

Congratulations on the acceptance of your paper for APEC 2003, the 18<sup>th</sup> Annual Applied Power Electronics Conference and Exposition. This Author's Kit will provide you all that you need to prepare and submit your paper for publication and presentation.

The Author's Kit includes:

1. Special Notice To APEC Authors
2. APEC 2003 General Instructions To Authors
3. *Preparing and Submitting Electronic Files For The Sixteenth Annual IEEE Applied Power Electronics Conference and Exposition (APEC 2003)*
4. *Preparation of Papers in Two-Column Format for the Proceedings of APEC 2003*
5. Copyright Release Form (mandatory)
6. Presentation instructions and tips to help make your presentation clear and readable when projected,
7. Instructions on submitting your paper to either the *IEEE Transactions On Power Electronics* or the *IEEE Transactions On Industrial Applications*.

Should you have any questions, please do not hesitate to contact the APEC 2003 offices by phone, fax or email at:

APEC 2003  
2025 M Street, NW  
Suite 800  
Washington, DC 20036

Phone: +1-202-973-8664  
Facsimile: +1-202-331-0111  
Email: [apec@courtesyassoc.com](mailto:apec@courtesyassoc.com)  
Website: [www.apec-conf.org](http://www.apec-conf.org)

# Special Notice

## To

# APEC Authors

To avoid any possible misunderstandings about what is required of APEC authors, several key points are listed below. Please read them carefully.

- Final, camera-ready and electronic manuscripts are due at the IEEE no later than Friday, November 22, 2002.
- Papers received after November 22, 2002 may not be published in the APEC Proceedings.
- Papers are limited to seven pages. For each page over seven a page charge of US\$100.00 is made. These page charges are due when the paper is received at the IEEE. Failure to include page charge payments with the manuscript may result in the paper not being published in the Proceedings.
- Papers that are not in the Proceedings will not be presented at the Conference.
- Papers are to be presented orally, in English, at the conference. Failure to present the paper may result in digests from “no show” authors not being accepted by APEC for one or more years.
- All expenses related to preparing the camera-ready manuscript and presenting the paper at the conference, including but not limited to travel expenses, are the sole responsibility of the author or authors.
- The Presenting Author is required to register and pay the normal registration fee for the Technical Sessions portion of the conference.
- The Presenting Author is required to attend the Author’s Briefing and Breakfast on the morning of the day the paper is to be presented.

If you have any questions, do not hesitate to contact APEC at:

**APEC 2003**  
**2025 M Street, NW**  
**Suite 800**  
**Washington, DC 20036**

Phone: +1-202-973-8664  
Facsimile: +1-202-331-0111  
Email: [apec@courtesyassoc.com](mailto:apec@courtesyassoc.com)  
Website: [www.apec-conf.org](http://www.apec-conf.org)

## APEC 2003 General Instructions For Authors

### Introduction

---

The APEC Conference Proceedings is published in a softbound printed book and on CD-ROM. Starting this year, submissions for the proceeding are done electronically. There is no longer any need to submit printed manuscripts to APEC.

This document provides the information you need to:

- Prepare your manuscript for submission to the IEEE,
- Complete and return the required copyright release form,
- Prepare your presentation for the conference,
- Present your paper at the conference and
- Submit your paper to either the *IEEE Transactions On Industry Applications* or the *IEEE Transactions On Power Electronics*

### Deadlines

---

Your electronic manuscript must be uploaded onto the IEEE Publishing server no later than **November 22, 2002**.

**November 22, 2002 is a FIRM DEADLINE!** Papers received after this date may not appear in the printed Proceedings or CD-ROM. Papers that do not appear in the Proceedings will not be presented at the conference.

### Page Limit And Page Charges

---

Your complete paper must occupy no more than 7 pages. *Papers that exceed this length will be charged \$100.00 per page over 7 pages.* If page charges are due, send a check or money order along with the author's name, paper number and paper title to:

APEC 2003  
c/o Courtesy Associates  
2025 M Street, NW, Suite 800  
Washington, DC 20036

Each page can typically fit approximately 700 words or two illustrations (assuming each illustration is two-column format). A page could contain as many as six illustrations if they are sized accordingly.

Manuscripts received without the required page charges may not be included in the Proceedings. Papers that do not appear in the Proceedings will not be presented at the conference. In addition, digests submitted to future APECs by authors with delinquent page charges will not be considered for review until all such charges are paid in full.

## APEC 2003 – General Instructions For Authors

### Preparing And Submitting Your Manuscript

---

Instructions for preparing and submitting your electronic manuscript are given below in *Preparing and Submitting Electronic Files For The Sixteenth Annual IEEE Applied Power Electronics Conference and Exposition (APEC 2003)*. A sample manuscript, *Preparation of Papers in Two-Column Format for the Proceedings of APEC 2003*, shows how a completed manuscript should look. Please follow as closely as possible these instructions for preparing your paper for publishing.

A sample manuscript in Microsoft© Word 97 For Windows format with all of the appropriate formatting and styles defined, [APEC 2003 Manuscript Sample.doc](#), is available for download from the [APEC 2003 Author's Page](#).

### Paper Submission Checklist

---

All of the items below must be complete for your paper to be accepted for publication:

- ☐ Electronic manuscript uploaded to the IEEE website and the PDF file approved
- ☐ IEEE Copyright form completed and returned to the IEEE
- ☐ Page charges, if any, received at the APEC offices.

#### IMPORTANT NOTICE

Please note that a completed Copyright Release form is required for publication.

Receipt of your contribution to this conference together with the copyright form constitutes release for open publication, and no cancellation of such release is permissible.

If your contribution is not 100% completely releasable, DO NOT SEND IT IN; however, please notify APEC 2003 of your decision in writing. APEC 2003 reserves the right to omit manuscripts from the Proceedings if they arrive too late to meet printer deadlines.

### Special Notes

---

#### Subsequent Publication

Publication in the Conference Proceedings and CD-ROM of APEC 2003 in no way precludes later publication elsewhere of a more complete account of your work. Please see the instructions below for submitting your paper to either the *IEEE Transactions On Power Electronics* or the *IEEE Transactions On Industrial Applications*.

#### Rehearsal Room

APEC will **not** have a space for you to preview or rehearse your presentation. This makes it most important that you attend the Author's Briefing and meet with the projectionist well before the start of your session.

## **APEC 2003 – General Instructions For Authors**

### **Language And Translation Services**

At APEC, all business is conducted and all presentations made in English. Please be advised that APEC does not provide translators or translation services.

### **Expenses**

All expenses for preparing the manuscript, the presentation slides or transparencies and for presenting the paper at the conference, including but not limited to travel expenses, are the sole responsibility of the author or authors.



# Preparing and Submitting Electronic Files For The Sixteenth Annual IEEE Applied Power Electronics Conference and Exposition (APEC 2003)

This document was prepared by the IEEE Conference and Custom Publishing Department to facilitate the generation and delivery of electronic manuscripts for use in both print and electronic products. It also provides guidance for a new collection process. Please review it carefully.

## CONTENTS

Overview of Process

Copyright Policy

### Preparing Your Manuscript

Acceptable File Types

Manuscript Layout

Fonts

Graphics/Images

### Delivering Your Submission

Compressing Your Submission

Naming Your File

Submitting Your Copyright Form

Submitting Your Electronic Manuscript

Frequently Asked Questions (FAQs)

## OVERVIEW OF PROCESS

1. Author downloads, completes, and signs IEEE copyright form.
2. Author creates final manuscript.
3. Author sends completed and signed copyright form to Elizabeth Aubrey, APEC 2003, IEEE Conference Publishing, 445 Hoes Lane, Piscataway, NJ 08854.  
or Fax copyright form to +1 732 981 0925
4. *APEC 2003 File Conversion and Approval* website opens 25 October 2002 for author submissions.
5. Author creates login and logs into the *APEC 2003 File Conversion and Approval* website.
6. Author enters **APEC03** for conference ID, creates account, and uploads source file by **22 November 2002**.
7. Source file is converted to PDF; author is sent email notification that PDF is ready for review. The PDF is also attached to the notification email should the author prefer to review it locally rather than online.
8. Author is required to review each page for content and layout; the author “approves /not approves”, the PDF online.
9. If “not approved”, corrected source file may be submitted; return to Step 6.
10. *APEC 2003 File Conversion and Approval* website **closes 22 November 2002**.

## COPYRIGHT POLICY

All authors who submit articles for publication by IEEE must also fill out, sign, and submit an IEEE copyright form. It is not necessary that each author of an article sign the copyright form: one author (or other authorized person) can act as representative for all. The copyright form must be received by IEEE well before the date of publication (in most cases, several weeks). The IEEE copyright form can be found at <http://www.ieee.org/about/documentation/copyright/cfrmlink.htm>, please write paper ID on top of form before mailing or faxing.

## PREPARING YOUR MANUSCRIPT

### Acceptable File Types for your Manuscript

Rich Text Format	PageMaker	Word Pro
Freelance	FrameMaker	Microsoft Word
(La)TeX w/ DVI*	QuarkXpress*	WordPerfect

\*For documents created in formats that do not embed source files, include all support files with the final manuscript in a folder. This folder must then be placed in a compressed archive for submission.

### Manuscript Layout

Conference manuscripts should adhere to the standard IEEE two-column format for conferences. Authors are free to use good judgment in the presentation of their information. These guidelines are meant only as helpful tools. We have also provided a sample manuscript for visual reference as well as LaTeX and Word templates: US letter and A4.

The Conference Manuscript Format Definition Table that follows describes the general layout. The *Glossary of Terms* used in the table appears below. Templates are available for Word 97 (US letter), Word 97 (A4), and LaTeX (US letter and A4). All templates either contain or have associated documentation containing grammar, spelling and/or special layout instructions, all of which we strongly encourage you to read. For other file formats, use the layout specifications given in the table to format your manuscript.

A sample manuscript is available for visual reference, and has examples of most of the format definitions listed.

### Glossary of Terms for the Conference Manuscript Format Definition Table

<b>1 em</b>	Length equal to the width of uppercase M in a particular font Example: 1 em in 10 point Times New Roman is approximately 0.125 inch.
<b>conference title style</b>	first word always capitalized, and all other words capitalized except for conjunctions (and, but, or, etc.), prepositions/prepositional phrases having six characters or less per word (after, into, based on, etc.), and articles (a, an, the, etc.).
<b>footnote style</b>	refers to standard footnote style defined in THE CHICAGO MANUAL OF STYLE.
<b>justification</b>	alignment of a text line with regard to margins.
<b>left-justified</b>	aligned along the left side of the column or margin.
<b>left- / right-justified</b>	aligned along both sides of a column, as in a typical conference manuscript column.
<b>parens</b>	parenthesis or parentheses. ( = Left, or open, parens.    ) = Right, or close, parens.
<b>pica</b>	unit of length equal to $\frac{1}{6}$ of one inch, typically used to define spacing between lines.
<b>point</b>	unit of length equal to $\frac{1}{72}$ of one inch, typically used to define font size and paragraph spacing.
<b>reference style</b>	refers to standard reference style defined in THE CHICAGO MANUAL OF STYLE.
<b>regular (type)</b>	not bold or italic (type).
<b>right-justified</b>	aligned along the right side of the column or margin.
<b>run-in</b>	paragraph text follows immediately after heading label and colon. Heading 3 and 4 styles are run-in, section heads (1) and heading 2 styles are not (paragraph text starts on next line). See examples in sample manuscript.
<b>standard (style)</b>	refers to typical American English capitalization, spelling, and grammar rules.
<b>symbol footnotes</b>	non-numeric symbols commonly used for footnotes. Some examples are $\dagger$ $\ddagger$ $\S$ $\#$ $\square$ $*$ $a$ $b$ $c$ .



# CONFERENCE MANUSCRIPT FORMAT DEFINITION TABLE

## MARGINS

**US Letter-sized paper:** side = 0.625 inch; top = 0.75 inch; bottom = 1 inch; columns—single = 7.25-inch width, —double = each 3.5-inch width with .25 inch between  
**A4 paper size:** side = 13 mm; top = 19 mm; bottom = 43 mm; columns—single = 184-mm width, —double = each 88.9-mm width with 6.2 mm between

Text Type <i>click on label to view example</i>	Font Size/Type	Line Spacing	Justification	Numbering	Style	Number of Columns [see MARGINS, above, for widths]	Special Formatting
<b>Title</b>	24 points/ regular	28 points	centered	n/a	conference title style	one column	
<b>Author Name</b>	11 points/ regular	12 points	centered	n/a	standard	<i>up to three affiliations:</i> one per column (max. 2.25 inches/three columns); <i>over three affiliations:</i> 7.25 inches/one column, author names listed across, with symbol footnotes	Author name should start approx. 0.25 inch below title.
<b>Author Affiliation</b>	10 points/ regular	11 points	centered	n/a	standard	<i>up to three:</i> one per column (see above); <i>over three:</i> across one column on single line, each separated by ½ pica	
<b>Abstract</b>	9 points/bold, “Abstract—”: bold+italic	10 points	left- and right-justified	n/a	standard	two columns	Abstract should start approx. 0.5 inch below last line of author affiliation.
<b>Text</b>	10 points/ regular	12 points	left- and right-justified	n/a	standard	two columns	
<b>Section Heads (1)</b>	10 points/ regular	14 points	centered	Optional—Capital Roman numerals (I., II., etc.)	Capitals/small caps	two columns	<i>Acknowledgment</i> and <i>References</i> sections should NOT have numbering.
<b>Heading 2</b>	10 points/ italic	12 points	left-justified	Capital alpha numerals (A., B., etc.)	standard	two columns	
<b>Heading 3</b>	10 points/ italic	12 points	left-justified	Arabic numerals + right parens + <i>text</i> + colon, run-in, indent 1em	standard	two columns	
<b>Heading 4</b>	10 points/ italic	12 points	left-justified	Lower case alpha numerals + right parens + colon, run-in, indent 2em	standard	two columns	
<b>Footnotes</b>	8 points/regular	9 points	left-justified	superscript Arabic numerals preceding	footnote style	two columns	
<b>References</b>	8 points/regular	9 points	left-justified	Arabic numerals in brackets ([1], [2], etc.)	reference style	two columns	
<b>Figure Captions</b>	8 points/regular	9 points	centered below figure	Arabic numerals: “Figure ” + numeral (+ period + text) (optional)	standard	one column or two columns	
<b>Table Captions</b>	8 points/regular	9 points	centered above table	Capital Roman numerals: “TABLE” + numeral (+ colon + text) (optional)	Capitals/small caps	one column or two columns	
<b>Table Text</b>	8 points	9 points	optional	n/a	standard	one column or two columns	
<b>Single-line Equations</b>	10 points	12 points	centered	Optional—Arabic numerals in parens, right-justified [(1), (2), etc.]	standard	two columns	Equation should have 1 pica before and after.
<b>Double-line Equations</b>	10 points	1 pica before and after	1 <sup>st</sup> line left-justified, 2 <sup>nd</sup> line right-justified, indented 1em	optional- see above	standard	two columns	See above
<b>Multi-line Equations</b>	10 points	1 pica before and after	Equal signs (=) aligned, or lines after 1 <sup>st</sup> line aligned right of equal sign	optional- see above	standard	two columns	See above

n/a = not applicable

## Fonts

The **preferred font** is *Times New Roman*. Minimum point size for all text (including text in graphics and tables) is 4 points. The following fonts are also acceptable:

AdobeSanMM	Arial MT, Bold Italic	Times New Roman PS MT
AdobeSerMM	Courier	Times New Roman PS MT, Italic
Arial MT	Courier, Italic	Times New Roman PS MT, Bold
Arial MT, Italic	Courier, Bold	Times New Roman PS MT, Bold Italic
Arial MT, Bold	Courier, Bold Italic	ZapfDingbats
	Symbol	

Using only the specified fonts provides a consistent look to all the papers in the proceedings. If you decide to use fonts other than those listed, they must be either **Postscript** or **TrueType**. Use of custom-made or hacked fonts is prohibited and your file will be rejected.

## Graphics/Images

### IMPORTANT:

All images must be

- embedded in your document, or
- included with your submission as individual source files—see Delivering your Submission for information about compressed archiving

The type of graphics you include will affect the quality and file size of your manuscript. In general, vector graphics, such as those produced by most presentation and drawing packages, are electronically efficient and will not conflict with conversions to PDF.

### When Preparing Graphics/Images

- Make sure that any text in the graphic has a ***minimum point size of 4 points***. Text below the minimum point size will not be readable in print.
- Do not use custom halftones (photographs) and pattern fills. (In Lotus Freelance, Fill Patterns do not convert to PDF and a white solid fill is substituted.) Instead, use solid-color or grayscale fills to produce a more readable document on-screen that will also load and print significantly faster. This is especially important for charts and graphs.
- Do not select “Smooth Graphics”. This option often produces extremely large files that will take a long time to display and print. The Smooth Graphics option is usually found in the Page Setup Dialog box in Macintosh applications and some Windows applications.

### The Use of Bitmapped Images

Bitmapped images, such as those produced when a photograph is scanned, require significant storage space and must be used with care. Bitmap graphics store an image as a series of numbers that represent the color of each dot in the image. Increasing the size, resolution (dots per inch), or number of colors in an image will dramatically increase the size of the image. To improve the quality of bitmap graphics:

- Bitmapped images should be as small as possible: no more than 256 (8 bit) color/grayscale, 300 dots per inch.
- Reduce the number of display colors before making screen shots. The majority of computer applications use fewer than 16 colors for their menus, dialogs etc.
- Select higher resolutions only for images that a reader will magnify. Image resolution of bitmapped images does not increase when readers zoom in on an image.

If your paper contains images with resolution that exceeds the maximum of 300 dpi, they will be downsampled during the conversion process. ***However this automated process used will not always produce the best image—you are encouraged to perform this yourself (downsampling) on an image-by-image basis.***

## DELIVERING YOUR SUBMISSION

### Compressing your submission

Only one file can be uploaded for each manuscript. For documents created in formats that do not embed source files, include all support files with the final manuscript in a folder. This folder must then be placed in a compressed archive for submission, using one of the following formats:

Pkzip (.zip)

Tar (.tar)

StuffIt (.sit)

GNU Zip (.gz)

GNU Zip Tar (.tgz)

Compress (.z)

Compress Tar (.taz)

LHA (.lhz)

ARJ (.arj)

### Naming your file

The convention used to name your file incorporates your paper number and the author's last name as follows: paper number, followed by underscore[\_], then the author's last name, then the appropriate format extension. For example, if your paper is a Word file that has the paper number 10117 and the author's last name is Smith, you would name your file 10117\_smith.doc.

### Submitting your Copyright form

From the *File Conversion and Approval Website*, you can print out the copyright form. The IEEE copyright form can also be found at <http://www.ieee.org/about/documentation/copyright/cfrmlink.htm>. You must send a completed and signed copyright form and upload your manuscript to the website by **22 November 2002**.

Mail or fax your copyright form to Elizabeth Aubrey—APEC 2003, IEEE Conference Publishing, 445 Hoes Lane, Piscataway, NJ 08854 USA. The fax number to send your copyright form is +1 732 981 0925.

### Submitting your electronic manuscript

Go to <http://216.228.1.34/authrev/log.asp> to upload your electronic file to the *APEC 2003 File Conversion and Approval* website. You will be at the File Conversion Login screen. If you are entering for the first time you must click on “*First time logging in*” and open an account, enter APEC03 for the conference ID and a correct email address where you can be contacted, click on the submit button, then follow the instructions provided for you. *Note: You will be notified via email, please make sure that the email address that you use is current.*

Each page includes instructions for logging into the *APEC 2003 File Conversion and Approval website*, creating your user ID and account, uploading your file, reviewing your file, and accepting or rejecting your PDF. If you do not have the ability to submit your paper electronically, please email [e.aubrey@ieee.org](mailto:e.aubrey@ieee.org).

### Review your PDF

After you submit your source file, you will need to review the resulting PDF within approximately 24 hours. You will receive email notification when the PDF is ready to be reviewed. The PDF will be attached to your email for review on your computer or you can review it online. In either case, you will need Adobe® Acrobat® Reader version 4.0 or higher installed on your computer. (If you do not already have this software, please go to <http://www.adobe.com/support/downloads>).

You are responsible for verifying that your paper has been accurately converted, including graphics and special characters (e.g., equations). **Your paper will not be accepted if you do not complete this review.** It is highly recommended that you review each page both on screen and from a printout of the PDF.

You are entitled to a maximum of two (2) revisions after your initial submission. To resubmit, you must first “not approve” the PDF before you can upload a revised source document. After you have accepted your PDF, you cannot submit a revised version without deleting your original submission.

## FREQUENTLY ASKED QUESTIONS

- Q My system keeps timing out when I try to upload my file. What should I do?
- A Your file is too big or your internet connection is too slow or a combination of both. You can decrease the resolution in your graphics or get a faster internet connection. You may compress your file if necessary.
- Q If I have difficulty creating my account, uploading my file, or assigning file status, what should I do?
- A Please send an email to [support@incontrolproductions.com](mailto:support@incontrolproductions.com) to request assistance. Include in the email a description of the problem you are having. If you have created an account, please provide the email address you used to create the account.
- Q How will I know if my electronic manuscript was received?
- A “*APEC 2003: Author Services*” emails will be sent to the email address you entered when you created your login: one to confirm your account and another to notify you that your PDF is ready for review.
- Q When I review my PDF, what should I be looking for?
- A All PDFs should be thoroughly reviewed both on screen and in print. Check that (a) your overall layout has been maintained, (b) that all graphics have been included, and that they appear as you intend, especially in print (graphics that look good on screen often will not present well in print), and (c) that no font substitution occurred, especially in equations and with other special characters.
- Q I cannot review my PDF online but I have reviewed it on my computer. How do I accept or reject my PDF?
- A Log onto the *APEC 2003 File Conversion and Approval website*, click on the file name listed under “Set Status on PDF” of the File Conversion Status Table. When the window attempts to open the PDF, close it. You will see the “Assign File Status” window. There you can accept or reject your PDF.
- Q What if I reject the PDF that was created?
- A In the comment section, you need to explain exactly what is wrong with the PDF and where the problem can be found, i.e., what page and approximate location on the page. If you reject the PDF because you wish to submit a revision, select this choice on the “Assign File Status” web page.
- Q How do I send a new version?
- A Go to the *APEC 2003 File Conversion and Approval website* to submit revisions. You are limited to three file conversions (the original and two resubmissions).
- Q What if I want to edit my paper?
- A Only authors can edit their paper. Edit your paper and send this revised file as a resubmission.
- Q Question: I submitted a revised version of my paper but my PDF being displayed online is my old PDF. What can I do?
- A Answer: It is likely that your web browser is displaying a cached version of your PDF. To refresh your browser select "View" from the toolbar. A drop down list will appear. Press and hold the "Control" key on your keyboard and select "Refresh" from the drop down menu.

# Preparation of Papers in Two-Column Format for the Proceedings of Conferences Sponsored by IEEE

J. Q. Author  
IEEE Conference Publishing  
445 Hoes Lane  
Piscataway, NJ 08855-1331

**Abstract**—These instructions give you basic guidelines for preparing camera-ready papers for conference proceedings.

## I. INTRODUCTION

Your goal is to simulate the usual appearance of papers in an *IEEE conference proceedings*. For items not addressed in these instructions, please refer to the last issue of your conference's proceedings or your Publications chair.

### A. Full-Sized Camera-Ready (CR) Copy

Prepare your CR paper in full-size format, on US letter paper (8 ½ by 11 inches). For A4 paper, use the A4 template.

**Type sizes and typefaces:** Follow the type sizes specified in Table I. As an aid in gauging type size, 1 point is about 0.35 mm. The size of the lowercase letter “j” will give the point size. Times New Roman is the preferred font.

1) *US letter margins:* top = 0.75 inches, bottom = 1 inch, side = 0.625 inches.

2) *A4 margins:* top = 19mm, bottom = 43mm, side = 13 mm.

The column width is 88mm (3.45 in). The space between the two columns is 4mm (0.17 in). Paragraph indentation is 3.5 mm (0.14 in).

Left- and right-justify your columns. Use tables and figures to adjust column length. On the last page of your paper, adjust the lengths of the columns so that they are equal. Use automatic hyphenation and check spelling. Digitize or paste down figures.

TABLE I  
TYPE SIZES FOR CAMERA-READY PAPERS

Type size (pts.)	Appearance		
	Regular	Bold	Italic
6	Table captions, <sup>a</sup> table superscripts		
8	Section titles, <sup>a</sup> references, tables, table names, <sup>a</sup> first letters in table captions, <sup>a</sup> figure captions, footnotes, text subscripts, and superscripts		
9		Abstract	
10	Authors' affiliations, main text, equations, first letters in section titles <sup>a</sup>		Subheading
11	Authors' names		
24	Paper title		

<sup>a</sup>Uppercase

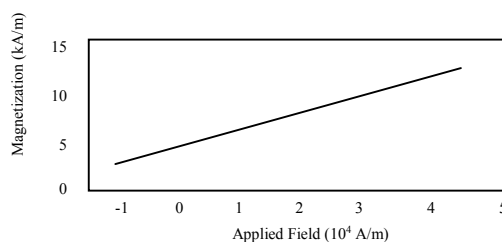


Figure 1. Magnetization as a function of applied field.  
Note how the caption is centered in the column.

## II. HELPFUL HINTS

### A. Figures and Tables

Position figures and tables at the tops and bottoms of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be centered below the figures; table captions should be centered above. Avoid placing figures and tables before their first mention in the text. Use the abbreviation “Fig. 1,” even at the beginning of a sentence.

Figure axis labels are often a source of confusion. Use words rather than symbols. For example, write “Magnetization,” or “Magnetization, M,” not just “M.” Put units in parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization ( $A \cdot m^{-1}$ ).” Do not label axes with a ratio of quantities and units. For example, write “Temperature (K),” not “Temperature/K.”

Multipliers can be especially confusing. Write “Magnetization (kA/m)” or “Magnetization ( $10^3$  A/m).” Figure labels should be legible, about 10-point type.

### B. References

Number citations consecutively in square brackets [1]. Punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]. Use “Ref. [3]” or Reference [3]” at the beginning of a sentence: “Reference [3] was the first ...”

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the column in which it was cited. Do not put footnotes in the reference list. Use letters for table footnotes (see Table I). *IEEE Transactions* no longer use

a journal prefix before the volume number. For example, use “IEEE *Trans. Magn.*, vol. 25,” not “vol. MAG-25.”

Give all authors’ names; use “et al.” if there are six authors or more. Papers that have not been published, even if they have been submitted for publication, should be cited as “unpublished” [4]. Papers that have been accepted for publication should be cited as “in press” [5]. In a paper title, capitalize the first word and all other words except for conjunctions, prepositions less than seven letters, and prepositional phrases.

For papers published in translated journals, first give the English citation, then the original foreign-language citation [6].

### C. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even if they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, sc, dc, and rms do not have to be defined. Do not use abbreviations in the title unless they are unavoidable.

### D. Equations

Number equations consecutively with equation numbers in parentheses flush with the right margin, as in (1). To make your equations more compact, you may use the solidus (/), the exp function, or appropriate exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use an en dash (–) rather than a hyphen for a minus sign. Use parentheses to avoid ambiguities in denominators. Punctuate equations with commas or periods when they are part of a sentence, as in

$$a + b = c. \quad (1)$$

Symbols in your equation should be defined before the equation appears or immediately following. Use “(1),” not “Eq. (1)” or “equation (1),” except at the beginning of a sentence: “Equation (1) is ...”

### E. Other Recommendations

The Roman numerals used to number the section headings are optional. If you do use them, do not number ACKNOWLEDGMENT and REFERENCES, and begin Subheadings with letters. Use two spaces after periods (full stops). Hyphenate complex modifiers: “zero-field-cooled magnetization.” Avoid dangling participles, such as, “Using (1), the potential was calculated.” Write instead, “The potential was calculated using (1),” or “Using (1), we calculated the potential.”

Use a zero before decimal points: “0.25,” not “.25.” Use “cm<sup>3</sup>,” not “cc.” Do not mix complete spellings and abbreviations of units: “Wb/m<sup>2</sup>” or “webers per square meter,” not “webers/m<sup>2</sup>.” Spell units when they appear in text: “...a few henries,” not “...a few H.” If your native language is not English, try to get a native English-speaking colleague to proofread your paper. Do not add page numbers.

## III. UNITS

Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as “3.5-inch disk drive.”

Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.

## IV. SOME COMMON MISTAKES

The word “data” is plural, not singular. The subscript for the permeability of vacuum  $\mu_0$  is zero, not a lowercase letter “o.” In American English, periods and commas are within quotation marks, like “this period.” A parenthetical statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical *sentence* is punctuated within the parentheses.) A graph within a graph is an “inset,” not an “insert.” The word alternatively is preferred to the word “alternately” (unless you mean something that alternates). Do not use the word “essentially” to mean “approximately” or “effectively.” Be aware of the different meanings of the homophones “affect” and “effect,” “complement” and “compliment,” “discreet” and “discrete,” “principal” and “principle.” Do not confuse “imply” and “infer.” The prefix “non” is not a word; it should be joined to the word it modifies, usually without a hyphen. There is no period after the “et” in the Latin abbreviation “et al.” The abbreviation “i.e.” means “that is,” and the abbreviation “e.g.” means “for example.” An excellent style manual for science writers is [7].

## ACKNOWLEDGMENT

The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g.” Try to avoid the stilted expression, “One of us (R. B. G.) thanks ...” Instead, try “R.B.G. thanks ...” Put sponsor acknowledgments in the unnumbered footnote on the first page.

## REFERENCES

- [1] G. Eason, B. Noble, and I.N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” *Phil. Trans. Roy. Soc. London*, vol. A247, pp. 529-551, April 1955.
- [2] J. Clerk Maxwell, *A Treatise on Electricity and Magnetism*, 3<sup>rd</sup> ed., vol. 2. Oxford: Clarendon, 1892, pp.68-73.
- [3] I.S. Jacobs and C.P. Bean, “Fine particles, thin films and exchange anisotropy,” in *Magnetism*, vol. III, G.T. Rado and H. Suhl, Eds. New York: Academic, 1963, pp. 271-350.
- [4] K. Elissa, “Title of paper if known,” unpublished.
- [5] R. Nicole, “Title of paper with only first word capitalized,” *J. Name Stand. Abbrev.*, in press.
- [6] Y. Yorozy, M. Hirano, K. Oka, and Y. Tagawa, “Electron spectroscopy studies on magneto-optical media and plastic substrate interface,” *IEEE Transl. J. Magn. Japan*, vol. 2, pp. 740-741, August 1987 [*Digests 9<sup>th</sup> Annual Conf. Magnetics Japan*, p. 301, 1982].
- [7] M. Young, *The Technical Writer's Handbook*. Mill Valley, CA: University Science, 1989.

# IEEE COPYRIGHT TRANSFER & EXPORT CONTROL COMPLIANCE FORM

To insure uniformity of treatment among all contributors, other forms may not be substituted for this form, nor may any wording of the form be changed. This form is intended for original material submitted to IEEE and must accompany any such material in order to be published by IEEE. Please read the form carefully and keep a copy for your files.

**TITLE OF PAPER/ARTICLE/REPORT/PRESENTATION/SPEECH (hereinafter, "the Work"):**

**COMPLETE LIST OF AUTHORS:**

**IEEE PUBLICATION (Journal, Magazine, Conference, Book) TITLE: APEC 2003**

## Copyright Transfer

The undersigned hereby assigns all rights under copyright and the Copyright Act, 17 U.S.C. § 101 et seq. that may exist in and to the above Work to The Institute of Electrical and Electronics Engineers Inc. (the "IEEE"). The undersigned hereby warrants that the Work is original and that he/she is the author of the Work; to the extent the Work incorporates text passages, figures, data or other material from the works of others, the undersigned has obtained any necessary permissions. The undersigned further warrants that the publication or dissemination of the Work shall not violate any proprietary right or the Digital Copyright Millennium Act (the "DCMA").

## Export Control Law Compliance

The IEEE, a not-for-profit organization headquartered in the State of New York in the United States of America, distributes its technical publications throughout the world and wants to ensure that the material submitted to its publications is properly available for general dissemination to the readership of those publications. The undersigned hereby certifies that: (1) the information contained in any materials submitted to the IEEE in connection with the Work is not subject to any restriction related to its disclosure, because it is not defense-related, classified, or subject to any other disclosure restrictions by any government, including the United States government, that has authority to restrict the dissemination of such information; (2) any and all necessary authorization(s) from the undersigned's employer(s) for the disclosure of the information discussed in the Work have been obtained; and (3) the foregoing applies to all future versions of the Work, edited by the undersigned, an assistant, co-author or any person working with the undersigned. If the information is subject to any disclosure restrictions, the undersigned certifies that all necessary written authorization(s) for its public disclosure have been obtained and are attached herewith. IEEE reserves the right to refuse publication of the Work or participation at a conference for failure to certify the foregoing.

## General Terms

The undersigned represents that he/she has the power and authority to make and execute this assignment.

The undersigned agrees to indemnify and hold harmless IEEE from any damage or expense that may arise in the event of a breach of any of the warranties set forth above.

In the event the above work is not accepted and published by the IEEE or is withdrawn by the author(s) before acceptance by the IEEE, this form agreement becomes null and void and all materials submitted to the IEEE will be destroyed in accordance with IEEE's export compliance program.

(1) \_\_\_\_\_  
Author/Authorized Agent for Joint Authors

\_\_\_\_\_  
Date

(For jointly authored Works, all joint authors should sign, or one of the authors should sign as authorized agent for the others.)

## U.S. Government Employee Certification (where applicable)

This will certify that all authors of the Work are U.S. government employees and prepared the Work on a subject within the scope of their official duties. As such, the Work is not subject to U.S. copyright protection.

(2) \_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

(Authors who are U.S. government employees should also sign signature line (1) above to enable IEEE to claim and protect its copyright in international jurisdictions)

## RETAINED RIGHTS/TERMS AND CONDITIONS

1. Authors/employers retain all proprietary rights in any process, procedure, or article of manufacture described in the Work.
2. Authors/employers may reproduce or authorize others to reproduce the Work, material extracted verbatim from the Work, or derivative works for the author's personal use or for company use, provided that the source and the IEEE copyright notice are indicated, the copies are not used in any way that implies IEEE endorsement of a product or service of any employer, and the copies themselves are not offered for sale.
3. Authors/employers may make limited distribution of all or portions of the Work prior to publication if they inform the IEEE in advance of the nature and extent of such limited distribution.
4. In the case of a Work performed under a U.S. Government contract or grant, IEEE recognizes that the U.S. Government has royalty-free permission to reproduce all or portions of the Work, and to authorize others to do so, for official U.S. Government purposes only, if the contract/grant so requires.
5. For all uses not covered by items 2, 3, and 4, authors/employers must request permission from the IEEE Intellectual Property Rights office to reproduce or authorize the reproduction of the Work or material extracted verbatim from the Work, including figures and tables.
6. Although authors are permitted to re-use all or portions of the Work in other works, this does not include granting third-party requests for reprinting, republishing, or other types of re-use. The IEEE Intellectual Property Rights office must handle all such third-party requests.

## INFORMATION FOR AUTHORS

### **IEEE Copyright Ownership**

It is the formal policy of the IEEE to own the copyrights to all copyrightable material in its technical publications and to the individual contributions contained therein, in order to protect the interests of the IEEE, its authors and their employers, and, at the same time, to facilitate the appropriate re-use of this material by others. The IEEE distributes its technical publications throughout the world and does so by various means such as hard copy, microfiche, microfilm, and electronic media. It also abstracts and may translate its publications, and articles contained therein, for inclusion in various compendiums, collective works, data bases and similar publications.

### **IEEE Export Control Policy**

It is the formal policy of the IEEE to request the certification set forth above for all the materials submitted for potential publication or disclosure at a conference, in order to protect the interests of the IEEE, its authors and their employers, and, at the same time, to facilitate the appropriate public release of the submitted information in accordance with U.S. law. When an article is submitted to the IEEE for publication along with the enclosed form, this indicates that the information is either not subject to any disclosure restrictions or the authors have received all necessary governmental approvals.

### **Author/Employer Rights**

If you are employed and prepared the Work on a subject within the scope of your employment, the copyright in the Work belong to your employer as a work-for-hire. In that case, the IEEE assumes that when you sign this Form, you are authorized to do so by your employer and that your employer has consented to the transfer of copyright, to the representation and warranty of publication rights, and to all other terms and conditions of this Form. If such authorization and consent has not been given to you, an authorized representative of your employer should sign this Form as the Author.

Further, if you are employed and prepared the materials submitted as a part of such employment, the U.S. export control responsibilities rest initially with your employer. In such instance, when this export control form is signed, you, as an agent of your employer, assume all the responsibilities for compliance under U.S. export control law. If you decline to do so or act without the consent and/or knowledge of your employer, then the IEEE will refuse to further consider the materials submitted for publication.

### **Reprint/Republication Policy**

The IEEE requires that the consent of the first-named author and employer be sought as a condition to granting reprint or republication rights to others or for permitting use of a Work for promotion or marketing purposes.

**PLEASE DIRECT ALL QUESTIONS ABOUT THIS FORM TO:**

**Manager, IEEE Intellectual Property Rights Office, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1131. Telephone (732) 562-3966**



## **APEC 2003 Presentation Instructions For Authors**

---

### **Presentation Media – Computer Projection**

APEC is encouraging all of its authors to prepare their presentations in electronic format. Microsoft PowerPoint® or Adobe Acrobat are the two formats available.

APEC will provide LCD Computer Projectors and computers in each session. Authors are asked to send their presentations to APEC no later than Monday, January 6, 2003 so that they can be loaded onto the computers in advance of the conference.

Authors will not be allowed to connect their computers to the display projectors. Transferring the projector from one computer to another and back again takes too much time and creates opportunities for computer crashes.

We do suggest that authors bring a back up of their presentation on overhead transparencies in case of computer or projector failure.

### **Presentation Media – Overhead Projectors**

For those authors who are unable to prepare their presentations in electronic format, an overhead projector will be available in each meeting room. If you choose to use an overhead projector, you or a colleague will have to change the transparencies. APEC will not have a projectionist available for this.

### **Presentation Media – 35 mm Slides**

APEC will **not** have 35 mm slide projects available at the conference.

### **Additional Audiovisual Requests**

Additional audiovisual requests will be considered on a case by case basis. Please contact APEC with any such requests as soon as possible.

### **Slide Preparation Instructions**

The APEC audience is accustomed to presentations that rely on visual aids. Consequently, they expect slides that are readable from all sections of the room. The following information will assist you in preparing your visuals and meeting the standards of quality expected by the conference committee and audience.

The following are suggestions and recommendations on how to make your slides easy to read when projected. Most of these recommendations also apply to overhead transparencies.

- Use a horizontal (landscape) format wherever possible. In order to fit the screen, vertical (portrait) slides necessitate a reduction in the projected image size resulting in a loss of detail.
- Center all material on the slide.
- High contrast is important. Use black letter on medium yellow or white letters on medium blue or red.

## **APEC 2003 – Presentation Instructions For Authors**

- Keep slides as simple as possible. Try to limit each slide to one main idea. *Do not use long complicated slides.*
- Use several simple slides rather than one complicated slide especially if you will be discussing it at length.
- Use duplicate slides if you need to refer to the same slide at different times in your presentation.
- For slides with text only, use no more than one level of indent.
- Limit the number of lines. For slides with only major items, use no more than six lines. For slides with minor items, use no more than a total of eight lines.
- Limit the number of words. Use no more than 30 words total in major items. Use no more than 36 words total in minor lines.
- For slides with illustrations, make all lines, numbers, and captions of sufficient thickness so that when they are projected, the lines, numbers, and captions are visible
- If you use photographs, have the photographer shoot as tightly as possible.
- Sample slides illustrating these guidelines are shown in the Appendix. Please note that sample slides illustrate the most complex slides that should be used.

### **How To Check Your Presentation For Viewability**

There is a simple way to test whether the audience will be able to clearly see your slides. Using your slide development program, display a slide in “full screen” mode, so that there are no toolbars or menus visible. Stand back from your monitor a distance equal to ten times the size of your screen. If you have a 19 inch (~ 48 cm) monitor, that would be 190 inches (~4.8 meters), about 16 feet. If you can clearly read all of the text and graphics on the screen, then your slide is well designed. If the text or graphics are unreadable, then you need to increase the size of the text and graphics. This may require you to create an additional slide.

Do this check for each slide in your presentation be sure that your entire presentation will be readable by the audience.

### **At The Conference**

---

#### **Author Registration**

All Presenting Authors are required, at a minimum, to register for and pay the normal registration fee for the Technical Session portion of the APEC Program. We request that you register for the conference as soon as possible.

#### **Author’s Briefing And Breakfast**

All Presenting Authors, whether they are presenting in the morning or the afternoon, are required to attend the Author’s Briefing on the morning of the day their paper is scheduled for presentation. A complimentary continental breakfast will be served. (Speakers in the Plenary Session are required to attend the Speaker’s Briefing at a luncheon preceding the session.)

At this meeting you will meet with your Session Chair. The Session Chair will give you instructions on how the session will be conducted. The Session Chair will also collect from you a short biography to be used to introduce you to the audience.

## **APEC 2003 – Presentation Instructions For Authors**

### **Session Preparations**

From the Author's Briefing your Session Chair will take you to the meeting room to:

- Meet with projectionist/computer operator.
- If you are using an electronic presentation, this is the time to preview your presentation to assure that it displays properly.
- If you are using transparencies, you will be responsible for operating the overhead projector, including turning it on and off and adjusting the focus. Use this time to check the order of your transparencies and familiarize yourself with the operation of the projector. Make sure you can focus the projector using your transparencies.
- Familiarize your self with the operation of the audiovisual equipment including the microphones, slide projector control, pointer and overhead projector, and
- Understand how the session timer works.

Once the day's sessions begin, it will be nearly impossible to work with the projectionist or check the projection of your slides or transparencies. This makes it very important that you ensure everything is ready before the morning's sessions begin.

### **Time Allowed To Make Your Presentation**

The large number of papers being presented at APEC requires strict adherence to the time limits for presenting papers. This assures that everyone has a fair chance to present their work and answer questions. It is the job of the Session Chair to keep time and maintain schedule.

Each morning or afternoon session lasts three and one half hours including thirty minutes for a break. Four papers are presented before the break and three papers after.

Each paper is allowed:

- 1 Minute for speaker introduction
- 20 Minutes for presentation
- 5 Minutes for questions and answers.

Please plan your presentation accordingly.

### **Rehearsal Room**

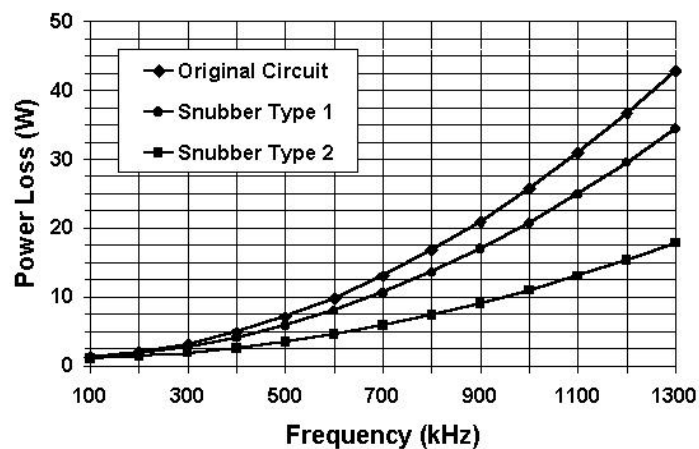
APEC will **not** have a space for you to preview or rehearse your presentation. This makes it most important that you attend the Author's Briefing and meet with the projectionist well before the start of your session.

APPENDIX: Sample Slides

## Slide Layout Recommendations

- Only One Main Idea Per Slide
- Limit The Number Of Lines
  - If No Sub Items, No More Than Six Lines
  - If Mixed Major/Minor, No More Than Eight Lines
- Limit The Number Of Words On All Text Slides
  - Maximum Of 30 Words Total In Major Lines
  - Maximum Of 36 Words Total In Minor Lines

## Keep Charts Simple!



## Submitting Your Paper For IEEE Transactions Review

---

You are invited to submit your paper as a candidate for publication in either the *IEEE Transactions on Power Electronics* or the *IEEE Transactions on Industry Applications*. The IEEE Industry Applications Society requires that all papers printed in their *Transactions* must first be presented in an IAS-sponsored conference and presentation of your paper at APEC meets this requirement.

If you are interested in having your paper reviewed for *Transactions* publication, please submit five (5) copies of your paper to only one of the two journals for consideration. Please notify the editor that your paper is being presented at APEC 2003. Paper review editors for the journals cross-check lists of received APEC manuscripts to avoid duplicating reviews, so please do not submit your manuscript to more than one if you wish to avoid delays.

Please be sure to check the latest requirements for prospective authors of transactions papers at the IEEE Industry Applications Society website:

[www.ewh.ieee.org/soc/ias/pub-dept/options.html](http://www.ewh.ieee.org/soc/ias/pub-dept/options.html)

or at the IEEE Power Electronics Society website:

[www.pels.org/Comm/Publications/Transactions/Transactions.html](http://www.pels.org/Comm/Publications/Transactions/Transactions.html)

Addresses for the *Transactions* paper review editors are:

*IEEE Transactions on Industry Applications*

Baldwin Bridger, Jr., Editor  
IEEE Transactions on Industry Applications  
15526 Torrey Pines Road  
Houston, TX 77062-3420

*IEEE Transactions on Power Electronics*

J. Daan van Wyk, Editor  
IEEE Transactions on Power Electronics  
Virginia Polytechnic Institute and State University  
Center for Power Electronics  
657 Whittemore Hall  
Blacksburg, VA 24062

### Special Note For IEEE Transactions on Power Electronics

If you are submitting to *IEEE Transactions on Power Electronics* please note that Two-Column Format Papers **CANNOT** be accepted and will be returned to the author.