Some Words from SPE to Help You WRITE NOW

A Guide for Authors and Presenters

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Revised September 2015
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WELCOME

We are pleased that you wish to prepare a paper for presentation at the Society of Plastics Engineers’ ANTEC® (Annual Technical Conference). We aspire to a very high-quality conference and we need your help as an active participant. To assist you in this endeavor, we have prepared this brochure, which contains basic information on what SPE needs from its authors and some helpful information for preparing your manuscript and presentation. This brochure is designed to help you write your paper and give a quality presentation. There are some required forms, timing and formatting considerations necessary for uniformity. We encourage you to read it carefully and to refer to it throughout your paper preparation process.

This *Write Now* guide applies to papers for SPE’s ANTEC®, and it provides specific guidelines for papers and presentations (see the Table of Contents). It is organized generally into five sections:

- The Process and rough timing of events
- What Is Required
- Helpful Writing Hints
- Presentation Thoughts
- Forms - necessary to help us track the large number of paper submissions

This *Write Now* guide also applies to papers to be presented at any of the SPE International ANTEC® or Topical Conferences (TopCons). The only part that does not apply for TopCon papers is the organization, the review process, and the timing of events.

As you might expect, the Society of Plastics Engineers assumes no responsibility for statements made by authors in articles appearing in publications of the Society or in oral presentations at Society conferences.

A paper submitted to SPE must be accompanied by a digitally signed release form (see the Author’s Release Form section at the end of this document) clearly stating that the paper is released to SPE with the approval of the employer and, where necessary, military clearance. The Author’s Release is included as part of the electronic submission process.
IMPORTANT LINKS TO HELP YOU THROUGH THE PROCESS

The ANTEC website contains many documents that are available to aid you in the paper creation and submission process. Following are some of these links:

ANTEC website:  http://www.antec.ws

For electronic submission of materials (ANTEC 2016)
https://www.etouches.com/ehome/127608

THE SPE ORGANIZATION... WHO “WE” ARE

The Society of Plastics Engineers (SPE) is comprised of people from all parts of the plastics industry who come together to discuss and learn about important issues and technologies. How? By spreading knowledge, strengthening skills, and promoting plastics. SPE is a 15,000-member international network of leading engineers, scientists, and other plastics professionals, including technicians, salespeople, marketers, retailers, and representatives from companies, academia, government, and other related industries.

The objective of the Society is "...to promote the scientific and engineering knowledge relating to plastics." For more information, go to:  http://www.4spe.org/Leadership/Content.aspx?ItemNumber=5173&navItemNumber=637

The ANTEC Technical Program Chairperson is a volunteer member responsible for the overall ANTEC program. This person chairs the Technical Program Committee (TPC). The ANTEC program comes from member submissions belonging to a SPE Division or Special Interest Group, or the TPC team decide to put together a Special Session, Panel Discussion, or Focus Group dealing with an important issue or theme. The TPCs are responsible for the Division, Special Interest Group, and any Special Session topics. They are an important communication link for authors throughout the technical program process and can most easily answer any questions you might have. The SPE staff can best answer questions about administrative details.

There is an SPE staff professional assigned the responsibility for managing all abstracts, papers, reviews, and reports pertaining to the ANTEC technical program and also as a critical point of contact for the authors. Contact information can be found on the SPE website  www.4spe.org  and the submission site.
THE FOUR AVENUES TO PRESENTING AT ANTEC

The objective of the Society of Plastics Engineers is to promote scientific and engineering knowledge relating to plastics to members from industry, government, and academia. The Write Now document reflects awareness that in order to provide full value to SPE members and to have a successful ANTEC, it is critical to have participation by members from all three areas of the plastics community.

SPE recognizes the new challenges to authors brought about by: globalization and multi-national cultural differences in business practices; intellectual property protection and disclosure; conformance to employer corporate rules related to conferences and the use of logos; the internet and how information is transferred; the need for tutorials in plastics engineering fundamentals; the need to have speakers and program content that justify travel and lodging costs. Consequently, we have addressed the issues related to submitting an ANTEC paper and its subsequent presentation – even those that may necessarily have commercial content – while maintaining a very high-quality ANTEC.

The purpose of the four “Avenues” is to provide a method for authors to communicate significant new and existing information in a professional manner that reflects an effort to teach new developments, the principles of the science and engineering of plastics, and important commercial developments relevant to plastics technology.

There are four different avenues to presenting at ANTEC:

1. Submit a peer-reviewed paper for presentation:
   a. Technical paper resulting in a podium presentation.
   b. Commercial paper resulting in a podium presentation.
   c. Poster presentations – Graduate or Undergraduate Students Only.
2. Present an invited or keynote paper or talk at podium.
3. Present in a tutorial.
4. Be part of a roundtable discussion.

A podium presentation is an oral presentation offered at a podium to a seated audience. The presentation is generally 30 minutes in duration and usually accompanied by a PowerPoint slide show. It is customary for the speaker to allow up to 5 minutes for questions and answers following the presentation.

A poster presentation is not done from a podium. Rather, presenting authors convert their manuscripts to a poster sized PowerPoint slide and – depending upon the event – provide the poster file to the organizing committee for digital presentation on a flat screen monitor, or are provided with a 4’x8’ surface (one
side) area to present their research. Presenters speak informally to individual attendees who stop by to discuss their findings while standing adjacent to or in front of the poster board or screen. At ANTEC, this option is available to Graduate or Undergraduate Students only.
The Four Avenues to Presenting at ANTEC

Avenue 1 – Present a Submitted Paper: The most popular way to present at ANTEC is to submit either (a) a technical paper, (b) a commercial paper, or (c) a poster presentation, all of which will be peer-reviewed.

Your peer reviewers are volunteers selected by the TPC to reflect the stated goals of ANTEC. The peer-review process is designed to determine if your submitted paper is suitable for ANTEC so that you may make either a podium or poster presentation. The suitability decision is made by the TPCs in consultation with the peer reviewers. It is not necessary to contact a TPC as to suitability in advance of submitting your paper. However, it should be noted that acceptance rates can vary substantially from Division to Division, and you are invited to contact the TPC assigned your submitted paper. Although you may indicate in your submission in which of the four “Avenues” you wish to present, the TPC reserves the right to make the final determination. For example, because of time and space limitations, a podium paper may be assigned to a poster presentation session.

What differentiates a technical paper from a commercial paper?

- The author indicates during the submission process whether the submitted paper should be considered a technical paper or commercial paper based on the criteria in this document.

- If the author elects to submit a technical paper, the dictates apply as is contained in the Write Now section on “WHAT IS REQUIRED…” The paper must be of a technical nature. The first mention of a product may use its trade name; however, generic terms should not be used after the first reference. Examples of replacing a trade name with a generic term are provided in the ANTEC Paper Template. The paper template is available on the submission site as well as the SPE website; it is also included in this guide. The paper should contain data that is new and novel. A technical paper should not be used as a means to compare one’s product to competitive products. Company logos should never appear in the paper, and they are allowed only on the title slide of the presentation.

Commercial papers must also be of a technical nature. A commercial paper is not an advertisement, and thus the paper must not be a sales pitch. Although there is some leeway for comparing competitive materials or processes, a paper whose primary content is a property comparison between competing materials will be rejected. It is entirely acceptable for the background of each slide to contain a reference to a company or organization such as a logo and/or contain trademarked or copyrighted material. Guidelines for commercial papers are as follows:
• If the author presents in his paper the means (or procedures) by which his results can be duplicated (or reproduced), then the paper is “technical.” If the necessary means (or procedures) are not provided, then it is “commercial.”

• Commercial and technical papers will be designated as such, either explicitly or via abbreviation. TPCs have leeway to decide if commercial papers should be part of regular technical sessions or part of separate commercial sessions.

• The author may elect to have his submitted paper considered commercial because of one or more employer restrictions such as:
  o Registered trademarks and not a generic description must be used to describe the materials used in the paper.
  o If the technical content of the paper has been presented previously and much of the application has been reduced to common commercial practice, but new application developments related to the subject matter warrant discussion.

• The TPC disagrees with the author. For example, the author indicates in the submission that the paper is technical and the TPC determines that the paper as submitted is commercial for many reasons that may be defined herein or based on the quantitative and qualitative judgment of the TPC. This determination does not constitute a rejection.

• The past reputation of the author is considered.

• Other reasons as indicated by anyone reviewing the draft.

Note that you must be an SPE member to present a submitted paper (you can always join so as to submit the paper).

**Avenues 2 to 4:** The remaining 3 avenues, invited speakers, tutorials, and panel discussions, are all initiated by TPCs. That is not to say that someone else can’t initiate any of these three avenues; it is just that you need to contact the TPC well in advance of the abstract submission date because the TPC makes the decision. Suggestions for invited speakers, tutorials, or panel discussions for future ANTECs are often best introduced during the programming meeting of the Division/SIG, which is held during ANTEC. The exact time and place for a given programming meeting is determined by the Division/SIG Chair.

**An invited speaker** is not required to submit a peer-reviewed paper. An invited speaker usually participates in a session consisting mainly of other invited speakers. An invited speaker becomes a **keynote speaker** for an ANTEC program session when their presentation is made as part of a session containing speakers for mostly submitted papers. Invited speakers should not be confused with speakers/papers solicited by a TPC for Avenue 1, since these speakers are required to submit papers subject to peer review. Invited speakers are strongly encouraged to submit an abstract; which enables the invited speaker to become part of the scheduling process as well as to give more information to potential audience members about the presentation. If the invited speaker wishes a written paper to become part of the permanent archive, then the speaker should submit
A paper under the Write Now format guidelines appearing later in this document. A submitted paper from an invited speaker must obey all copyright laws. A paper from an invited speaker is subject to the same peer-review process as an Avenue 1 paper; although the guidelines for possible rejection are relaxed so as to encourage the invited speaker to participate as an author.

**Tutorial speakers** are also encouraged to submit an abstract, again for scheduling reasons and to give potential audience members more information about the tutorial. Submitted tutorial abstracts will become part of SPE’s permanent archive.

Participants in a **roundtable** discussion are not expected to submit an abstract or a paper. However, if the participants wish to include their topic in the permanent archive, they may submit a form of the discussion through the paper submission site.

The requirements for Avenues 2 to 4 are significantly relaxed. A presentation under Avenues 2 to 4 does not need to be new or novel, for example. However, the presentation must be technical, and not blatantly commercial in nature. Visuals should be of high quality, and a biography should be furnished to the appropriate TPC or session moderator.

**THE PROCESS…**

1. **ABSTRACT/PAPER SUBMISSION AND REVIEW PROCESS**

   The abstract/paper submission process is managed online.

   - Authors submit their abstracts and papers to an online database via a website. The database can accept virtually any type of electronically formatted document (PC and Mac formats), but the files should be converted to PDF.
   - During the submission process, the Author chooses the appropriate Topic Area based upon its technical content. The TPC will review the assignment and reassign where necessary.
   - The Author’s Release must be completed electronically upon paper submission as instructed online. A copy of SPE’s Author Release document may be downloaded from the submission site or the ANTEC site.
   - The SPE Technical Program Chairs and respective review committees conduct paper reviews via the paper-submission website. The reviewers then forward any necessary revision requests to the authors through the system.
   - The submission website is password-protected, ensuring the integrity of the entire process.
2. **PAPER REVIEW** - After the paper is received by the TPC, it must undergo a minimum of two reviews that include the following criteria: originality, quality, clarity, merit, graphics quality, format, and grammar. Each reviewer makes a recommendation that can fall into any of the following categories: accept, request revisions, or reject.

The TPC considers the reviews and makes a decision on the paper including whether to request reassignment of the paper. If needed, additional reviews may be requested before a decision is made.

The decision of the TPC is conveyed to the author through the system from the TPC. Comments by the reviewers may be edited and passed on to the authors.

3. **PAPER ACCEPTANCE/REJECTION** - If the paper is accepted, the paper is accepted as is. No revisions to the submitted paper are possible. This requires that all authors ensure that submitted papers are error-free.

If the paper is rejected, there is no recourse. The author may contact the TPC to seek further clarification.

If revisions are requested, the author must make the requested revisions promptly. The author may contact the TPC to seek further clarification. Once a revised paper is submitted, the TPC will determine whether to accept or reject the paper or seek further revisions; this decision may be made in association with the original reviewers.

If reassignment is recommended, the Chair and TPC work closely to reach a suitable agreement. A second review of the paper will probably be necessary by the new Division or Special Interest Group. Following the review and provided the paper is accepted, the author receives all information mentioned earlier.

It is critical that the paper be submitted on time. The timing is very tight so that the paper can be written as close to the time of the conference as practical and yet so that the publisher has adequate time to prepare the conference proceedings and to make sure that they are available for conference.

4. **PREPARE YOUR PRESENTATION** - It is never too early to start! The time seems to fly by, and you need to prepare your slides and to practice your talk. Some helpful tips are included in this guide.

5. **ANTEC** – Enjoy the Conference. When it is time for your presentation, remember this most important fact - attendees are there to hear what you have to say and believe that listening to you is worth their time. Relax,
take a deep breath, and do your best. You have been preparing for this for some time.

All presentations are made electronically, and authors must bring their presentations on a computer or USB drive. Presenters are urged to bring their own computers for the presentation. The projector, microphone, and screen will be provided by SPE.

6. **LOOKING AHEAD** - Is there an ANTEC in your future? As you can see, the process for an ANTEC author is relatively easy. If you have not submitted a paper or made a presentation at ANTEC, please consider the possibility...it will be worth your efforts!
WHAT IS REQUIRED

SPE has certain quality requirements that it expects from its authors. These can be summarized as follows:

1. The paper must not have been previously presented or published. An exceptionally good paper with broad audience appeal that has been presented will be considered only if it has been significantly modified or updated.

2. The paper must be of a technical nature. For technical papers, trade names may be used at the first mention of a product; generic terms should be used after the first reference. The ANTEC Paper Template provides guidelines on how to use generic names. Complete guidelines for commercial papers were provided earlier in this brochure.

3. Visuals must be of very high quality, and the manuscript must adhere to format and length restrictions. These are further detailed in the next section.

4. Each author must provide a biographical sketch, not to exceed 100 words, outlining the essential points in his/her career to date. This is designed for use by the session moderator in introducing the speaker to the audience. Think about what you want the moderator to say - many “canned” biographies sound a little stiff and formal as an introduction. Do not incorporate this biography into the text of the paper. Please send it under separate cover; you will be instructed when and where to send the biography.

5. Each author must complete the digital Author's Release. This form is located at the end of this brochure or can be found online at: http://www.antec.ws or on the submission site.

HOW IT SHOULD LOOK... FORMATTING

PAPERS NOT SUBMITTED IN ACCORDANCE WITH THESE INSTRUCTIONS WILL BE RETURNED TO THE SUBMITTING AUTHOR

Your manuscript will appear in the conference proceedings exactly as you submit it to SPE by way of the online submission website. To aid in preparing the manuscript, special requirements that facilitate reproduction are outlined below.

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1. **CORRECTIONS** - Authors should note that corrections of any kind will not be made by SPE. Any paper that has been incorrectly prepared will be returned to the authors.

2. **ENGLISH** - All SPE papers are written and presented in American English.

3. **ABSTRACT** - An abstract must be included in your paper.

4. **LENGTH** - A well written ANTEC paper is short and concise with the ideal paper having a length of five 8-1/2" x 11" pages (including tables and figures). The length, however, can be extended to a maximum of eight pages total. A typical paper comprises three single-spaced, double-columned pages typed to format plus eight tables and figures that can be reduced to occupy no more than two pages. On the last page of text, adjust it so that both left and right columns are the same length.

5. **MANUSCRIPT REQUIREMENTS** - All text is to be contained within the approximate 7"x 9" margins, allowing 3/4" for the right and left margins, 1" for the top margin, 3/4" for the bottom margin, and 3/8" for the center margin. All text is to be both left and right justified on both columns. Texts should be 10pt. type using any of the following fonts: Times Roman, Roman, or whatever is close to the type style used in the ANTEC Paper Template, downloadable from [http://www.antec.ws](http://www.antec.ws) or the submission site.

   The double column section of the paper can be easily set by configuring the following MS Word controls:
**TITLES** of manuscript, names of authors and company affiliations and addresses must be indicated on the first page of the manuscript. Titles should be in 13pt. bold upper-case letters. Names of authors and company affiliations and addresses must be in 12pt. italic upper-case and lower-case letters.

6. **HEADS** must be bold 12pt. upper-case and lower-case letters, centered over columns. Use double spacing between these heads and the text that follows.

7. **SUBHEADS** must be flush left 11pt. bold upper-case and lower-case letters.

9. **EQUATIONS** should be numbered consecutively throughout the paper. Each equation is to be unique. Enclose the numbers in parentheses and place after each equation.

10. **SI UNITS** - Use of SI (International System) Units is mandatory (with US customary units in parentheses if the author wishes). SI Units and their equivalents are given in Table 1 on page 20.

11. **ACKNOWLEDGMENTS** should appear at the end of the text preceding the references. Acknowledgments may be made to individuals or institutions not mentioned elsewhere in the paper that have made an important contribution.


13. **APPENDIX** - Other related but nonessential materials such as description of an apparatus may be included in an appendix.

14. **TABLES** must fit into the boundaries of the manuscript - 7”x 9”. Tables set to a narrower measure will be acceptable. Tables should be numbered consecutively. Each must have a caption consisting of the table number and a brief title. The caption must be placed at the top of the table. Small size tables can be included in the text, between paragraphs, and within the columns provided that they do not split across a page or column. Tables can also be placed at the end of the paper. Tables that are positioned at the end of the paper must appear after the text, references, and appendices.
15. **ILLUSTRATIONS** - The figures and illustrations must be legible, and they must fit into the boundaries of the manuscript - 7"x9". Figures should be numbered consecutively. Each must have a caption consisting of the figure number and a brief title. The caption must be placed at the bottom of the figure. Small size figures can be included in the text, between paragraphs, and within the columns. Figures can also be placed at the end of the paper. Figures that are positioned at the end of the paper must appear after the tables.

17. **CORRECTIONS** – This bears repeating - **Authors bear the sole responsibility for making any and all corrections to their paper submissions.** Corrections should be made within the electronic file of your papers. Once the corrections have been made, you must re-submit (upload) the paper on the ANTEC Online Submission Website. Your paper will be published exactly as you submit it!

18. **MANUSCRIPT SIZE** – The maximum electronic size for the submitted paper is 5 MB. The electronic size of the figures should be kept to a minimum by using appropriate electronic file translations or formats.

Previous ANTEC technical papers can be viewed and used as a guide and can be found in the Online Technical Library on the SPE website.

**Abstract Submission** is performed using the electronic submission website. The title and abstract of the paper is limited to 1000 characters (combined total)[ the abstract is entered in a text field and may be typed or copy/paste. During the submission process, the author must include authors and coauthor names, indicate the Division or SIG for the paper, presentation preference (Podium or Poster), and the paper type (Technical or Commercial). An example of a paper title and abstract is as follows:

**Title:** Accuracy of Rate Calculations for Single-Screw Extruders as a Function of Barrel Diameter

**Abstract:** Previous research has shown that simplistic drag and pressure flow calculations using a pseudo-Newtonian method work well for very small diameter extruders. The method, however, is unacceptable for very large diameter machines. Currently, the calculation error for the simplistic method is not fully known or understood. The research here will show when the simplistic model can be used instead of a more complicated three dimensional analysis. The study will determine the effect of screw diameter, screw dimensions, and resin rheology on the model's accuracy.
The **ANTEC Paper Template** for writing your ANTEC paper is available on the submission site or at [www.antec.ws](http://www.antec.ws). By using this template, you can eliminate many of the common formatting errors. Moreover, this template provides many hints to writing a high-quality paper.
### FORMAT GUIDE

#### TWO-COLUMN (NEWSPAPER) FORMAT

<table>
<thead>
<tr>
<th>Margins-</th>
<th>3/4”</th>
<th>1”</th>
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<th>See template and example two pages</th>
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</tr>
</tbody>
</table>

#### Font and Body Size

*10pt. “Times” (your printer could be Times Roman, Roman)*

#### Title

*13pt./Bold/Upper-case - maximum of 3 lines and 6” width per line*

#### By-Line

*12pt. Italic/Upper-case and lower-case*

#### Heads

*Centered over column/12 pt. Bold/Upper-case and lower-case*

#### SubHeads

*Flush left over column/11 pt. Bold/Upper-case and lower-case*

#### Paragraphs

*Paragraphs indented 1/4”. One-half-line spacing between paragraphs*

#### References

*10pt size/Number them beginning with 1. In the text, place reference numbers in square brackets.*

**NOTE:** In addition to the above & template on the next page, MS Word margin guides for “Page Setup” should be spelled out, indicating top, bottom, left, right margins, etc., so that the author can set up the submitted paper in the correct format without resorting to using a ruler.
MARGIN GUIDE SHEET

YOUR PAPER MUST BE CONTAINED WITHIN SHADED AREAS
APPROVALS AND CLEARANCES…

It is the author’s responsibility to secure such approvals and clearances, including company, governmental, etc., as may be required and notify SPE of any potential conflicts. Don’t underestimate the time required to obtain approval. In most organizations, this is at least one month. If this is a problem, please discuss it with SPE Staff person or the TPC at an early date.

CONFERENCE PROCEEDINGS - All accepted papers will be included in the Conference Proceedings and provided to all conference attendees. The Conference Proceedings will also be sold during and following the conference to anyone who did not attend the conference. To ensure publication, papers must meet the paper deadline.

PAPERS WILL NOT BE ACCEPTED AFTER THE DEADLINE.

HELPFUL WRITING HINTS…

Helpful writing hints are provided below and are also provided in the ANTEC Paper Template:

1. One paper, one basic idea. When complete it should be clear why you did this work, what you actually did, and what was learned. The case study method works well: state the problem, the steps taken to address the issue, the results of the effort, and finally, the conclusions.

2. Most authorities agree that four major points are the most that can be covered in one presentation.

3. Choose your words carefully. Learn to recognize slang and jargon. Don’t try to impress the readers with your vocabulary but at the same time don’t talk down to them. Don’t be afraid to use the dictionary and to question the meaning and proper use of the most familiar term.

4. Vary the length of sentences and paragraphs to avoid monotony. If 40 words are required to express an idea clearly, use 40 words. If 10 words will do, don’t use more. A word of warning, though: if you need 40 words, then you probably didn’t express your idea clearly.

5. Provide a balanced perspective. Of course you want people to follow your point of view, but it is healthy to acknowledge the limitations of your work.

6. Give your manuscript to someone who is not involved with your project but who represents your intended audience. Ask your reader for specific
suggestions on how to improve the readability and the presentation of the technical material.

7. Proper organization is the key to a readable technical or commercial paper. It should lead the reader through your supporting data and the theories to a logical conclusion. SPE publications generally adhere to the following broad outlines:

- Title
- Author and company affiliations
- Text
  1. Abstract
  2. Introduction
  3. Statement of theory and definitions
  4. Description of equipment and processes
  5. Application of equipment and processes
  6. Presentation of data and results
  7. Interpretation of data
  8. Conclusions
- Nomenclature
- Acknowledgments
- References
- Appendix
- Tables and figures with captions

8. There is a distinction between clarity and details. It is important to describe things clearly but include details to help explain rather than to overwhelm the audience.

9. Be consistent with your use of grammatical person and tense. Avoid the passive tense.

10. Edit, edit, edit. Be brutal in your critique of the paper so that it is pared down to clearly stated ideas that follow naturally and tell a story.

The information contained in your paper must be original and new to the industry if it is an Avenue 1 technical paper resulting in a podium or interactive presentation. Data published elsewhere is unacceptable unless used to draw conclusions or augment a point.

**PLEASE REMEMBER.....**

**ACCURACY** - It is of the greatest importance that formulas, equations, mathematics, and all technical and scientific data be checked with great care. A slight error in a mathematical sign or symbol, in a table of data, or a graph may result in serious error on the part of anyone who may later use the information. Once the paper is published, the error will be perpetuated.
PREFERRED SPELLING - Webster’s Third New International Dictionary should be consulted for the spelling and usage of words. The author should check the spelling of unusual technical terms and names.
PRESENTATION CONSIDERATIONS…

**Trademarks and Product Promotion** - Trademarks should be acknowledged once, but then should be replaced with a generic descriptor. An ANTEC presentation is intended to be a technical talk, not a sales pitch. You have the opportunity to make your audience aware of your product or process. You may describe the advantages of your material or technology, but discuss, from a technical perspective, *why* it offers better performance. Simply showing improved performance without a sufficient discussion of the underlying reasons for improvement is not acceptable for an ANTEC presentation. If your presentation is deemed to be too commercial by the Technical Program Chairperson, or session moderator(s), you may be prohibited from making your presentation (even if your paper was accepted for inclusion in the proceedings).

Company, university, government, or agency logos are acceptable on the title slide of a podium presentation but are not to be placed on the succeeding slides for technical presentations. For commercial presentations, discreetly sized logos can be used on all slides. If the logo is used on every slide, then discretion requires that the logo not dominate the information.

**Convey the Message** – In presenting to a technical audience, the key is to convey the important points of your work as clearly and succinctly as possible. Decide on the major point(s) you are trying to make and then provide convincing evidence to support your point(s). Do so with a minimum of written words and rely instead on effective visuals (schematics, photographs, plots, bulleted lists).

**Select Colors That Have High Contrast** – When you are designing your slides pick colors that have high contrast so that the text and graphics can be easily seen when shown.

**Pick Fonts That Are Large Enough** – A general rule is to use a font size in the range of 18 to 36 point. If the font is too small, no one will be able to read the words and the message will be lost.

**Use Bullet Points** – Instead of full sentences, use bullet points to deliver the key ideas on your slides. When using bullet points, make sure not to put too much information on a slide. The 6 by 6 guideline is a good one to keep in mind – each bullet should have no more than 6 words and each slide should have no more than 6 bullet points.

**Build Bullet Text Points** – When using bullet points, build them one by one on the slide using the build animation effect. This way, you can speak to each point individually and the audience will know which idea you are expanding upon.

**Avoid Movement of Slide Elements** – While moving text or graphics around the slide may look like fun, it is very distracting to the audience. Avoid the “custom animation” effects where movement is outside the boundaries of the text or
graphic. The preferred animation effect is the “appear” effect where the text just appears in the correct spot on the slide.

**Use Charts Effectively** – Charts – graphs and tables – can be a great way to present information if they are used properly. Use tables sparingly when a plot can convey the same information more effectively.

**Practice, Practice, Practice** – The best way to be comfortable when delivering your presentation is to actually feel prepared! There is no substitute for practice. All the good speakers you have ever seen have practiced the art of presenting many times. Practice with your computer and projection equipment if possible to get a feel for it. Practice everything you plan to say, but do not memorize it because a memorized speech sounds “canned” and not like a conversation, the way a good presentation does.

**POSTER PRESENTATIONS (Students Only)**

A poster presentation is an ideal way to communicate ideas and results and to foster one-on-one contacts with the audience. Like papers for podium presentations, full manuscripts are also required for poster presentations by Graduate Students (this is not so for Undergraduate Student Posters, which require only an abstract). The guidelines for these manuscripts are the same as for those intended for podium presentation.

The key elements for preparation of visuals for a poster presentation are analogous to those cited in the previous section for a podium presentation (Convey the Message, Select Colors That Have High Contrast, etc.). Simply printing a copy of your paper to serve as the poster will NOT be permitted. Posters that will be displayed on poster boards need to be printed on one large sheet of paper for the most effective use of space and visual appeal. Digital posters should be only one slide.

**UNDERGRADUATE STUDENT PAPER SESSIONS**

These sessions are restricted to undergraduate research. Only authors in an undergraduate study program or graduate level students who completed their research as an undergraduate student are permitted to present in these sessions. Graduate level students, faculty, and industrial researchers are not permitted as coauthors. Both podium and poster sessions are available.
TABLE I. SI UNITS AND EQUIVALENTS

<table>
<thead>
<tr>
<th>QUALITY</th>
<th>SI UNITS</th>
<th>SYMBOL</th>
<th>ENGLISH EQUIVALENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>Meter</td>
<td>M</td>
<td>39.370079 inch</td>
</tr>
<tr>
<td>Mass</td>
<td>Kilograms</td>
<td>kg</td>
<td>2.2046213 lb</td>
</tr>
<tr>
<td>Time</td>
<td>Second</td>
<td>S</td>
<td>second</td>
</tr>
<tr>
<td>elect. Current</td>
<td>Ampere</td>
<td>A</td>
<td>ampere</td>
</tr>
<tr>
<td>Temperature</td>
<td>Kelvin</td>
<td>K</td>
<td>-459.47 °F or -273.15 °C.</td>
</tr>
<tr>
<td>temperature (alt)</td>
<td>Celsius</td>
<td>C</td>
<td>°F=(°C x 1.8) +32</td>
</tr>
<tr>
<td>light intensity</td>
<td>Candela</td>
<td>Cd</td>
<td>lumen x sr</td>
</tr>
<tr>
<td>Molecular</td>
<td>Mole</td>
<td>mol</td>
<td>mol</td>
</tr>
<tr>
<td>plane angle</td>
<td>Radian</td>
<td>rad(...)</td>
<td>180 degrees/</td>
</tr>
<tr>
<td>solid angle</td>
<td>Steradian</td>
<td>Sr</td>
<td>0.159155 hemisphere</td>
</tr>
<tr>
<td>Energy</td>
<td>Joule</td>
<td>J</td>
<td>0.737562 ft.-lb.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.00094845 BTU</td>
</tr>
<tr>
<td>Force</td>
<td>Newton</td>
<td>N</td>
<td>0.224809 lb force</td>
</tr>
<tr>
<td>Pressure</td>
<td>Pascal</td>
<td>Pa</td>
<td>1.45038 x 10-(4) PSI</td>
</tr>
<tr>
<td>Power</td>
<td>Watt</td>
<td>W</td>
<td>watt</td>
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<tr>
<td>elect. Charge</td>
<td>Coulomb</td>
<td>C</td>
<td>coulomb</td>
</tr>
<tr>
<td>Voltage</td>
<td>Volt</td>
<td>V</td>
<td>volt</td>
</tr>
<tr>
<td>elect. resistance</td>
<td>Ohm</td>
<td>Ω</td>
<td>ohm</td>
</tr>
<tr>
<td>elect. conductance</td>
<td>Siemens</td>
<td>S</td>
<td>1/ohm.mho</td>
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<tr>
<td>elect. capacitance</td>
<td>Farad</td>
<td>F</td>
<td>farad</td>
</tr>
<tr>
<td>elect. inductance</td>
<td>Henry</td>
<td>H</td>
<td>henry</td>
</tr>
<tr>
<td>Frequency</td>
<td>Hertz</td>
<td>Hz</td>
<td>1 cycle</td>
</tr>
<tr>
<td>magnetic flux</td>
<td>Weber</td>
<td>Wb</td>
<td>10-(8) Maxwells</td>
</tr>
<tr>
<td>mag. flux density</td>
<td>Tesla</td>
<td>T</td>
<td>10-(8) Maxwells/m(2)</td>
</tr>
<tr>
<td>luminous flux</td>
<td>Lumen</td>
<td>Lm</td>
<td>0.0795774 candlepower</td>
</tr>
<tr>
<td>Illumination</td>
<td>Lux</td>
<td>Lx</td>
<td>0.0929030 lumens/ft(2)</td>
</tr>
</tbody>
</table>

Units not included, i.e., liters, are derived from basic units
(1 liter equals 1000 cu. cm. water at 4 degrees C)

A detailed discussion on the use of SI units can be obtained in the following reference:

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