Guideline for Authors  Last Update: September 30, 2022

The *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control (T-UFFC)* is the flagship journal of the IEEE UFFC Society. This peer-reviewed periodical focuses on the publication of major research advances at the forefront of ultrasonics, ferroelectrics, and frequency control. *IEEE T-UFFC* also actively publishes multidisciplinary research advances that exemplify the synergy between the three technical areas.

*IEEE T-UFFC* is a hybrid open-access journal that publishes all articles electronically on *IEEE Xplore*. PDF copies of published articles and related supplementary materials (if there are any) may be downloaded via *IEEE Xplore*.

I. Publishing Scope
Prospective authors are encouraged to submit manuscripts whose scope aligns with one or more of the following scientific and technological themes:

1. **Physical acoustics in the ultrasonic frequency range**, including *wave physics* (linear and nonlinear waves, bulk and surface acoustic waves), *engineering methods* (algorithms, transducers, systems, devices), and *industrial applications* (non-destructive evaluation, communications, fluidics, levitation);

2. **Medical ultrasound**, including *fundamentals* (biophysics, wave-matter interactions), *engineering methods* (algorithms, transducers, systems, devices), and *applications* (imaging, diagnostics, therapy);

3. **Ferroelectrics and piezoelectrics**, including *material science* (crystals, polycrystalline solids, films, polymers, composites) and *applications* (design of transducers, sensors, actuators, and other devices);

4. **Frequency control**, including *engineering methods* (timing, time distribution, crystal oscillators, other means of frequency control) and *standards* (atomic, molecular, laser frequency control).

Every research paper published in *IEEE T-UFFC* is required to report a new and significant research advance whose scientific merit, feasibility, and advantages have been demonstrated convincingly beyond theory, simulations, and preliminary experimentation. Manuscripts that report incremental advances with a modest scope of work, and ones that resemble the form of a research letter or correspondence, are not aligned with the publishing mission of *IEEE T-UFFC*.

II. Article Types and Charges

A) Submission Categories

IEEE T-UFFC only accepts electronic manuscript submissions through the ScholarOne Manuscript Central portal. Manuscript submissions in the following five categories will be considered:

1. **Original Research**: Regular full-length paper that reports a new scientific or technological advance in ultrasonics, ferroelectrics, and frequency control. An *Original Research* article may be of any length and must generally satisfy the journal’s four acceptance criteria (novelty, significance, rigor, writing quality).

2. **Spotlight**: Theme-based research paper that is targeted for an upcoming *T-UFFC spotlight issue*. The acceptance standard for *Spotlight* articles is the same as that for *Original Research* articles. Each *Spotlight* manuscript is normally subjected to fast-tracked peer review and, if accepted, will be highlighted within a *T-UFFC* spotlight issue. *Spotlight* articles are expected to be full-length research papers.

3. **Methods and Concepts**: Tutorial paper that pedagogically describes the technical details of important foundational concepts, lab procedures, or fabrication protocols. Each *Methods and Concepts* article must aim to promote open science through either: (i) meticulous documentation of the best practices on a particular research method or protocol that is at the core of scientific advances; or (ii) pedagogically present important foundational concepts that will serve well as up-to-date educational resources.

4. **Review**: Full-length educational paper that curates latest findings and trends on a particular topic. In addition to summarizing the latest research findings, each *Review* article must include scientific insights on a frontier research topic in ultrasonics, ferroelectrics, or frequency control.
5. Perspective: Mini review paper on an emerging research topic. Each Perspective article is expected to be of 6-8 typeset pages in length, including references. It is intended to be a platform for researchers to either: (i) highlight the outlook of latest hot topics in ultrasonics, ferroelectrics, or frequency control; (ii) present expert opinions and consensus statements on the state of development in emerging areas.

In addition to these main submission categories, IEEE T-UFFC allows supplementary submissions in the form of Errata by authors who wish to report post-publication corrections to their previously published paper. IEEE T-UFFC no longer accepts Letters or Correspondence submissions. Manuscripts of this format will be returned to the authors.

B) Pre-Approval for Two-Part Manuscript Submission

Authors considering the submission of a two-part manuscript must first discuss the proposal with the Editor-in-Chief. Pre-approval of a two-part manuscript submission will only be granted if the companion papers are deemed to be presenting non-incremental research with limited overlap. It is expected that each paper in the two-part series can stand on its own as a full-length original research article.

IEEE T-UFFC no longer accepts two-part manuscripts that separate theory and simulations from laboratory experiments and practical applications. A mandatory request to merge and condense will be made for two-part manuscripts of this form.

C) Free Page Limit

To deter against verbosity, IEEE T-UFFC imposes mandatory overlength page charges on accepted manuscripts that are longer than the free page limit. The length of an article is determined based on the number of IEEE-style, double-column typeset pages prepared by the IEEE publishing team, and it includes figures, references, and author biographies. The current free page limits are:

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D) Publication Fees

At the time of submission, authors are required to acknowledge and agree to any applicable publication fees to a manuscript, shall it be accepted for publication in IEEE T-UFFC. Two potential publication fees may be incurred:

1. Open Access Article Processing Charge: IEEE T-UFFC is a hybrid journal allowing either traditional manuscript publication or Open Access manuscript publication. Authors may elect to publish their accepted manuscript as an Open Access article to enable unrestricted public access to the article via IEEE Xplore. Choosing this publishing option would entail a commitment to pay an Open Access Article Processing Charge of US$2,195. Corresponding authors from low-income countries are eligible for waived or reduced open access APCs. A 20% discount is also available to corresponding authors who are members of the IEEE UFFC Society. No Open Access payment is required for traditional publication. For any questions regarding IEEE's Open Access policy, please refer to IEEE's Frequently Asked Questions on Open Access.

2. Mandatory Overlength Page Charge: A charge of US$275 per page is applied for published pages in excess of the free page limit. It will be billed separately once the manuscript formatting is complete but prior to publication. The overlength charge is applicable for both traditional and Open Access publications. Overlength page charges are not applicable to Perspective articles as their length must not be longer than 8 typeset pages. Authors will only be required to pay publication fees after a manuscript has been accepted. Payment will be arranged directly by IEEE through the CCC RightsLink portal. An accepted article will be scheduled for
publication in IEEE T-UFFC once all publication fees have been paid. Authors are not required to pay publication fees for colored figures and multimedia contents.

III. Manuscript Preparation

A) Originality Requirement
To be considered for publication, each manuscript must be unpublished, specifically prepared for potential publication in IEEE T-UFFC, and not be under consideration elsewhere. By submitting a manuscript, all authors confirm that the work is original. Figures, tables, and reported results are original contributions and accurately reflect the experimental work. It is the responsibility of the corresponding author to obtain consent from all co-authors and sponsors before submission.

As an exception to the originality requirement, IEEE T-UFFC will consider the review of manuscripts that are extended from IEEE conference proceedings. For these manuscripts, authors are deemed to have met the originality requirement if more than 50% of contents are new and original beyond what has been published in an IEEE conference proceeding. It is the authors’ onus to demonstrate that the submitted journal manuscript is a fully developed, non-incremental version of the published IEEE conference proceeding.

B) Formatting and Article Templates
Authors are required to use the IEEE T-UFFC article template to prepare and format their manuscripts. This template has a colorized layout with a double-column, single-spaced format and in-line figures. Its layout is the same as that for articles published in the IEEE T-UFFC. Document templates for Microsoft Word and style files for LaTeX users can be downloaded through the IEEE Template Selector (under Transactions, Journals, and Letters ➔ IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control ➔ Original Research).

The use of the IEEE T-TUFFC article template for manuscript preparation will assist the peer review process and will facilitate early posting of accepted preprints on IEEE Xplore.

C) Article Style
Articles published in IEEE T-UFFC begins with an Abstract and a list of Index Terms. To facilitate readers’ understanding of the presented work, every submitted manuscript is expected to:

- Follow a sequential order of exposition that: (i) introduces the scope of research; (ii) describes the methodology (which may include theory, design protocol, and/or experimental methods and materials, as deemed applicable by the authors); (iii) presents results and discussion points;
- Clearly describe the new, innovative elements of the presented research and explain why they are significant and impactful to the research field;
- State how the current manuscript is distinguished from other similar papers published in the literature;
- Provide relevant and recent citations from closely related work to put the contribution in context.

There should be an explicit Introduction section at the beginning of the article after the Index Terms listing. Authors have flexibility in creating and naming other manuscript sections, although it is advised that there is an explicit Discussion section (i.e., a separate section on its own) after the presentation of results. Figures and tables should be displayed as in-line figures, preferably on the same page in which they are first cross-referenced in the manuscript text. References should be formatted according to the IEEE style. IEEE T-UFFC has put together a checklist on improving the quality and clarity of the submitted manuscripts.

D) Graphical Abstract
Each manuscript is required to include a graphical abstract to provide a visual summary of their findings by means of an image. The graphical abstract should be in landscape orientation and should follow the recommended dimension of 660×295 pixels. The following file types are accepted: JPG, TIF, PNG, GIF, DOC, DOCX, PDF, PS, EPS, or BMP. Instructions on how to design a graphical abstract can be found at the IEEE Author Center.
The graphical abstract is considered a part of the technical content of the paper. It will be evaluated as part of the peer review process. The most representative graphical abstract among a collection of recently accepted manuscripts may be featured as the Front Cover image of a T-UFFC monthly issue. Selection will be made by the Editor-in-Chief in consultation with the T-UFFC Editorial Board.

E) Multimedia Materials
Authors are welcomed to include the submission of multimedia files (such as audio and video cineloops), datasets, and software code as part of their manuscript dossier. These multimedia files should be cross-referenced in the manuscript text, and they will be evaluated as part of the peer review process. If the manuscript is accepted for publication in the IEEE T-UFFC, the multimedia contents will be published on IEEE Xplore. At the stage of press production, authors will be asked to provide a README file (in PDF format) for the multimedia files. Please visit the webpage at IEEE Author Center to obtain instructions on how to prepare multimedia files.

F) Human and Animal Research Ethics
It is the authors’ responsibility to obtain necessary approval and to follow ethics when treating human subjects and animals. Remarks should be included in the main body of the manuscript to indicate such approval and to include relevant information such as the name of the ethics review board and the protocol number.

G) Funding Acknowledgements
Authors must disclose all funding bodies and all forms of financial and equipment support that contributed to the submitted manuscript. Financial conflict of interest must also be declared, if there are any.

H) References
Authors are required to follow the IEEE citation format as shown in the IEEE T-UFFC article template. Padding the reference list with self-citations, while ignoring related work done by others, is considered an unethical act that is not encouraged.

I) English Language Editing
IEEE T-UFFC expects that all submitted manuscripts are written in an adequately clear manner. This policy is in place to ensure that reviewers can focus on evaluating the presented technical contents in a manuscript. The burden of diligence rests with the authors. IEEE T-UFFC may return manuscripts back to the authors without peer review if they are deemed to be poorly written to the point that masked out the perceived novelty and significance.

For authors who require help with English language editing, IEEE T-UFFC recommends the use of fee-based professional technical editing services to help refine the language of their manuscripts and to reduce the chances of rejection on the grounds of poor writing quality. IEEE authors are eligible for discounts at several language editing services as listed at the IEEE Author Center. Please note that completion of professional editing does not guarantee that a manuscript will by default be accepted for publication.

In some circumstances, IEEE T-UFFC may make mandatory requests for the authors to send their manuscript for professional technical editing. For these mandatory requests, proof of completion of professional editing will be required when authors resubmit their manuscript.

J) Author Photos and Biography
Articles published in the IEEE T-UFFC include an author biosketch section at the end of the article. Authors may include their author biosketch at the time of initial submission or may submit this information after the manuscript when they submit the final files for press production. A suggested biography format consists of three paragraphs: (i) name, where and when born, degrees earned, field(s) of study, school, city, and state; (ii) chief employment dates, organizations, positions held, type of work, responsibilities, and present position; and (iii) professional society membership, offices, and awards. The biography should be submitted as a separate file. A 1.5 in × 2 in photo with 300 ppi at 8-bit pixel depth will have sufficient resolution for publication.
IV. Editorial Screening

A) Overview of Editorial Process
All articles published in IEEE T-UFFC will be evaluated in accordance with the requirements set forth in the IEEE Publication Services and Products Board (PSPB) Operations Manual (Sections 8.2). For each submitted manuscript, screening by members of the T-UFFC Editorial Board will first be carried out to check for plagiarism and to evaluate whether the submitted contents are in principle aligned with the publishing scope and mission of the IEEE T-UFFC. Manuscripts that failed to pass editorial screening will be returned to the authors without peer review. Manuscripts that passed editorial screening will be reviewed by a minimum of two independent reviewers using a single-blind peer-review process, where the identities of the reviewers are not known to the authors, but the reviewers know the identities of the authors. An informed editorial decision will then be made by the T-UFFC Editorial Board based on the reviewers’ comments.

B) Triage Protocol
In compliance with Section 8.2 of the IEEE PSPB Operation Manual, each manuscript submitted for publication consideration in the IEEE T-UFFC will be screened before the commencement of peer review. Manuscripts that have been flagged for any of the following issues will be triaged in the form of an Immediate Reject editorial decision:

1. Plagiarism: Manuscript has been flagged with Level-II plagiarism or higher, as per IEEE’s definition and as explained in Section IV-C;
2. Out of Scope: Manuscript’s topic is not related to any aspect of ultrasonics, ferroelectrics, and frequency control;
3. Misalignment with IEEE T-UFFC’s Publishing Focus: Manuscript is in the form of a research letter or correspondence and/or does not fit the journal’s mission of showcasing major research advances whose merit has been demonstrated convincingly beyond theory, simulations, and preliminary experimentation;
4. High Similarity with Other Recent Paper(s): Manuscript is incremental in that only trivial difference exists between the new manuscript and past published work (including those published by the same authors);
5. Distinct Lack of Clarity: Manuscript has a combination of major expository issues including poor abstract, poor organization, poor writing, and poor figure design such that they have masked out the manuscript’s perceived archival potential.

By policy, IEEE T-UFFC will not consider the resubmission of a revised version of a triaged manuscript. IEEE T-UFFC holds the position that the burden of diligence rests with the authors to, prior to submission, clear the manuscript from issues that may result in triaging. It is the authors’ onus to demonstrate that their submitted manuscript is of high interest to members of the UFFC community.

C) Anti-Plagiarism Policy
The practice of verbatim copying is a misconduct and is strictly not allowed by IEEE publishing policy. Authors must present concepts in original text and figures. Sentences and diagrams from published papers, including ones written by the authors, must not be directly re-used without paraphrasing and without proper
V. Peer Review Process

A) Evaluation Criteria

For manuscripts that passed editorial screening, its archival potential will be assessed by a minimum of two peer experts. Evaluation will be made based on four key evaluation criteria:

1. Novelty: How unique and original is the presented work?

Three categories of novelty are generally welcomed by IEEE T-UFFC: (i) Scientific novelty (Blue-sky intellectual inquiries such as investigation of new wave phenomenon); (ii) Methodological novelty (Engineering inventions in theory, technique, method, protocol, etc.); (iii) Application novelty (Convincing demonstration of real-world use of an emerging technique (but not for an already widely used clinical and/or industrial solution) in a new application domain.

All of the following positive elements related to novelty are expected in every manuscript: (i) The manuscript reports an original advance beyond the current state of the art; (ii) The presented technique has not been published yet (for method-oriented articles); (iii) The presented results have not been reported previously and are yielding new insights.

Lack of novelty is sufficient ground for rejection. Here are some common indicators on the lack of novelty: (i) The presented research has already been reported in similar published papers; (ii) The manuscript is merely reporting an incremental follow-up on a research topic; (iii) For manuscripts extended from conference proceedings, <50% of the contents are new and original.

2. Significance: How important is the presented work?

For each manuscript, at least 3 of the following positive elements related to significance are expected: (i) The manuscript reports a new solution with high potential to solve a major research problem; (ii) The research topic has a significant niche that has been articulated convincingly; (iii) A major knowledge gap has been filled; (iv) The presented technique leads to major performance improvements; (v) New phenomena and remarkable result trends have been revealed; (vi) The gained knowledge will influence further advances in the field.

Mediocre significance is sufficient ground for rejection, especially if any of the following has been identified: (i) The manuscript only covers a minor topic that concerns very few UFFC readers; (ii) The research problem is of limited interest to the UFFC community; (iii) The presented technique is simply a trivial or alternative solution that has no potential to replace the state of the art; (iv) The presented technique only leads to limited performance improvements; (v) Research results are too preliminary and/or proof-of-concept in nature; (vi) Research results offer no or limited insights beyond what is already known on the topic.
3. Rigor: How accurate, reliable and repeatable is the presented work?
Every manuscript should report a body of work in a rigorous manner that allows the work to be repeated by other subject experts if needed. All of the following are expected: (i) The new technique and related equations (if applicable) should be presented in the form of a pedagogical walkthrough with the key steps described; (ii) Experimental testing protocol should be presented in detail with all relevant parameters stated; (iii) Wherever necessary, justifications should be given on specific parts of the technique and/or protocol.

Lack of rigor may be an addressable issue. Nevertheless, a manuscript may still be rejected due to poor rigor if errors and omissions are too prevalent. Here are some common indicators of poor rigor: (i) Errors, flaws, and/or misleading statements are present; (ii) Important information is missing that jeopardizes the repeatability of the presented work; (iii) Design choices and experimental parameters are not justified.

4. Writing Quality: How clear and organized is the presentation of concepts, methods, results, etc.?
Every manuscript should be written with clear logical organization and with minimal number of grammatical flaws that do not seriously distract the manuscript's overall readability.

Writing quality is usually an addressable issue. Yet, if the manuscript is too poorly written to the point that masked out the novelty and/or significance, there may still be sufficient ground for rejection. Writing issues that hampered a manuscript’s perceived quality include, but are not limited to, the following:

- Poor presentation, including verbosity – Major talking points of significance are not clearly highlighted and/or are scattered throughout the manuscript. Abstract is not a self-contained summary.
- Poor figure design, including captions – Difficult for readers to parse the key information in the figure.
- Poor organization – Methodological description lacks structure and clarity (also affects the perception of rigor). Result statements and inferences (which belong to the Discussion section) are blended together.

B) Types of Editorial Decisions
Guided by the reviewers’ feedback, T-UFFC Editorial Board will render one of the following decisions to each submitted manuscript:

Accept
Manuscript is ready for publication in its present form. No further review is necessary. Manuscripts may still have minor corrections that need to be fixed in the final files to be submitted for press production.

Minor Revision
Manuscript is conditionally accepted for publication as it is deemed to have publication merit. Concerns can be addressed by adding further clarifications and/or slightly reorganizing the manuscript within a 3-week period. To satisfy the acceptance conditions, authors are required to submit a revised version of the manuscript and a point-by-point response to reviewers’ comments explaining all changes made in the manuscript. The revised submission dossier will be reviewed by T-UFFC Editorial Board and, as deemed appropriate, by peer reviewers. Note that, if the revision effort is deemed to be unsatisfactory, conditional acceptance will be withdrawn and the manuscript will be fully rejected from publication.

Reject with Recommendation for Resubmission
Manuscript is deemed to be not ready for publication in its present form, but it may have publication potential after a major revision that involves some rewriting and/or conducting make-up experiments. For this form of editorial decision, IEEE T-UFFC has not imposed a resubmission deadline, and thus authors may regard the editorial decision as "Major Revision" without a resubmission deadline. At the time of resubmission, authors are required to submit their significantly revised manuscript and a point-by-point response to reviewers’ comments explaining all changes made in the manuscript. The resubmitted manuscript will undergo another round of peer review.

By policy, IEEE T-UFFC will grant “Reject with Recommendation for Resubmission” only once to a manuscript, implying that this form of editorial decision will not be granted to a revised/resubmitted manuscript. This policy is in place to discourage marginal resubmission efforts, and it serves to reinforce the journal’s expectation on the authors to assume the burden of diligence in their major revision process. For a resubmitted manuscript, it may be accepted (or conditionally accepted) for publication if editors and reviewers agree that it
has consistently met the journal’s four acceptance criteria (see Section V-B). Conversely, if one or more reviewer(s) continue to express significant reservations and/or other major concerns that require at least another round of major revision to resolve, the resubmitted manuscript will be fully rejected.

**Reject**

Manuscript is fully rejected from publication as it is deemed to have failed to satisfy one or more of the IEEE T-UFFC’s evaluation criteria (see Section V-B). No resubmission will be considered. The common grounds for full rejection include, but are not limited to, the following: (i) Lack of novelty; (ii) Lack of insignificance; (iii) Poor technical rigor and/or lack of repeatability; (iv) Critical flaws in the presented techniques and experiments; (v) Modest scope of experimentation, such as conducting most of the (or all) testing using simulations (especially with idealized parameters) and/or only performing a proof-of-concept demonstration with an overly simplified scenario; (vi) Poor writing quality.

For new manuscripts, this editorial decision is typically made if the reviewers’ concerns are very substantial and cannot be easily overcome unless the authors carry out substantial rewriting and/or experimental work that are beyond the reasonable scope of a major revision. For revised/resubmitted manuscripts, a full rejection decision is issued if one or more of the following is identified: (i) the authors have failed to resolve the reviewers’ original concerns; (ii) the resubmission effort is deemed to be unsatisfactory; (iii) other major concerns are present such that the manuscript is deemed to require another major revision.

**Submit to Another Journal**

Manuscript is deemed to be not suitable for publication in the IEEE T-UFFC for a variety of reasons including the following (but are not limited to): (i) mismatch with IEEE T-UFFC’s publishing scope and focus; (ii) stalemate in the peer review process. Authors are advised to submit their manuscript as a fresh submission to another journal for publication consideration. For this form of editorial decision, T-UFFC will not consider the resubmission of another revised version of the manuscript for publication consideration.

**C) Appeal of Rejection Decisions**

Authors may appeal a rejection decision within 7 days of receiving the decision letter if the appeal request is substantiated with clear reasons and explanations. Such requests should be addressed to the Editor-in-Chief. Late or unreasoned appeal requests will not be considered.

The focus of IEEE T-UFFC’s review of appeal requests shall be on whether the journal’s peer review protocol has been consistently followed in making the original rejection decision. A rejection decision will be overturned if there is apparent procedural inconsistency and if the manuscript under question is deemed to have met all four evaluation criteria stated in Section V-A. The burden of proof shall be on the authors to demonstrate that there are gross bias and/or factual errors in the peer review process. Please note that scientific disagreement between the reviewers and the authors generally does not constitute sufficient grounds for overturning a rejection decision. Also, unfamiliarity with the journal’s peer review policy cannot be leveraged by the authors as a reason to appeal.

Upon receipt of an appeal request, the Editor-in-Chief will assess the authors’ reasons for appeal and will review the manuscript’s audit trail, reviewers’ documented comments, and the Associate Editor’s feedback. Whenever appropriate, the Editor-in-Chief may confidentially consult the original reviewers to collect additional comments and to seek clarifications. Once all documented points have been considered, the Editor-in-Chief will determine whether there is sufficient evidence to overturn the rejection decision and will communicate the decision to the authors in writing. If rejection is to be upheld, reasons will be provided to the authors.

Authors are required to make appeal requests in a professional manner. Appeal requests that include finger-pointing or personal attack on the reviewers are regarded as an act of harassment that is strictly not allowed by the IEEE Nondiscrimination Policy.