ART OF JOURNAL PAPER WRITING

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What should you follow

- Before writing a technical paper
- While writing a Technical Paper
- After Writing a Technical paper
Stages of the Writing Process

- Brainstorming
- Outlining
- Rough Draft
- *Revise and Edit* your writing
- Polish your writing
Before you start writing, you will think about what to write, or how to write. This is called, **brainstorming**.

When you brainstorm for ideas, you will try to come up with as many ideas as you can.

Don't worry about whether or not they are good or bad ideas.

- creating a list of ideas that you came up with
- or
- drawing a map and diagram,
- or
- just writing down whatever you can think of without thinking about grammar.
Outlining

➢ Think about the structure of your paper so that you can best deliver your ideas, and meet the requirements of writing assignments.

➢ Outline your paper by beginning with its three major parts: introduction, body, and conclusion. The specific structure of each essay may vary from assignment to assignment.

➢ This a skeleton unto which you develop or “flesh out” the paper.

➢ Once you have the skeleton in place, you can start thinking about how to add additional detail to it.
Supervisors will often require you to submit a *rough draft* of your paper. This usually means that your work is still in progress.

In the rough draft, readers want to see if you have a clear direction in your paper.

It doesn't need to be perfect, but it does need to be complete. That means, you shouldn't be missing any of the major parts of the paper.
What is the difference between revise and edit?

Revision lets you look at your paper in terms of your topic, your ideas, and your audience.

You may add more paragraphs or remove paragraphs to better fit into a given topic.

You may organize your writing better in a way that your audience can understand your writing better.

Editing typically means that you go over your writing to make sure that you do not have any grammatical errors or strange phrases that make it difficult for your readers to understand what you are trying to say.

In other words, editing means that you take care of minor errors in your writing.
Polish your writing

➢ The word polish originally meant to make something smooth and shiny

➢ In writing, polish can mean to improve or perfect, or refine a piece of writing by getting rid of minor errors.

➢ you should go over your writing and make sure you do not have any errors in grammar, spelling, punctuation, and to make sure that you do not have any sentences that do not make sense.
Before writing a technical paper

- **Who will read your manuscript**
- **Scope of the journal**
- **Reputation of journal**
- **Access**
  - availability free of charge on the World Wide Web - open access
  - On payment-subscribed (Paid journal, page charges, overlength page charges)
- **Impact factor of the journal**
  - Impact Factor of a Journal
- **Acceptance rate**
- **Publication time**
- **Author instructions (Reviewer instructions)**

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*Impact Factor of a Journal*
What you intend to write

- Research findings
  - Letters
  - Articles
  - Communications
  - Research notes
  - Supplemental articles

- Survey or Review
- Research Reports
- Research Projects for Funding
- Patents
- Dissertation of Thesis
**Research findings**

- This is your brains hard work
- Report on research findings that are Valid
- Previously unknown (Novel and original)
- Add new understanding, observation, proofs
- It should have this structure
  - Introduction
  - Material
  - Results and Discussion
Publications (Approximate figure)

- 35,000 journals published regularly
- Almost 22,000 of them are ISI (International scientific indexing) or Scopus abstracted
- Total number of papers published annually exceeds 2.5 million
- *ISI Web of Knowledge* claims to hold over 40 million items and 7387 science and engineering journals and 2257 social science journals.
- Over 50% are never cited by any one
Number of Journal Published (Thomson Reuters-Web of Science – Master Journal List)

http://science.thomsonreuters.com/mjl/
High Impact Factor Journals

- Impact factor of journal is the frequency of its citations.

- High impact factor journals are the ones which have high frequency of citations by others.

- It is a superficial, but internationally accepted, measure of quality of journals.
Why should you Publish in High Impact Factor Journals

- Publish or perish is the motto of researchers
- Greater visibility of research findings
- Increased chances of citations
- Greater recognition among peers
- Associated benefits such as promotions, productivity allowances, etc
In any given year, the impact factor of a journal is the number of citations, received in that year, of articles published in that journal during the two preceding years, divided by the total number of articles published in that journal during the two preceding years:[1]

\[
IF_y = \frac{\text{Citations}_{y-1} + \text{Citations}_{y-2}}{\text{Publications}_{y-1} + \text{Publications}_{y-2}}
\]

[1] "Journal Citation Reports: Impact Factor". Retrieved 2016-09-12 Before writing a technical paper
A journal's impact factor for 2008 would be calculated by taking the number of citations in 2008 to articles that were published in 2007 and 2006 and dividing that number by the total number of articles published in that same journal in 2007 and 2006.

Thus, the Impact Factor of 6.125 for the journal, *Academy of Management Review* for 2008 indicates that on average, the articles published in this journal in the past two years have been cited about 6.125 times.
Reviewer report

Before writing a technical paper

**IEEE Transactions on Antennas and Propagation**

**Reviewer’s Report for Paper**

(Administratively Confidential)

I. **Technical Content**
   1. Does this paper present **new ideas or results** that have not been previously published? Yes ___ No ___
   2. Are the results presented in this paper **important** for the AP-S Community? Yes ___ No ___
   3. Is the paper technically correct? Yes ___ No ___

Reviewers are asked to address all of these issues in “Comments for Transmittal to Author”. Papers that are technically correct, but include only minor advances over previously published work are unacceptable.

II. **General Content**
   1. Is the subject matter suitable for the AP-S Transactions? If not, please suggest an alternate journal on the line below:

   __________________________________________

   2. Is the paper complete for understanding? Yes ___ No ___
   3. Is the paper concise for AP-S publication? Yes ___ No ___

   If not, suggest the percentage reduction necessary in part IV. Also, make specific page reduction recommendations in your “Comments for Transmittal to Author”.

   4. Is the manuscript written in clear, idiomatic English? Yes ___ No ___
   5. Is previous related work adequately referenced? Yes ___ No ___

III. **Overall Evaluation**

Relative to most papers, rate this paper based on the scale provided.
Publication time

IEEE Transaction

Manuscript received August 1, 2017; revised November 7, 2017 and January 8, 2018; accepted February 13, 2018. Date of publication February 15, 2018; date of current version July 16, 2018. The review of this paper was coordinated by Dr. Y. Gao. (Corresponding author: M. Gulam Nabi Alsath.)

IEEE Letters

Manuscript received December 24, 2017; revised January 26, 2018 and January 29, 2018; accepted January 30, 2018. Date of publication February 2, 2018; date of current version March 1, 2018. (Corresponding author: Yogeshwari Panneer Selvam.)
H index
H index

- Measure of a researcher’s productivity (quantified by the number of papers)
  and
- Impact.
  (the number of citations the researchers' publications have received)
The h-index was originally defined by J. E. Hirsch in a Proceedings of the National Academy of Sciences article as the number of papers with citation number $\geq h$.

An h-index of 3 hence means that the author has published at least three articles, of which each has been cited at least three times.
The first $n$ papers above (or on) the diagonal (red line) constitute the $h$-index.

In this case the $h$-index is 3.
**H index - example**

<table>
<thead>
<tr>
<th>Publication</th>
<th>Citations</th>
<th>H index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td></td>
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<tr>
<td>2</td>
<td>8</td>
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<tr>
<td>5</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

The number of papers with citation number $\geq h$. 
The **H index** is defined as the number of papers with citation number $\geq h$.
H-Index or Hirsch Index or Hirsch Number

- It measures both the productivity and impact of the published work of a researcher.

- The index is based on the set of the scientist's most cited papers and the number of citations.

- The index can also be applied to the productivity and impact of a group of scientists, such as a department or university or country.
**H-index or Hirsch index or Hirsch number**

- The h-index is the largest number ‘h’ such that h publications have at least h citations.

- The h-index is based on a list of publications ranked in descending order by the Times Cited. The value of h is equal to the number of papers (N) in the list that have N or more citations.
What is the i10-index?

- **i10-Index** = **the number of publications with at least 10 citations**. This very simple measure is only used by Google Scholar, and is another way to help gauge the productivity of a scholar.
WHILE WRITING A PAPER
What is the?  INTRODUCTION
What did you do?  METHODS
What did you find?  RESULTS
What does that mean?  DISCUSSION
Research Paradigm

1. Literature survey
   (continuous process – past, present and future)
2. Identify issues
3. Take up an issue or issues as problem statement
4. Solve the issue
5. Report the methodology and achievement
A Good Manuscript is

- Concise but powerful
- To the point
- Free from grammatical and stylistic errors
- Recognizing contributions of others
- Technically correct
Which journal should I choose for publishing

Aim high- Go for first tier journals if you have time and temperament to write a good manuscript
Which journal should I choose for publishing

- Decide the target journal before writing or drafting the article.

- Prefer those journals which publish similar work or the journal articles you are citing for your work.
Types

- Letters
- Articles
- Communications
- Research notes
- Supplemental articles
Peer Review Process

- Convincing the reviewer is very important

- It is he/she who reads your paper more thoroughly
Formula for good publication

- Novel idea (out of the box thinking)
- Quality science/research
- Good writing and attractive presentation
- Published in high impact journal

A good article is the one that is read and cited!
Manuscript Preparation
Key to Writing Skills

• The path to writing well is to read excellent writers and write……..and write…...and write.

• “Free write” your thoughts. Don’t worry about structure initially.

• Use the best paper in your field as a template and try to convert your free write-up into a formate.

• Keep writing concise, dynamic and simple in construction.

• Convey enthusiasm in your writing so it attract the audience.
Preparing a manuscript is a critical step in research.

Creative work and novel results will have dull impact if the manuscript is not written well.
IMRaD structure - Writing a draft

**Introduction**--- What is the?

**Materials and methods/experimental procedures**-- What did you do?

**Results**-- What did you find?

and

**Discussion**-- What does it mean?


Scientific Writing: My Approach and Irreverent Opinions, Mark Yeager.
Title
Abstract
Introduction
Methods
Results
Discussion
Acknowledgements
References
Title, key words and abstracts are used for electronic searches
Divide and work

If you get stuck on a particular section, just skip to a different section that is easiest to write.

*It means the easiest first and the most difficult latter.*
Title- The Backbone of an Article

➢ It indicates content and main discoveries and attracts the readers attention.

➢ *It decides whether article is worth reading or will get attention of the readers.*

➢ Go for the Journal instruction in writing titles.
Impact of Article Title

Examples:

- Preferred Title: An Integrated Tri-band/UWB Polarization Diversity Antenna for Vehicular Networks

- Concise but not preferred Title: Tri-band/UWB Polarization Diversity Antenna

- The title play a vital role in citations

- Construction of an article title has a significant impact on citation frequency.
Electronic searches are now preferred over other means, which includes SciFinder, PubMed, Web of Science, Google Scholar, etc.

These searches are based on the title or key word.

Longer, comprehensive titles are more likely to contain given search terms.

Therefore the title should provide clear description, finding of study.

Titles not to exceed two lines in print.

Titles do not normally include numbers, acronyms, abbreviations or punctuation.

They should include sufficient detail for indexing purposes but be general enough for readers outside the field to appreciate what the paper is about.
Author Listing

- ONLY include those who have made an intellectual contribution to the research

- OR those who will publicly defend the data and conclusions, and who have approved the final version.

- Order of the names of the authors can vary from discipline to discipline
  - In some fields, the corresponding author’s name appears first
Index Terms-key words

➢ Often used as a search item to locate your paper
➢ Helps the reader identify your work
➢ Relevant keywords can improve your citations
➢ Careful selection of keywords is necessary
➢ Don’t be hasty and ignore this important aspect of the paper
Abstract- *Most Critical Part of Paper*

- Should be informative, indicative and reflects the main ‘story’ of the article.

- Briefly summarize (often 150 words) - the problem, the method, the results, and the conclusions so that this is the only chance you have to get the reader’s attention.

- Should be crisp, concise and accurate.

- Gives the quick idea of the contents

- Should answer the following queries of the reader
  - What was done?
  - What were the specific results?
  - What are the significant conclusion?

- *write abstract at the end*

- *The detailed information must be present in the body text, not in abstract.*
The introduction serves a twofold purpose.

- Firstly, it gives the background on and motivation for your research, establishing its importance.
- Secondly, it gives a summary and outline of your paper, telling readers what they should expect to find in it.
Introduction

➢ Clearly state the:
  ➢ Problem being investigated
  ➢ Background that explains the problem
  ➢ Reasons for conducting the research

➢ Summarize relevant research to provide context

➢ State how your work differs from published work

➢ Identify the questions you are answering

➢ Explain what other findings, if any, you are challenging or extending

➢ Briefly describe the experimental design or method
Introduction

- Ask question to yourself that why should anyone read your paper amongst the 1000’s appearing that month? Create-A-Research-Space
- It should introduce the topic and relate to the existing research.
- significance of your research.
- Capture your audience. Why is your work important? Avoid comprehensive review, self citations, etc.
Material and Methods

- Write the methods section first because it is the easiest to write.
- Provide enough details for competent researchers (Who, What, When, Where, How, and Why?)
- Sufficient information must be provided for reproducibility
- Study design-new methods must be described in detail
- Measurements/ instruments
  - Include the frequency of observations, what types of data were recorded, etc.
  - Be precise in describing measurements and include errors of measurement or research design limits
- Animal, human, protections details
- Statistical analysis and data collection
- Descriptive subheadings
What you should not do

http://www.nature.com/scitable/ebooks/english-communication-for-scientists-14053993/writing-scientific-papers-14239285
What you should not do

Multiple submissions
Results

- Use descriptive headings that concisely state the results.
- Data representation - concise and accurate.
- Short and easy to understand
- Consistent with the abstract and introduction
- Give tables and figures where needed
  - With sufficient information so that minimum text is required.
  - Don’t repeat information in graphics and text.
Results

- Appropriate numbering of figures and table mentioned in the text.
- Use significant figures where required.
- Avoid speculations and over discussion.
- Avoid using words such as proves, confirmed, removed all doubts, etc. Remember science is dynamic and ever changing.
• Hardest section to write, but it is also the most important.

• Use descriptive headings that concisely summarize the interpretation of the results.

• Answer the question posed in introduction

• Correlation of your finding with the existing knowledge

• Discrepancies between new results and previously reported results.
Discussion

• What is new without exaggerating.

• Conclusion/summary, perspectives, implications.

• Research limitations and need for future research.

• Theoretical implications and possible practical applications.
Conclusion

- Identify key findings and application

- Should not be a summary of the work done- abstract is doing fine with that.

- Consistent with experimental and introduction
References

• Cite current and key pertinent references

• Reference citations must be accurate and complete

• Read the references

• Use correct style for journal
Reference Citations

➢ A reference citation is the documentation needed to make your paper acceptable for academic purposes.

➢ It gives authoritative sources for your statements, helps the reader gain access to those sources.

➢ Acknowledges the fact that the information used in a paper did not originate with the writer.
Types of Reference Citation styles

- Modern Language Association (MLA)
- American Psychological Association (APA)
- Chicago Citation
- Harvard Referencing
- Oxford Referencing
- Vancouver Styling
- Modern Humanities Research Association (MHRA)
1. APA (American Psychological Association)

Referencing format: APA style uses the author/date method of citation in which the author's last name

Example:

2. MLA Referencing Style (Modern Language Association)

Referencing format: Author name, Article Title, Title of the container, Contributors, Versions, Numbers, Date of Publications and location.

Example:
Mitchell, James A. “Citation: Why is it Important”. Mendeley Journal, vol. 4, no. 6, Summer 1999, pp.607-674

3. Harvard Referencing Style

Referencing format: Author-date system

Example:
4. Chicago Referencing Style

Referencing format: Author first name last name, *Title of Book* (Place of publication: publisher, year), page number(s).

Example:

5. Oxford Referencing Format

Referencing format: The author’s given name precedes the surname, publisher, year, page number(s).

Example:

6. Vancouver Referencing Style

Example:
7. MHRA referencing style  (Modern Humanities Research Association)

Referencing Format: The authors last name, a shortened version of the source title, volume number (if relevant) and page number/s

Example:

Acknowledgments

• Funding agencies

• Intellectual contributions

• Dedications

• Notes
AFTER WRITING A PAPER
After writing the first draft, at least a dozen revision are usually needed to improve to the text.

Make sure that all authors read the first draft. **Give them timeline...**
Revision

- Effectiveness of the study
- Supporting information
- Order and flow of the article
- Must be leaving reader with a new question
Revision and Proofreading

- Proofreading: All authors should participate
- Grammar and spelling errors
  - Consistent verb tense
  - Vocabulary
  - Tighten the sentences
  - spell-check
  - Punctuation
  - typos
- Technical terms
  - Scientific symbols
  - Reaction scheme
  - Chemical structures/names
  - references
Responsibilities of Authors
from Preparation of Manuscript to Submission

- New and original research
- Manuscript have been checked by all the listed authors.
- Obtain copyright permission if figures/tables need to be reproduced
- Proper affiliation
- Acknowledgement
Criteria for Acceptance

- **Originality**
  - Novel or creative research methodology
  - New and important research findings

- **Scientific Quality**
  - Experimental design and methodology
  - Research data representation
  - Depth of the investigation
  - Thorough and logical discussion of results
Criteria for Acceptance

- Clarity of Presentation
  - Organization/ presentation
  - Readability/ clarity of writing/ grammar
  - *Paper is much more likely to be rejected based on inadequate analysis than lack of originality*

- Importance in the scientific world
Major Reasons for Rejection

• The study is just confirmation of previous research i.e. not novel

• Poor experimental design

• Targeted journal is not suitable

• Weakly written/presentation and language
Process of Research and its Publication

Completion of research → Preparation of manuscript → Submission of manuscript → Assignment and peer review → Decision → Revision → Resubmission → Re-review → Acceptance → Publication → Rejection

Rejection
Do’s and Don’ts

- Be factual
- Be honest
- Be legal
- Be objective
- Be accurate

- Don’t deceive
- Don’t falsify
- Don’t plagiarize
Ethics

- Authorship issues

- Informed consent/ institutional review board/ ethical review board approval

- Acknowledging past and present contributions of others

- Registered Clinical Trials

- Acknowledge Grants/funding

- Avoid Fragmentary or duplicate publications
1. **Falsification and Data alteration**

2. **Plagiarism**: Intentional use of another person's work with reference to your name without proper citation of the original source

- Duplicate manuscripts
- Unnecessary self citation
- Redundant publication
- Author conflicts of interest
- Animal use concerns
- Human use concerns
Acknowledgement and References

- **Skill Development Workshop** – Presentation by Dr. M. Iqbal Choudhary
Case Study
Manuscript Name: An Integrated Triband/UWB Polarization Diversity antenna for Vehicular Networks

Manuscript Type: Full length paper

Originally submitted to: IEEE Transactions on Antennas and Propagation (Jul. ’16)

Decision: Reject (Sep. ’16)

Resubmission to: IEEE Transactions on Antennas and Propagation (Sep. ’16)

Decision: Reject (Dec. ’16)

Revised and Resubmitted to: IEEE Transactions on Vehicular Technology (Aug. ’17)

First & Second Decision: Major Revision (Nov. ’17 & Jan. ’17)

Final Decision: Accept (Feb. ’18)
Major Comments from TAP

1. Complete analysis on diversity antennas is missing
2. Questions on Antenna novelty and integration methods
3. More clarity on the reconfiguration mechanism
4. Antenna capacity calculations are missing
5. Figure representations can be improved
6. Language

Manuscript rejected in TAP since authors failed to satisfy one of the two reviewers

Manuscript rejected twice cannot be resubmitted to the same Journal
The manuscript has three major conceptual flaws:
1st, a practical feed of the antenna is not addressed: Each antenna monopole element is fed using a SMA connector and a very small ground plane. This means that the feeding coaxial cables will carry sheath currents and become a radiating part of the antenna, as is also admitted by the authors on page 3, line 15-17, explaining discrepancies between simulation and measurement. In a practical application like for massive MIMO – the intended application as mentioned by the authors in the manuscript and as response to Reviewer 2 - this non-trivial task definitely needs to be addressed.

2nd, the biasing of the pin diodes is not discussed. Since each pin diode requires DC bias for operation, an appropriate feeding network needs to be implemented in the antenna design process if such switching elements are used. This paper completely neglects this issue in the description of the antenna. Fig. 13 shows feeding cables directly soldered to the antenna elements, without any decoupling or appropriate routing of these cables. This means that these cables will become a radiating part of the antenna as well, which renders the whole described design methodology and reported measurement results questionable.

Third, the authors fail to explain and motivate the benefit of switching between an UWB and a three-band mode. Both antennas are co-oriented monopoles, so very similar radiation patterns are expected (and shown in Fig. 9 and 10). The UWB antenna already covers the two upper bands of the multiband antenna mode, and an extension to the lowest band seems straightforward. What justifies the complexity of 2x8 pin diodes and the associated control hardware? This seems to be the only contribution in this paper when compared to the previous paper by the authors:
Further Comments & Rejection

Reviewer: 1

Comments for Transmittal to Author
- The authors tried to respond to my previous comments on their previous version of this work. Unfortunately, their corrections are not enough and did not improve the manuscript to the level of TAP. My detailed comments follow.
- The element design is not novel in elements or arrangement. Check dual arm monopoles in [R1]-[R4] below, as well as the arrangement has appeared in a recent paper by the same group in [12].
- The manuscript needs severe English proof reading. As a matter of fact, due to these English issues, a lot of statements are misleading. Check the following examples:
  o The title "An integrated Dual-Mode Polarization Diversity Antenna", suggests that the dual modes are for polarization, thus the confusion raised by this same reviewer that later one, such statements indicate that the authors are considering polarization diversity modes and NOT frequency reconfigurability.
  o The same misleading statements are in the first four lines of Abstract.
  o Check second paragraph in introduction for so many English mistakes.
  o The statement in paragraph 3 in introduction, "Thus a dual mode antenna sharing a common feed and aperture is used to construct a polarization diversity antenna", what does this indicate? This was my comment in the first review, and you disagreed with that!
  o Then you come back four lines below that to say "The reconfigurable MIMO antennas presented in [18-19] offer only two polarization states. Therefore effort is put in this research to develop a polarization diversity antenna with multiple polarization vectors. Thus an eight port diversity antenna with horizontal and vertical placement of antenna is reported in this manuscript." What does this tell the reader?
  o page 3, first column, line 3 and line 7, "parasite"??

ASSOCIATE EDITOR'S COMMENTS:
Associate Editor
Comments to the Author:
Authors have spent a significant time in revising the previously rejected paper. However, this version fails to meet the level of novelty and completeness that is necessary for the TAP. Therefore, my recommendation is to reject this manuscript.
New Submission

1. Further comments given by the reviewers are included in the manuscript
2. Manuscript falls within the scope of IEEE-TVT
3. Manuscript is submitted to IEEE – TVT (Communication Devices and Circuits)
4. Two Major revisions and a final accept.

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From: yue.gao@ieee.org
To: alsath@live.com, gulamnabialsathm@ssn.edu.in
    alsath@live.com, gulamnabialsathm@ssn.edu.in, henrydhas@gmail.com, yogaindira93@gmail.com,
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CC: eic-tvt@it.is.tohoku.ac.jp, admin-tvt@it.is.tohoku.ac.jp

Subject: IEEE TVT - Decision on VT-2017-01436.R2- Accepted as a Paper

Body: Dear Mr. Alsath:

I am pleased to inform you that your paper:

VT-2017-01436.R2: An Integrated Tri-band/UWB Polarization Diversity Antenna for Vehicular Networks
has been accepted for publication in the IEEE Transactions on Vehicular Technology.
Thank you