

Information for Contributors

(Submission of Manuscripts via an On-Line Peer-Review System – Manuscript Central)

Field of Interest: The scope of interest of the IEEE Ultrasonics, Ferroelectrics, and Frequency Control (UFFC) Society shall include theory, technology, materials, and applications relating to 1) the generation, transmission, and detection of mechanical waves and vibrations and their interactions with other phenomena; 2) medical ultrasound, including hyperthermia, bioeffects, tissue characterization, and imaging; 3) ferroelectric, piezoelectric, and piezomagnetic materials, including crystals, polycrystalline solids, films, polymers, and composites; 4) frequency control, timing and time distribution, including crystal oscillators and other means of classical frequency control; and atomic, molecular, and laser frequency control standards. Areas of interest range from fundamental studies to the design and/or application of devices and systems.

Broad categories of the field of interest are summarized in the following Technical Interest Profiling System (TIPS). When submitting a manuscript, authors are requested to select **ONE** and **ONLY ONE** of the TIPS categories and subcategories (i.e., choose one category and one subcategory that belongs to the category) that best reflects the focus of their manuscript.

I. MEDICAL ULTRASONICS

- (a) Medical Beamforming and Beam Steering
- (b) Biological Effects
- (c) Exosimetry
- (d) Blood Flow Measurement
- (e) Contrast Agents
- (f) Elastography
- (g) Medical Imaging
- (h) Medical Signal and Image Processing
- (i) Medical Tissue Characterization
- (j) Therapeutics, Hyperthermia, Ultrasound in Surgery
- (k) Biophysical Mechanisms
- (l) Chemical Effects and Mechanisms

II. SENSORS, NDE, AND INDUSTRIAL APPLICATIONS

- (a) Acoustic Microscopy & Imaging
- (b) Acoustic Sensors
- (c) General NDE Methods
- (d) Material & Defect Characterization
- (e) Wave Propagation
- (f) Signal and Image Processing
- (g) Transducers: NDE and Industrial
- (h) Flow Techniques
- (i) High Power Ultrasound
- (j) Industrial Measurement and Control

III. PHYSICAL ACOUSTICS

- (a) Bulk Wave Effects & Devices
- (b) General Physical Acoustics
- (c) Geophysical Ultrasonics
- (d) Underwater Ultrasound
- (e) Magnetic Interactions
- (f) Optical Interactions
- (g) Ultrasonic Motors & Actuators
- (h) Piezoelectric Transformers

IV. SURFACE ACOUSTIC WAVES (SAW)

- (a) SAW Acoustoelectric Effects & Devices
- (b) SAW Devices & Oscillators
- (c) SAW Filters & Transducers
- (d) SAW Materials & Propagation
- (e) SAW System Applications

- (f) SAW Signal Processing
- (g) SAW Thin-Films & Devices
- (h) Micromachining

V. TRANSDUCERS & TRANSDUCER MATERIALS

- (a) Transducer Modeling (FEA and Analytical)
- (b) Transducer Fabrication Technology
- (c) Transducer Material Characterization and Modeling
- (d) Materials/Technology for Medical Transducers
- (e) Medical Transducers
- (f) Transducers - Air Coupled
- (g) Micromachined Ultrasound Transducers
- (h) Piezoelectric and Ferroelectric Transducer Materials

VI. FERROELECTRICS

- (a) Ferroelectric Devices
- (b) Piezomagnetic Materials
- (c) Ferroelectric Materials: Single Crystal, Polycrystal Thin Film, Polycrystalline Solids, Polymers, and Composite Forms
- (d) Ferroelectric Properties: Dielectric, Piezoelectric, Pyroelectric, Electro-Optic, Nonlinear Optic, and Electrostrictors
- (e) Ferroelectric Phenomena: Domains, Phase Boundaries, Switching, Poling, Fatigue, and Imprint
- (f) Ferroelectric Applications: Capacitors, Transducers, Sensors, Actuators, DRAM, Fe RAM, Long Wire IR Thermal Sensing, and Imaging
- (g) Integrated Ferroelectrics

VII. FREQUENCY CONTROL

- (a) Timing and Time Distribution
- (b) Crystal Oscillators and Filters
- (c) Atomic, Molecular, and Laser Frequency Control
- (d) Other Means of Classical Frequency Control
- (e) Frequency Measurement and Statistics

Submission via Manuscript Central (MC): To qualify for publication in the *IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (TUFFC)*, the submissions must be unpublished and not be under consideration elsewhere (see "Ethics" later in this document). However, previously published conference papers are an exception, provided that the papers have not been previously peer reviewed. An example is a paper for which only the abstract had been reviewed and for which there exists no copyright conflict with the publisher of the conference paper. All conference manuscripts will receive the same level of review as any other manuscript to ensure a consistent quality of the *TUFFC*. For manuscripts that have more than one author, the corresponding author must ensure that all authors are aware that the manuscript is being submitted to *TUFFC*.

Starting **June 1, 2002**, manuscripts will be accepted electronically **only** through a system called Manuscript Central (MC) at the website: <http://tuffc-ieee.manuscriptcentral.com/>. Please follow the "Submission Instructions" accessible via the "Instructions and Forms" icon in the upper right. Authors of manuscripts received in paper copy only at our editorial office after this date will be requested to resubmit the manuscript electronically.

Authors may choose not to submit a manuscript via MC during a three-month transition period from June 1, 2002 through August 31, 2002. During this time, the editorial office will convert these manuscripts to an electronic

form with a scanner on your behalf. After this transition period, a paper version is acceptable only under extenuating circumstances and with the prior approval of the Editor-in-Chief or the Associate Editor-in-Chief. Please notice that the conversion from a paper manuscript to an electronic form with a scanner usually results in lower quality and larger file size than a direct submission of an electronic manuscript via MC; thus, it is not preferred.

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With electronic submission and manuscript reviews, the UFFC society expects to reduce time from submission to publication and make the review process more transparent to the author by allowing electronic status checking of the review progress.

Types of Contributions: There are five types of contributions as follows. PAPERS may be of any length and must generally satisfy requirements for completeness. Manuscripts may be returned to the authors for revision in response to reviewers' recommendations. (Papers may include Special Issue papers and Invited papers.) CORRESPONDENCES are narrower in scope and shorter than Papers. Correspondences typically do not occupy more than **four** *TUFFC* pages. Both Papers and Correspondences receive the same level of review. LETTERS are short, rapid communications for which timeliness is essential. Letters will be reviewed only for acceptance or rejection to speed the process. Published Letters must occupy no more than **two** *TUFFC* pages. FRONT COVER IMAGES of the IEEE *TUFFC* include contributed images. When a manuscript is revised and resubmitted, authors are encouraged to submit the color version of an image in the manuscript as a front cover image. There is no publication charge to authors for front cover images. Front cover images will be subject to a peer-review process to judge their appropriateness. Images submitted independent of a manuscript will also be considered, but preference will be given to those with manuscripts that are going to appear in the corresponding issue. Because there are only 12 images that can be published on the front covers each year, not all accepted images will appear on the front covers. When there is more than one image accepted for a particular issue, only one will be used for that issue. The remaining images plus others submitted independently may be used in a future issue for which there is no suitable image for that issue. Recent front cover images can be found at <http://www.ieee-uffc.org/tr/covers.htm>. ERRATA provide a forum for authors to make corrections to their papers published previously in *TUFFC*. A recent example can be found in Vol. 47, No. 3, Nov. 2000 at <http://www.ieee-uffc.org/tr/>.

Preparation: Manuscripts must be prepared carefully and written in a clear and concise style. The Editors emphasize the necessity of using correct English. Because *TUFFC* publishes only in English, contributors for whom English is not a native language should consult a competent colleague for the purpose of editing the original manuscript.

The text of manuscripts must be prepared according to IEEE guidelines. See the IEEE publication "Information for Authors" for a complete description of formatting, notation, captioning, and bibliographic style. This publication is available at <http://www.ieee.org/organizations/pubs/transactions/auinfo97.pdf>. Special notice should be taken of Section IV, "General Manuscript Preparation."

The font size of manuscripts should be **11** or **12** points. The margin is of **1** inch on all sides. The page size should be set to 11 inch × 8.5 inch (27.9 cm × 21.6 cm) with portrait orientation. The text should be double-spaced and in a single column. Each contribution must contain an abstract (not more than **200** words for Papers and **50** words for Correspondences and Letters). The abstract should indicate the scope of the manuscript and summarize the author's conclusions. This will make the abstract, by itself, a useful tool for information retrieval. Illustrations (graphics) and tables must be inserted into the text of a manuscript without the text wrapped around. Each figure and table should have a caption that is intelligible without requiring reference to the text. Figure captions should be under the figures, beginning with "Fig. #." Table captions have a similar requirement, beginning with "TABLE #." References must be complete, in IEEE style, and appear in a **separate** reference section at the end of the contribution, double-spaced, single column, with corresponding items in the text referred to by numerals in square brackets. Reference style for papers: Author (first initial followed by last name), title, periodical, volume, inclusive page numbers, month, year. Reference style for books: Author, title. Location: publisher, year, chapter or page numbers.

For graphics, all lettering must be of uniform size and large enough to permit legible reduction to column width (3.5 in or 8.9 cm). Use lettering only where necessary.

This paragraph provides one method of producing graphics in a manuscript. The same principle to reduce file sizes is applicable to other software as well. To produce a figure that can be embedded into your word processor such as Microsoft Word, you can "Save as" or "Export" your graphics to EPS (encapsulated PostScript) format after selecting the graphics you want to export from your graphic application software such as Adobe Photoshop or Corel Draw. You can also print your graphics to a file with a PostScript driver instead of a printer from your graphic application. Rename the filename from an extension such as "PRN (print)" to "EPS." The EPS file can then be opened with the free software named GhostView (<http://www.cs.wisc.edu/%7Eghost/>) and then copied and pasted into your word processing file. To avoid a large white space around your graphics, select "EPS Clip" in the pull-down menu "Options" of the GhostView. To produce graphics of a sufficient high quality for the peer-review process, authors should control the resolutions and sizes with GhostView before copy/paste. (For example, in the pull-down menu "Media," selecting "Display Settings . . .," and then setting the "Resolution" to **100** ppi (pixels per inch) will be sufficient for the peer-review process in most cases.) Strike a balance between resolution and file size. For example, a 7 inch × 10 inch figure of 100 ppi resolution with 24-bit RGB color will result in an uncompressed file size of 2.1 Mega Bytes (MB). There is no need to produce a figure size that is larger than **7** inch × **10** inch because the text area of the printed *TUFFC* is smaller. To further avoid unnecessary large file sizes and a long downloading time for both editors and reviewers, in the "Depth" setting of the GhostView, select "8-bit" for grayscale or color images, which usually will result in a satisfactory quality with only 1/3 of the file size as compared with "24-bit." For black-and-white line drawings, select "1-bit," which is appropriate for an 8-fold reduction in file size as compared with "8-bit." The figure quality of the final PostScript file

and PDF file can be verified in GhostView or in MC before the manuscript is formally submitted.

After the manuscript is prepared with a word processor, the authors can print the manuscript to a “PRN” file with a PostScript driver instead of printer. Then, rename the extension “PRN” to “PS” for uploading to MC. Other acceptable file formats for the manuscript are listed in the “Submission Instructions” at the MC site. (Click on the “Instructions and Forms” icon on the login or any other screen at <http://tuffc-ieee.manuscriptcentral.com/>.) Some word processing software such as Microsoft Word allow direct conversion of files to PDF if authors have a full version of Adobe Acrobat 4.0 or higher installed on their computer. For Microsoft Word files, MC can automatically convert them into PDF.

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Submission of Files for Production of TUFFC: When the revised manuscripts are submitted via MC, authors are also requested to submit the original revised word processing file of the manuscript (not just the PDF file) and high quality graphics for journal production. For each file uploaded to MC during the submission process, the authors should provide a description including computer hardware and software used (both operating system and versions of applications), file type (such as EPS), and figure and table numbers (such as figure1_a and table2_b) corresponding to the manuscript. To avoid graphics being reduced to an unacceptably small size during the production, please specify a suggested publication width (our standard width is one of the following: 21, 33, and 43 picas, where 6 picas are equal to 1 inch or 25.4 mm) for each illustration (a “Description” window will automatically popup for each file uploaded in MC). For best results, please submit your graphics in one of the three standard widths given.

i) Graphics and Tables: The graphics and tables in the word processing files usually do not have production quality because of the conversion during the

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The desirable formats for the graphics files are TIFF (tagged image file format) or EPS. JPG and other lossy compression formats may produce a smaller file size but usually result in poorer quality. All art must be in black and white or grayscale unless approval for color has been given.

To avoid unnecessarily large file sizes and to reduce the cost for using the MC system, each graph should not be bigger than 7 inch × 10 inch. The desired resolution of grayscale or color graphs for sufficient TUFFC production quality is 300 pixels per inch (ppi). Each pixel has a depth of “1-bit”, “8-bit”, or “24-bit.” A “24-bit” graph will result in a file size 24 times larger than 1-bit. In an extreme case (7 inch × 10 inch with 24 bit depth at 300 ppi resolution), the uncompressed file size will be 18.9 MB. For monochrome bitmaps (such as black-and-white line plots), the desired production resolution is 600 pixels per inch. In this case, each pixel should be 1-bit in depth (a pixel at 1-bit depth is called a dot). “Dots per inch” or dpi is used to measure resolution in this case. For most authors who do not submit color graphs, 8-bit for grayscale and 1-bit for monochrome bitmaps are sufficient. To reduce file sizes and uploading and downloading time, it is necessary to compress all files that are used for production (graphics, bitmaps, line plots, and word processing files with figures, etc.) before uploading. Freeware for the compressions such as QuickZip can be downloaded at: <http://quickzip.ifroggy.com/>.

ii) Word Processing Files: Equations entered as graphic elements will be lost in translation during journal production and should be avoided. Files must be self-contained; that is, there should be no pointers to your system setup. Do not create special macros. Acceptable word processing programs include TeX, LaTeX, Microsoft Word, AmiPro, Microsoft Works Windows, Microsoft Works DOS, Word for Windows, Word DOS, WordPerfect DOS, WordPerfect MAC, WordPerfect Windows, and WordStar. Page layout software such as Ventura, Pagemaker, and Quark are not acceptable.

iii) Author Photos and Biography: Photos and biographies are accepted for Papers only; they are not used in Correspondences and Letters. Authors should submit their biographies and recent photographs (taken within the past five years) via MC. The biography consists of three paragraphs: 1) name, where and when born, degrees earned, field(s) of study, school, city, state; 2) chief employment dates, organizations, positions held, type of work, responsibilities, present position; and 3) professional society membership, offices, awards. The biography should be submitted as a separate ASCII text or word processing file. A 1.5 inch × 2 inch photo with 300 ppi at 8-bit pixel depth will have high enough resolution for the TUFFC.

Color Illustrations: Authors are responsible for the incremental cost of printing in color, typically between \$1000 and \$1500 per page. Payment of fees on color reproduction is not negotiable or voluntary, and the author’s agreement to publish the manuscript in TUFFC is considered acceptance of this requirement.

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Ethics: It is the responsibility of authors to obtain all necessary approval and to follow ethics when treating human subjects and animals. A footnote should appear in the manuscripts to indicate such approval.

It is unethical for authors to submit a manuscript to multiple journals simultaneously for review. The IEEE Code of Ethics can be found at <http://www.ieee.org/about/whatis/code.html>.

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