

Style Guide

for Authors of Annual Meeting Papers



AIR & WASTE MANAGEMENT
ASSOCIATION

Parts of the Paper

Title Page

Write a brief, informative title. Type it in upper- and lowercase letters centered on the page. Below the title, type the first name, middle initial and surname of the author(s) centered on the page. Do not include any titles (i.e., Dr., PhD., P.E., etc.) except Jr. Below the name of each author type their affiliation(s) and complete mailing address(es) centered on the page.

Introduction

Begin your paper with an introduction. State the nature of the project or problem and why you are studying it. Provide a background statement about the problem or project and why it is significant. Highlight other relevant literature and why it relates to or differs from your work. Discuss the scope and limitations of your study.

Body

You may include experimental methods, design features, results, discussion and other sections that you feel are necessary.

Conclusions

Compare the results of your work to the original problem or project. Base your conclusions on the evidence you presented in the paper. Discuss how your work contributes to others. Be objective.

References

References are works that you used to base conclusions on in your paper. Keep them to a minimum. Cite references in the text by using consecutive, arabic superscript numbers. For example:

Previous results¹ show that is a valid method for measuring radon gas.

Compile a list of all the references at the end of the paper. Put them in consecutive numerical order and provide complete information for each reference. Examples of different kinds of references and how you should cite them are listed below.

Books

Arrange the information in the following manner: Author's first initials, author's last name, title of book (underlined), edition (if other than first edition; abbreviation: ed.), volume number if applicable (abbreviation: "Vol."), publisher, city of publisher, year of publication and number of pages (abbreviation: "p" - singular, "pp" - plural). Example:

1. R.E. Livingston, Physico-Chemical Experiments, 3rd ed., Macmillan Co., New York, 1957, pp 22-28.

Books with More Than Three Authors

List the first three authors and then "et al." Example:

1. R.D. Clay, D.P. Lowenhut, S.T McCabe et al., Handbook of Evaluative Science, Harcourt, Brace Jovanovich, Chicago, 1983, pp. 27-29.

Books with Editors

Abbreviation: Ed. or Eds. Example:

1. Introduction to Gas Sampling, C.E. Elwell, Ed., Atlantic Co., Boston, 1984, p 301.

Limit the length of your paper to 16 pages, including the title page, text, figures and tables. If your paper exceeds 16 pages, fill out the form below the abstract form at the end of this booklet. You will be charged a fee if your paper exceeds 16 pages. The fees are:

17-24 pages	\$ 56
25-32 pages	\$112

Books with Editors and Authors

1. C.D. Chelay, Evaluation of Analytical Methods for Trace Gas Sampling, V. Biero and G. Putnam, eds. Universal Publications, New York, 1988, pp 43-55.

Journal Article

Author's first initials, author's last name, title of article or paper in quotation marks (capitalize only the first word), title of journal (underlined; abbreviations for journal names are listed in the List of Periodicals Abstracted by Chemical Abstracts), volume, number (put parenthesis around the number and a colon after the closing parenthesis), starting page of the article or paper and the year (in parenthesis). Example:

1. H.F. Johnstone, R.E. Field and M.C. Tassler, "Gas Absorption and Aerosol Collection in a Venturi Atomizer," Ind. Eng. Chem. 46 (8): 1601 (1954).

Proceedings

Author's first initials, author's last name, title of paper (in quotation marks), publication number, publisher, city, year and page numbers. Example:

1. H.E. Daughtrey, Jr., D.K. Bubacz, D.D. Williams et al., "Comparison of methods for monitoring dry deposition pollutants," in Proceedings of the 1988 EPA/A&WMA International Symposium on Measurement of Toxic and Related Air Pollutants," VIP-10, Air & Waste Management Association, Pittsburgh, 1988, pp 170-175.

Government or Laboratory Publication

Author's first initials, author's last name, title of publication (underlined), publication number(s), publishing agency, city, year and page numbers. Example:

1. W.T. Winberry, Jr., N.T. Murphy and R.M. Riggan, Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, EPA-600/4-84-041, U.S. Environmental Protection Agency, Research Triangle Park, 1988, pp 10-13.

Patent

Author's first initials, author's last name, patent number and date of patent. Example:

1. J.T. Thurston (to American Cyanamid Co.), U.S. Patent 2,525,247 (Oct. 10, 1950).

Personal Communications

First initials and last name of person you communicated with, name of person's employer, city and state, "personal communication" and date. Example:

1. P.D. Zemany, General Electric Co., Schenectady, NY, personal communication, 1950.

Copyright Information

You are responsible for the accuracy of the information in your manuscript. You are also responsible for obtaining permission to use classified or copyrighted information from governments and others.

If your paper contains a disclaimer, type it on the first and last page of your manuscript.



Writing Style

Write clear concise sentences that present one thought or idea.

Avoid pompous writing and use short common words. A good rule of thumb is to write how you talk:

pompous

Utilization of a planar financial device enabled her to gain access to the securing device of the ingress of her domicile.

clear

She used her VISA card to jimmy the lock on her apartment door.

Avoid passive writing by using active verbs:

passive

The car was wrecked by Jim.

active

Jim wrecked the car.



Mechanical Style

The Air & Waste Management Association closely follows the American Chemical Society Style Guide. Refer to it when you have a question about mechanical style for your paper. You can obtain a copy of the handbook from the American Chemical Society, 1155 16th Street Northwest, Washington, DC 20036, 202/872-4600. For more information about mechanical style, see the reduced sample pages at the end of this guide.

Typography

Type Generation

Print your paper on a 300-dot per inch (dpi) laser printer, word processor or typewriter so the type is crisp and dark. Output from a dot-matrix printer is not acceptable.

Paper Size

8-1/2 x 11 inches.

Margins

1 inch on all sides.

Type Size

No type can be smaller than 8 point (1/16 inch).

Type Style

Any type style is acceptable as long as it is a serif style. Sans serif type is not acceptable. Examples of serif style are courier, elite and times.

Spacing

Single space lines. Skip a line between paragraphs.

Type Orientation

Flush left. Do not justify text left and right.

Paragraph Indenting

Indent the first line of each paragraph one tab stop.

Headings

First Order

Type in all uppercase letters flush left on a separate line.

Second Order

Type in upper- and lowercase letters flush left on a separate line.

Third Order

Type in upper- and lowercase letters flush left and underlined. Type a period after the title, three spaces and then the text.

Page Numbering

Number the pages of your paper consecutively beginning with the title page. Center each page numbers 3/4 of an inch from the bottom of the page.

Paper Numbering

Your paper will be assigned a number in your acceptance letter. Type this number in the upper right-hand corner of each page. Type the paper number on all figure and table pages in the upper right-hand corner, regardless of the orientation of the figure or table.

References

Number all references consecutively in the text with arabic superscript numbers. Consult the section on references under Parts of the Paper in this style guide for more information on how to treat references.

Bibliography

Treat bibliographic entries in the same way as references.

Mechanics Checklist

Did you:

- Begin your page numbering with the title page?
- Place page numbers at the bottom center of each page?
- Type the paper number in the upper right-hand corner of each page?
- Type the paper number in the upper right-hand corner of each table and figure page, regardless of the orientation of the table or figure?

Units of Measurement, Abbreviations & Acronyms

A list of the more often-used units of measurement, abbreviations and acronyms are listed alphabetically below. If you do not find the information you need here refer to the ACS Style Guide.

When you express concentrations in ambient atmospheres, use parts per million (ppm) to express the concentration of gaseous contaminants and micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to express the concentration of particulate contaminants.

When you express concentrations in stack gases or other source emissions, use suitable units expressed as volume of contaminant per volume of gas to express the concentration of gaseous contaminants, and mass of contaminant per volume of gas to express the concentration of particulate contaminants.

Å	angstrom	kc	kilocycles
ac	alternating current	kcal	kilocalories
amp	ampere	kgm	kilogram-meter
atm	atmosphere	kv	kilovolt
av	average	kva	kilovolt-ampere
A&WMA	Air & Waste Management Association	kW	kilowatt
Btu	British thermal unit	kW _e	kilowatt electrical
°C	degrees celsius	kW _{TH}	kilowatt thermal
cfm	cubic feet per minute	kWh	kilowatt hour
cg	centigram	L	liter
cm	centimeter	lb	pound
Co.	company	m	meter
Corp.	corporation		milli (10^{-3})
cos	cosine	M	mega (10^6)
cph	cycles per hour		molar
cpm	cycles per minute	m ³	cubic meter
cps	cycles per second	mi	mile
cm ³	cubic centimeter	min	minimum
dc	direct current		minute
dia.	diameter	mo	month
e.g.	for example	mp	melting point
et al.	and others	μ	micro (10^{-6})
°F	degrees Fahrenheit	μm	micron
fpm	feet per minute	no.	number
fps	feet per second	OD	outside diameter
ft	feet	oz	ounce
ft ³	cubic feet	%	percent
g	gram	ppb	parts per billion
gal	gallon	ppm	parts per million
gpm	gallons per minute	psi	pounds per square inch
gps	gallons per second	psia	pounds per square inch absolute
gr	grain	psig	pounds per square inch gauge
h	hour	pt	pint
hp	horsepower	qt	quart
ID	inside diameter	R	roentgen
i.e.	that is	rpm	revolutions per minute
in.	inch	s	second
ipm	inches per minute	scf	standard cubic feet
ips	inches per second	sq	square
IR	infrared	TDS	total dissolved solids
k	kilo (10^3)	temp	temperature
K	Kelvin	TGA	thermogravimetric analysis

TOD	total oxygen demand
UV	ultraviolet
V	volt
vol	volume

vol%	volume percent
W	watt
wt	weight
wt%	weight percent



Graphics

When to Use Graphics

Use figures and tables only when they are shorter, clearer or more effective than explanations in words. Do not include two different kinds of graphics (a table and a graph, for example) that present the same data.

Size of Graphics

You may size your graphics and affix them to the paper but it is not necessary. If you do this yourself, use rubber cement, a waxer or other adhesive to affix the graphic to the paper, do not use tape or staples. No graphic can be larger than 8-1/2 x 11 inches.

Where to Place Graphics

You may put all the graphics at the end of the paper or place them in the text. If you place them in the text, place them after they are first referred to in the text.

Figures

Figures include photographs, drawings and graphs.

Photographs

Include only high quality black and white glossy prints. Do not include photographs that have already been screened for printing.

Tape a small piece of paper to the back of each photograph and write five pieces of information on the paper: the figure number, the paper number, the author's name, any crop marks and an arrow indicating which way is up (the top of the photo). Do not staple, tape or paperclip the photos to your paper.

Drawings and Graphs

Drawings and graphs can be generated by hand with ink or by computer. They must be black on a white background. Do not use graph paper. Computer-generated drawings or graphs must be generated on a 300-dpi laser printer or a printer with similar high quality. Drawings or graphs that contain any hand-written letters or numbers are not acceptable. Label ordinates and abscissas of graphs along the axes and outside the graph.

Text References

You must refer to each figure in the text. When you do, write out the word "Figure" and use upper- and lower-case letters. Follow the word "Figure" with the figure number.

Numbering

Number each figure consecutively with arabic numerals when it is first mentioned in the text.

Captions

Write a short caption for each figure. Type it centered below the figure. Write out the word "Figure" (capitalized) and then the figure number. Type three spaces and then the caption. Capitalize the first word and put a period at the end of the caption.

Tables

Generate tables in the same way as the rest of the text: with a 300-dpi laser printer, word processor or typewriter. They must be black on a white background. Tables cannot contain any hand-written letters or numbers. Include a heading for each column in the table.

Text References

You must refer to each table in the text. When you do, write out the word "Table" and use upper- and lower-case letters. Follow the word "Table" with the table number.

Numbering

Number each figure consecutively with roman numerals when it is first mentioned in the text.

Captions

Write a short caption for each table. Type it centered above the table. Write out the word "Table" (capitalized) and then the table number. Type three spaces and then the caption. Capitalize the first word and put a period at the end of the caption.



Sending in Your Paper

Send the original and three (3) clean copies of your paper plus the completed abstract form, authors biographical information form and request for audiovisual equipment form to:

Dave Haseleu
Technical Program Coordinator
Air & Waste Management Association
P.O. Box 2861
Pittsburgh, PA 15230

by March 1, 1991.



Suggested Books

The books listed below are helpful in writing papers:

1. The ACS Style Guide, J.S. Dodd, Ed., American Chemical Society, Washington, DC, 1986.
2. W. Strunk, Jr. and E.B. White, The Elements of Style, 3rd ed., Macmillan Publishing Co., New York, 1979.
3. T.M. Bernstein, The Careful Writer, Atheneum, New York, 1965.
4. J.C. Hodges and M.E. Whitten, Harbrace College Handbook, 10th ed., Harcourt Brace Jovanovich, New York, 1986.



Presenting Your Paper

Tell us what audiovisual equipment you will need to present your paper at the Annual Meeting by using the form at the end of this brochure.

Checklist

Send these items by March 1, 1991:

- Original paper
- Three copies
- Completed abstract form and list of key words
- Completed excess page charge form if your paper exceeds 16 pages
- Completed authors biographical form
- Completed request for audiovisual equipment form

to:

Dave Haseleu
Technical Program Coordinator
Air & Waste Management Association
First class mail: P.O. Box 2861, Pittsburgh, PA 15230
All other mail: 3 Gateway Center, Four West, Pittsburgh, PA 15222

○

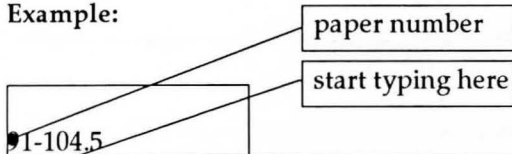
Abstract

The abstract must be shorter than 200 words and must summarize the principal findings that you present in your paper. The abstract should give your readers enough information to determine if they want to read the whole paper and also give editors and librarians enough information to index and retrieve the paper. The abstract should state who should read the paper and why, and should highlight the methods, results, and conclusions you present in the paper. The abstract must be concise and self-contained enough to appear without the rest of the paper.

Type your abstract single-spaced in the box on the back of this page. Do not include it in the body of your paper. Do not use small type since your abstract will be reduced by 40%. Do not exceed the limits of the box.

At the top of the box, type the title of the paper in upper- and lowercase letters. Follow the title with a comma and then the name of the authors. Underline the name of the speaker. Put a comma after the author and speaker, and then type their affiliation and then their complete mailing address.

Example:



Biological Remediation of Underground Storage Facilities, John D. Bogart and James R. League, Mo Tec, Inc., P.O. Box 338, Mt. Juliet, TN 37122-0338

Underground storage facilities take many forms. Any breach in the integrity of an underground system leads to serious problems. Mo Tec, Inc. has developed biological treatment techniques to remediate sites so contaminated. Virtually any organic material is biodegradable if treated appropriately. Mo Tec uses enhanced landfarm techniques, liquid solid contact digestion and a combination of techniques called the slurry hold drying bed process. This technology was commercially applied to a wood treating plant in Tennessee. The major target material to be treated was creosote sludge designated K-001 by the EPA. The process achieved 98-99% removal efficiency. Besides eliminating toxic materials, the physical bulk was diminished as 4500 cubic yards were treated in a pilot study. Only 9-15 cubic yards of residual material was measured.

○

List of Key Words

Paper number _____

Make a list of five key words that categorize your paper. Type the list on the lines below. This list will be used to group papers and to index the proceedings.

Your five key words are:



Abstract Form

Paper number _____

Author's name _____

Type your abstract in the box below.

--



Excess Page Charge Form

Because my paper exceeds 16 pages (including the title page, text, figures, and tables), I agree to pay an excess page fee to the Air & Waste Management Association.

Signed _____

Date _____

Sample
text page,
first text page
after
title page.

90-131.2

INTRODUCTION

Multimedia approaches to environmental management have been discussed in the literature for more than 15 years, but widespread applications have remained elusive. While institutional factors have been responsible in large part for this lack of progress, the scientific and technical difficulties that must be overcome also remain quite significant. Ideally, the objective of a multimedia approach is to minimize the overall risk or damage to the environment and human health from emissions to air, water and land from a particular facility or group of facilities. From a regulatory perspective, this may require tradeoffs or compromise in establishing allowable emissions to a particular environmental medium. While the state of science has not yet evolved to the point where such tradeoff assessments can be performed with a consistent degree of rigor, the philosophy of a risk-based approach to environmental management has nonetheless gained increasing acceptance in recent years.

This paper focuses on one of the major requirements for multimedia environmental management, namely a quantitative understanding of how process design and environmental control technologies affect the quantities and chemical nature of gaseous, liquid and solid waste streams emitted to the environment. A new computer model being developed for the Electric Power Research Institute (EPRI) is described, which characterizes multimedia emissions from fossil-fueled power plants. The model simulates the performance of a variety of current plant designs involving different fuels and abatement technologies for control of air pollutants, water pollutants and solid wastes. A unique feature of this model is its ability to characterize system and environmental performance parameters probabilistically. This feature is especially important in dealing with chemicals which may be designated as potentially hazardous or toxic, since the uncertainty in emission levels and control technology performance characteristics may be significant.

THE MULTIMEDIA EMISSIONS MODEL

The computer model being developed for EPRI is intended to track the pathways of all chemical substances for a given power plant configuration, and to quantify the magnitude of chemical emissions to air, water and land. A unique feature of the model is its ability to explicitly quantify the uncertainty in any or all model input parameters, including parameters describing fuel characteristics, plant performance, and environmental control system capabilities. The combined effect of all input uncertainties (evaluated via Monte Carlo methods) is then reflected in the uncertainty in any output stream or plant characteristic of interest. Thus, model results can be expressed not only in traditional deterministic (point estimate) form, but more completely as a probability distribution indicating the likelihood of various outcomes. This type of result is

2

paper number
in upper
right-hand
corner

page number
centered
at bottom
of page;
the first
text page
is always
page 2,
title page
is page 1

Sample
table page.

90-131.2

TABLE I Power plant sub-sections for the multimedia emissions model.

1. Coal Handling and Storage System
2. Boiler and Steam Cycle System
3. Spray Dryer FGD System
4. Particulate Collection System
5. Wet FGD System
6. Ash Pond System
7. Landfill / Sludge Disposal System
8. Wastewater Treatment System
9. Main Condenser System
10. Recirculating Cooling Tower System
11. Recirculating Cooling Pond System
12. Auxiliary Cooling System
13. Plant Makeup Water System
14. Plant Service Water System
15. Miscellaneous Plant Systems

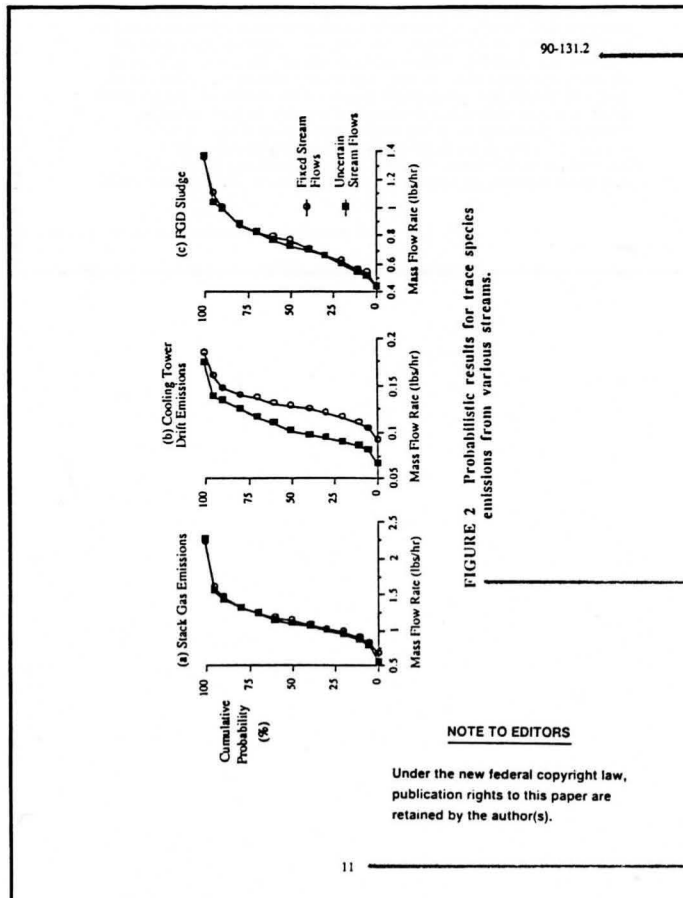
4

paper number
in upper
right-hand
corner

caption

page number
centered at bottom
of page

Sample
figure page.



paper number
in upper
right-hand
corner, regardless
of figure orientation

caption

page number
centered at bottom
of page