concisely.

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### Results

This section describes the results of the work, particularly those that are later referenced in the Discussion. Tables and figures, including photographs, can be used to present experimental results (see below). Excessive explanations of the data presented in tables and figures should be avoided. If it is necessary to compare multiple sets of results, present them in the same figure or table to facilitate comparison.

## Discussion

In the Discussion, the authors should place their results into context and assert the validity of their approach. Any limitations to the study, or any contradictory results, should be explained where possible. Avoid repeating information previously presented in the Introduction or Results sections.

## Conflicts of interests

Authors must declare all competing interests, as described in the 'Conflicts of interest' section in these Instructions to Authors.

## Ethics declaration

If the research reported in a manuscript was conducted on animal or human subjects, the authors must include statements concerning their ethical treatment and conduct. Documentary evidence that the authors have complied with research ethics guidelines, such as ethics committee approvals, must be supplied with the manuscript.

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>
> Example 2): This study was conducted in accordance with the Fundamental Guidelines for Proper Conduct of Animal Experiment and Related Activities in Academic Research Institutions. The study was approved by the [ethics committee] of [the affiliated institution].
>
> Example 3): This study was conducted in accordance with the Ethical Guidelines for Human Genome/Gene Analysis Research by the Ministry of Education, Culture, Sports, Science and Technology; the Ministry of Health, Labour and Welfare; and the Ministry of Economy, Trade and Industry (Japan), and was approved by the [ethics committee] of [the affiliated institution].

## Acknowledgments

This section should be brief. Authors should list all funding sources for their work in the Acknowledgements section.

## References

Authors are encouraged to include as many references as necessary to support statements or facts, establish the precedence of ideas, provide context, and demonstrate community interest in the subject area. In addition, conflicting reports should be noted where and as relevant.

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**Article in journal:**
[1] Hohne KH, Bernstein R: Shading 3D-images from CT using gray-level gradients. IEEE Trans Med Imag. **5**(1), 45–47, 1986.
**Book:**
[2] Born M, Wolf E: Principles of Medical Engineering, 2nd ed. Pergamon Press, New York, pp. 69–94, 1988.
**Chapter in book:**
[3] Chandler S: Adaptive model control applied to real time blood pressure regulation. In: Black C ed. Pattern Recognition and Machine Learning, McGraw-Hill, Berlin, pp. 310–324, 1985.
**Proceedings and others:**
[4] Heel N: Automated blood pressure control using a self-tuning regulator. Proc of NCGA'S Computer Graphics Conference '87, Vol. 2. Am Med Eng Soc., New York, pp. 152–161, 1988.
**Patents:**
[5] White AG: US Patent No. 1234567. 1982.
**Online article:**
[6] Web page or author (for PDF, etc.): Name of web page or name of document (for PDF, etc.) <Web address> [date accessed].
e.g. Advanced Biomedical Engineering: Instructions to Authors. <https://abe-journal.org/submission/> [accessed on January 1, 2020].

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