


# RESEARCH PAPER WRITING AND METHODS TO AVOID PLAGIARISM

  
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# PREFACE

Many individuals have a liking for innovation, creativity and problem solving. This boon is gifted not only to professionals but is possessed even by many others including illiterates. Professionals include persons in academia, field, industry, research organizations as well as students pursuing professional education. On many occasions, individuals gain sufficient insight into the area of their interest through consistent analysis and research. They come out with significant observations or an innovative solution which may prove to be useful to the society and professional fraternity in current as well as future times. Naturally, such solutions should be recorded and preserved. Writing a research paper based on the detail study, analysis, findings & validation and then publishing/presenting the same in a quality journal/conference is one of the means to do so.

While doing so, it is very important to respect the contribution of other researchers by giving due credit to their work if it is used in the paper. However, this needs to be done such that it will not be treated as plagiarism. Many times, plagiarism happens not because the author intentionally wants to cheat but because he does not know how to give due credit for the information taken from other sources.

This lecture explains in detail the step by step approach to distill the thoughts in the form of a research paper and prevalent methods to avoid plagiarism. Each aspects is further illustrated with the help of xamples. I hope, readers will find it interesting and useful. Any suggestion for the further improvement re welcome. Wish you a happy reading!



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Sanjay Bodkhe 2



# CONTENTS

## Research Paper Writing

- Why to write and who can write ?
- What type of paper to write ?
- Paper layout
- Expectations of reviewers and review Process
- How to write ?
- Probable grounds of rejection
- Do's and don'ts in paper writing

## Research Ethics & Plagiarism

- What is plagiarism ?
- IEEE levels of plagiarism
- Common words
- Methods for avoiding plagiarism
- Quoting; Paraphrasing; Summarizing
- Examples
- Similarity check before paper submission





# MOTIVATION



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# Research Paper: Why to write?...Benefits?

- Revision of your own understanding, effort for more insight and awareness of technological developments in the area.
- Recognition in scientific community.
- Citations give satisfaction of accomplishment.
- Public review of the work may provide useful suggestions for further improvement.
- Your contribution of new knowledge may help other researchers in their work.
- Useful for promotions in academic and research organizations.
- Compulsion for research scholars to publish research papers.





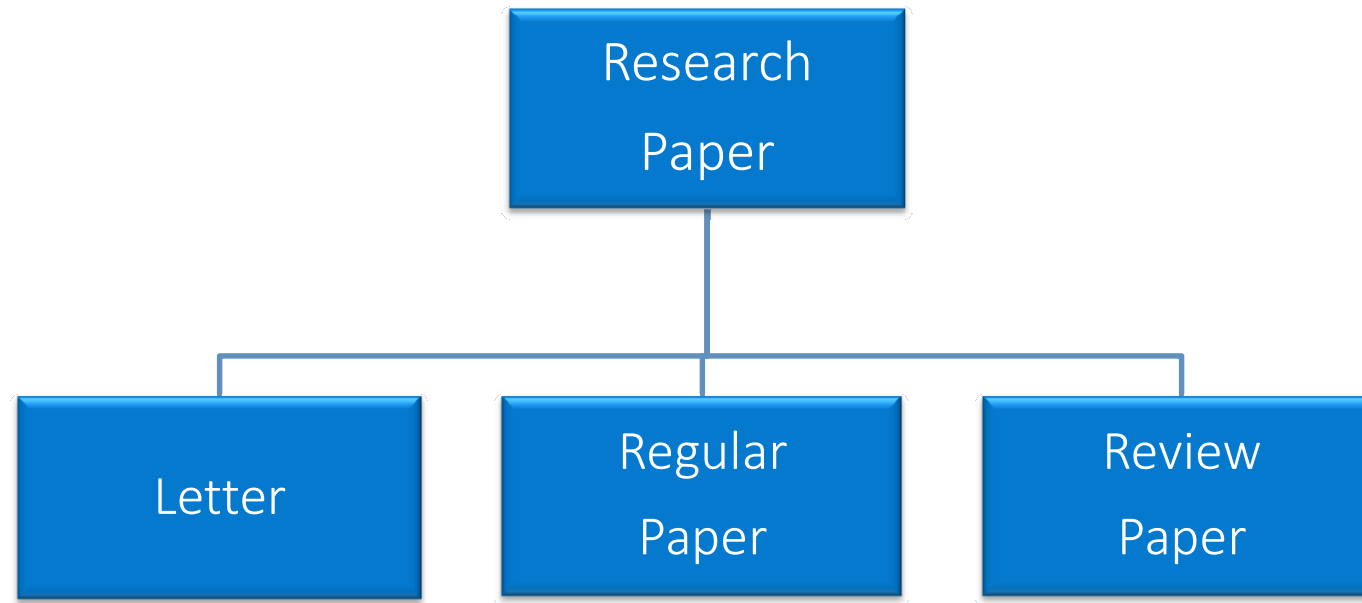
# RESEARCH PAPER WRITING



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# Research Paper: Types?



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## Letter

Letters are the focused, peer-reviewed, rapid-publication journals.

- *IET Electronics letter* publication time = 2 weeks
- *IEEE Power Electronics letter* (2003-06) = 6-8 weeks

They are expected to include:

- Concise literature review to establish its relationship to prior work
- Sufficient results to prove the validity/viability of proposed concept
- Max length of Letter = 3 or 4 pages.

Before the completion of full research work, if the researcher arrives at some important intermittent conclusions based on proper verification/validation, and if it is worth sharing with the scientific society, he/she can go for a Letter.





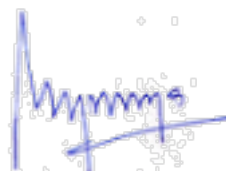


# Letter

Example:

IET Electronics letter has the following interdisciplinary scope:

- Antennas and Propagation
- Biomedical and Bioinspired technologies
- Control Engineering
- Electromagnetism: Theory, Materials and Devices
- Electronic Circuits and Systems
- Image, Video and Vision Processing
- Information, Computing and Communication
- Instrumentation and Measurement
- Microwave Technology
- Micro and Nanotechnology
- Optical Communications
- Photonics and Opto-Electronics
- Power Electronics, Energy and Sustainability
- Radar, Sonar and Navigation
- Semiconductor Technology
- Signal Processing
- Wireless Communication



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## Regular Paper

It is a paper designed for Conference or the Regular issue or Special Section issue of a journal. Usually, the length lie between 4 & 8 pages including authors' bios and photos.

For a technology topic, it may consist of description, mathematical analysis, simulation study and experimental validation.

The concept or analytical results may be validated by simulation results. But, the simulation work is only a computer aided implementation of mathematical model. If the model is inaccurate, the results are approximate.

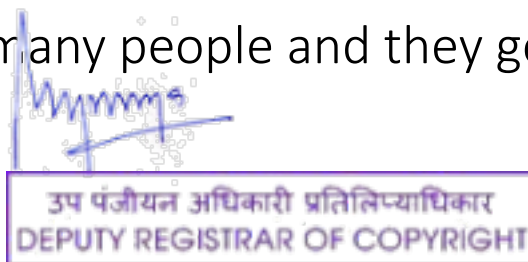
For an engineering topic, experimental results are usually necessary for acceptance in a reputed journal.





# Necessities of a Good Paper

- The results of research must have archival value. The contribution should be important for applications or further advancement.
- The archival literature must be printed/stored somewhere and should be unalterable.
- Must be reviewed by independent professionals before final publication.
- Must be complete so that others can reproduce the results.
- It should be clear, concise and well-organized with logical flow of information.
- Good papers are read by many people and they get good citation.





# Review Process

- Every paper submitted to a quality conference or a quality journal undergoes a peer-review process by multiple reviewers and their judgment determines acceptance or rejection of the paper.
- Normally, if two reviewers recommend acceptance or rejection to the Editor, the authors are conveyed accordingly. Else, the third review becomes essential.
- Some journals like IEEE Transactions follow a Blind Review Process where any content in the paper which may reveal the identity of the authors is removed.





# Expectations of Reviewers

The reviewers are normally busy professionals, and hardly can afford time for review of the paper. First, he tries to get preliminary impression of the paper by glancing at the title, name of author(s), abstract, figures and the conclusion. Next, he tries to judge the paper objectively based on the presence of certain features in the paper.

- Originality/Novelty/Creativity
- Usefulness
- Completeness
- Correctness
- Presentation
- Validation of proposed solution
- References used



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# STEPS FOR PAPER WRITING



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First, gather the required material



Then, start working on your imagination





# Initialization

After your work is ready for the paper,

- Organize your thoughts.
- Collect the references.
- Plan different sections and subsections with tentative title.
- Sequence the broad content (clear, concise, well-organized, logical flow of information).
- Plan the figures and tables with appropriate captions/labels (To be finalized after preparation of the full draft paper).
- Organize the main equations.



Now start to prepare a draft paper.







# General Layout

- Title
- Names and affiliation of authors
- Abstract
- Keywords
- Introduction
- Paper body
- Conclusion
- Appendix
- Acknowledgement
- References
- Author's biography





# Title, Affiliation, Abstract, Keywords

Like child tantrums, the authors have to do everything possible so that the paper will be noticed and read. Therefore, very careful wording should be used in the title, abstract and index terms.



Else, even a good paper may not be selected and if published, it may not receive good citations.





# Title

- The title of the paper should clearly reflect the contribution in the paper.
- It should be sufficiently specific preferably within 10-15 words.





## Examples of Title

### Wireless Power Transfer-An Overview

Z. Zhang, H. Pang, A. Georgiadis, C. Cecati, *IEEE Trans Ind. Elec.*, Vol. 66, Iss.2, Feb. 2019, pp.1044 – 1058.

### Power Electronics and Motor Drives in Electric, Hybrid Electric, and Plug-In Hybrid Electric Vehicles

A. Emadi, Y. J. Lee, K. Rajashekara, *IEEE Trans Ind. Elec.*, Vol. 55, Iss.6, June. 2009, pp. 2237-2245.

### An Induction Machine With Tapped Stator Windings for LCI-Fed Medium Voltage Drive Applications

J. Titus, Kamalesh Hatua, *IEEE Trans Ind. Elec.*, Vol. 67, Iss.9, Sept. 2020, pp.7217-7227.

### Mitigation of DC-Link Current Ripple for Dual Three-Phase Flux-adjustable Hybrid PMAC Drives Using Collaborative Switching Strategy

Z. Wang, X. Wang, X.Yang, C. Wen, U. Gong, Y. Hu, *IEEE Trans Ind. Elec.*, Vol. 67, Iss.9, Sept. 2020, pp.7202-7216.





# Abstract

Generally three components are sufficient for the abstract.

- Problem or the selected topic and it's importance
- Core idea of the proposed solution and whether it is verified.
- Probable outcome of the research work.

## Thumb-rule while drafting the abstract

- A few sentences on the wider context & significance.
- A few sentences on the innovation/research method used.
- A few sentences on results/conclusion/outcome.



## Keywords

Key words should be both general and specific.

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## Example of Abstract

*Shuxin Xiao, Tingna Shi, Xinmin Li, Zhiqiang Wang, and Changliang Xia, "Single-Current-Sensor Control for PMSM Driven by Quasi-Z-Source Inverter," IEEE Trans. Power Electronics, DOI 10.1109/TPEL.2018.2875533.*

*Abstract*—This paper proposes a new single current sensor (SCS) control method for a permanent magnet synchronous motor (PMSM) driven by a quasi-Z-source inverter (qZSI). In this method, the sum of two branch currents in the inverter is sampled by a single current sensor twice for one control period, under actions of two different shoot-through voltage vectors. Then the three phase currents of the motor can be reconstructed by these two sample values and can be later used for current closed-loop control of the PMSM. In this paper, the feasibility of the SCS control method is analyzed thoroughly and a corresponding modulation strategy is given for the qZSI. Compared with traditional SCS control methods, the new method fully eliminates the measurement dead-zone problem without any additional compensation strategy. The operation range of the PMSM extends and utilization rate of the input voltage improves. In conclusion, the proposed method is easy and convenient to implement, which makes itself a promising application in Electrical Vehicles (EVs).



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## Example of Abstract

*Farshid Naseri, Ebrahim Farjah, Teymoor Ghanbari, "An Efficient Regenerative Braking System Based on Battery/Supercapacitor for Electric, Hybrid and Plug-In Hybrid Electric Vehicles with BLDC Motor," IEEE Transactions on Vehicular Technology, DOI 10.1109/TVT.2016.2611655.*

*Abstract*— Complementary features of batteries and supercapacitors can be effectively used in a Hybrid Energy Storage System (HESS). The utilization of the HESS in Electric Vehicles (EVs) offers many advantages such as efficient regenerative braking, battery safety, and improved vehicle acceleration. In this paper, a new Regenerative Braking System (RBS) is proposed for EVs with HESS and driven by Brushless DC (BLDC) motor. During regenerative braking, the BLDC acts as a generator. Hence, using appropriate switching algorithm, the DC-link voltage is boosted and the energy is transferred to the supercapacitor or the battery through the inverter. The harvested energy can be utilized to improve the vehicle acceleration and/or keep the battery pack from deep discharging during driving uphill. In order to provide a reliable and smooth brake, braking force distribution is realized through an Artificial Neural Network (ANN). Simultaneously, the braking current is adjusted by a PI controller for constant torque braking. In order to evaluate the performance of the proposed RBS, different simulations and experiments are carried out. The results confirm high capability of the proposed RBS.

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# Introduction

- This section is very important because, it provides the background of the problem, its importance and current state of technology.
- Therefore, initially, highlight broadly the general importance of your work and why it is important.
- The next step is description of the past contributions with references on which your contribution is based.
- Later, emphasizing on why your contribution is novel/ superior to others.
- If the contribution is not of your own but from others, it should be disclosed clearly.



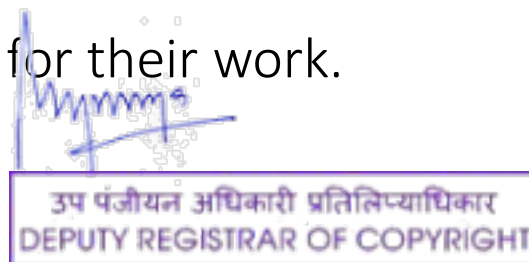




# Introduction

## Remember

- Emphasize on positive more than the shortcomings of earlier papers.
- Be generous in citing others.
- Do not limit to work that directly influenced your paper.
- Give brief idea about the contents of your work.
- Distinguish your work from others without making *unkind* remarks for them or for their work.





# Paper Body

It may consist of:

- The problem description
- Your idea/approach towards the solution
- Description, Modelling and Analysis of proposed solution
- Verification through simulation if applicable
- Validation by experimentation/case-study if possible
- Discussion on simulation/experimental results.





# Paper Body

## Remember

- It may be highly variable, more drafting iterations may be needed.
- Ensure logical progression with later sections. Build on what has come before.
- Anticipate reader's questions and try to give answers.
- Use standard symbols for quantities.
- Use standard form of symbols for variables, For Scalar: lower case italic, normal. For Vector: upper case bold.
- Font size of symbols must be same everywhere (in text as well as in equations).



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# Paper Body

## Remember

- All symbols must be defined. A nomenclature can also be provided in the beginning before Introduction or locally as per need.
- Use equation editor for equations and symbols.
- Try to present your statistical results by standard graphical tools like histogram, bar-chart, etc.
- It is always helpful to introduce the idea with the help of block diagram in the beginning.
- If the paper is on algorithms, flowchart should be presented.
- If the validation is done by experimentation, give a well labeled picture of the experimental set-up.





# Equations

- Equations are often defined as ornament of the paper, and if possible, at least a few equations are always desirable.
- Use commonly used symbols that are used in the text books. It is always better to define them locally (instead of using list of symbols in the beginning or end of the paper).
- The derivation of the equations if necessary, should be included briefly in the Appendix in order to prevent diversion of the reader's attention from the main contribution.
- Depending upon the journal format, they may be left flushed or centre aligned and have right flushed numbering.





# Figures

- A figure is worth of thousand words.
- Proper planning of figures with correct labels and caption is a very crucial step for preparation of the paper.
- Figures should be fully explanatory and convey clearly contribution.
- Simplified schematic diagrams, functional block diagrams, or simply blocks may be used as appropriate.
- For graphs, the grid should be light, variables should have units and scaling should be readable.
- However, the figures can only be finalized after preparation of the full draft paper.



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# Conclusion

- Finally, the results and significance of the contribution are summarized in Conclusion.
- Therefore, it should have a critical evaluation on the contents of the paper.
- It should highlight the merits of proposed work.
- Also, it may reflect, what was not done by you and how others can take this work further.
- Conclusion and Abstract may have some amount of overlapping.





## Example of Conclusion

*Shuxin Xiao, Tingna Shi, Xinmin Li, Zhiqiang Wang, and Changliang Xia, "Single-Current-Sensor Control for PMSM Driven by Quasi-Z-Source Inverter," IEEE Trans. Power Electronics, DOI 10.1109/TPEL.2018.2875533.*

To eliminate the measurement dead-zone still existing in traditional double-branch measured SCS control methods which are based on VSI-PMSM drive system, this paper introduces quasi-Z-source inverter and proposes a new SCS control method for qZSI-PMSM drive system. The feasibility of reconstructing the three-phase currents with the sampled values of single current sensor during the action of two different shoot-through voltage vectors in one control period is validated. Then a customized modulation strategy is designed to facilitate the realization of idea. Finally, considering the characteristics of the customized modulation strategy, a switching mechanism is included in the proposed SCS control method. To sum up, the proposed SCS control method based on qZSI-PMSM drive system has the following advantages:

- 1) MDZ problem can be avoided without any compensation strategy.
- 2) The operation range of PMSM can be extended and the input voltage can be made more use of under SCS control.
- 3) Introduction of qZSI eliminates concerns about shoot-through fault in VSI and helps to improve system reliability.
- 4) The method is easy and convenient to implement.







## Example of Conclusion

*Farshid Naseri, Ebrahim Farjah, Teymoor Ghanbari, "An Efficient Regenerative Braking System Based on Battery/Supercapacitor for Electric, Hybrid and Plug-In Hybrid Electric Vehicles with BLDC Motor," IEEE Transactions on Vehicular Technology, DOI 10.1109/TVT.2016.2611655.*

In this paper, a new RBS based on utilization of HESS is proposed for EVs driven by BLDC motor. During regenerative braking and/or energy regeneration, the kinetic energy of the vehicle is harvested by the supercapacitor using appropriate switching template of the inverter. Hence, the need to additional power electronics interfaces is eliminated. Meanwhile, the MLP-ANN controller is utilized to control the braking force distribution between rear and front wheels of the EV. Moreover, the PI controller is used to control the duty-cycle of the PWM in the inverter to realize constant torque braking.

In comparison with other similar types of the regenerative braking schemes, the proposed method has the superiorities of being simple and being high-efficient. The EV is simulated in WVU 5-peak drive cycle and it is shown that in comparison with the regenerative braking with ESS, the efficiency of the regeneration is improved about 20%. Moreover, it is shown that the drive range of the EV is increased about 5 cycles. It can be concluded that the presented scheme is able to capture the braking energy with appropriate efficiency and ensures the safe deceleration of the EV.





# References

- All cited papers must be referenced within the text of the manuscript. It is expected that a significant portion of references are of recently published papers (Last 3-5 years).
- The list of references can be prepared either in sequence or alphabetically as per the given format.
- A reviewer of the paper who judges the paper may be angry if he sees that his relevant contribution has not been cited in the paper.
- It is wise to cite one or two books in the beginning which describes the background material of the paper and add a few extra references on the relevant subject.





# REVIEW or SURVEY PAPER



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# Review Paper

As per Thomson Reuters, an item can be classified as a Review if it meets any of the following criteria.

- It cites more than 100 references
- It appears in a review publication or the review section of journal.
- The word 'Review' or 'Overview' appears in its title.
- The abstract states that it is a review or survey.

***Thomson Reuters*** is the parent company of a number of subsidiary businesses that produce targeted information products and information processing services. Essentially, ***Thomson Reuters*** is a large company that provides very specialized information tools.



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# Example of Review Paper (1):

E. Levi, R. Bojoi, F. Profumo, H.A. Toliyat and S. Williamson, "Multiphase induction motor drives – a technology status review," IET Electr. Power Appl., 2007, 1, (4), pp. 489–516.

## Abstract

1. Introduction
2. Characteristics of multiphase induction motor
3. Control of variable-speed multiphase induction motor drive
  - 3.1 *Introduction*
  - 3.2 *Modelling of multiphase induction machines*
  - 3.3 *Vector control of multiphase induction machines*
  - 3.4 *Direct torque control*
4. PWM control of multiphase voltage source inverters
  - 4.1 *Introduction*
  - 4.2 *Carrier-based PWM schemes*
  - 4.3 *Space vector PWM for multiphase VSIs*
  - 4.4 *Multiphase multilevel voltage source inverters*
5. Five-phase induction motor drives
  - 5.1 *Introduction*
  - 5.2 *Vector control of five-phase induction motor drives with third stator current harmonic injection*
  - 5.3 *DTC of five-phase induction motor drives*
6. Asymmetrical six-phase induction motor drives
  - 6.1 *Introduction*
  - 6.2 *Vector control of asymmetrical six-phase induction motor drives*
  - 6.3 *DTC of asymmetrical six-phase induction motor drives*
  - 6.4 *Some specific solutions with six-phase induction motor drives*
7. Fault tolerance
8. Multiphase multi-motor drive systems with single inverter supply
9. Instead of conclusion
10. Acknowledgment
11. References

Number of  
References = 147



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## Example of Review Paper (2):

Hyung-Woo Lee, Ki-Chan Kim, and Ju Lee, "Review of Maglev Train Technologies," IEEE Transactions on Magnetics, Vol. 42, No. 7, July 2006, pp.1917-1925, DOI: 10.1109/TMAG.2006.875842.

Abstract

I. INTRODUCTION

II. TECHNOLOGY ASPECTS

A. Levitation

A. *Electromagnetic Suspension (EMS)*

B. *Electrodynamic Suspension (EDS)*

C. *Hybrid Electromagnetic Suspension (HEMS)*

B. Propulsion

1) *Linear Induction Motor (LIM)*

2) *Linear Synchronous Motor (LSM)*

C. Guidance

1) *Using Magnetic Repulsive Force*

2) *Using Magnetic Attraction Force*

D. Transfer of Energy to Vehicle

1) *Low-Medium Speed Operation*

2) *High-Speed Operation*

III. WORLDWIDE MAGLEV TRAIN PROJECTS

IV. CONCLUSION

ACKNOWLEDGMENT

REFERENCES

Number of  
References = 114



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# Example of Review Paper (3):

H. Chen, T. N. Cong, W. Yang, C. Tan, Y. Li, Y. Ding, "Progress in electrical energy storage system: A critical review," Elsevier Science Direct, Progress in Natural Science 19 (2009) 291–312, doi:10.1016/j.pnsc.2008.07.014

## Abstract

### 1. Introduction

### 2. Imperativeness and applications

#### 2.1 Imperativeness

#### 2.2 Application

(1) Generation

(2) Transmission and distribution

(3) Energy service

(4) Renewable energy

### 3. Classification

(1) Electrical energy storage (EES)

(2) Mechanical energy storage

(3) Chemical energy storage

(4) Thermal energy storage

### 4. Description of EES

#### 3.1 Pumped hydroelectric storage

#### 3.2 Compressed air energy storage

#### 3.3 Battery

4.3.1 Lead Acid batteries

4.3.2 Nickel cadmium batteries

4.3.3 Sodium sulphur

4.3.4 Sodium nickel chloride

4.3.5 Lithium ion batteries

#### 4.4 Fuel cell

4.4.1 Hydrogen fuel cell

4.4.2 Direct-methanol fuel cells

4.4.3 Molten carbonate fuel cells

4.4.4 Solid oxide fuel cells

4.4.5 Metal-Air battery





# Example of Review Paper (cont....)

H. Chen, T. N. Cong, W. Yang, C. Tan, Y. Li, Y. Ding, "Progress in electrical energy storage system: A critical review," Elsevier Science Direct, Progress in Natural Science 19 (2009) 291–312, doi:10.1016/j.pnsc.2008.07.014

- 4.5 *Flow battery*
    - 4.5.1 *Vanadium redox battery (VRB)*
    - 4.5.2 *Zinc bromine battery (ZnBr battery)*
    - 4.5.3 *Polysulphide bromide battery (PSB)*
  - 4.6 *Solar fuels*
    - (1) *Solar hydrogen*
    - (2) *Solar metal*
    - (3) *Solar chemical heat pipe*
  - 4.7 *Superconducting magnetic energy storage*
  - 4.8 *Flywheel*
  - 4.9 *Capacitor*
  - 4.10 *Thermal energy storage (TES)*
    - 4.10.1 *Low-temperature TES*
      - (1) *Aquiferous low-temperature TES*
      - (2) *Cryogenic energy storage*
    - 4.10.2 *High-temperature TES*
      - (1) *Molten salt storage and Room temperature Ionic Liquids*
      - (2) *Concrete storage*
      - (3) *Phase change materials*
  - 5. *Assessment and comparison of the energy storage technologies*
    - 5.1 *Technical maturity*
    - 5.2 *Power rating and discharge time*
    - 5.3 *Storage duration*
    - 5.4 *Capital cost*
    - 5.5 *Cycle efficiency*
    - 5.6 *Energy and power density*
    - 5.7 *Life time and cycle life*
    - 5.8 *Influence on environment*
  - 6. *Concluding remarks and perspective*
- References

Number of  
References = 86



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# Example of Review Paper (4):

S. Kahourzade, A. Mahmoudi, H. W. Ping, and M. N. Uddin, "A Comprehensive Review of Axial-Flux Permanent-Magnet Machines," *Canadian Journal of Electrical and Computer Engineering*, Vol. 37, No. 1, Winter 2014, pp. 19-33, [DoI: 10.1109/CJECE.2014.2309322](https://doi.org/10.1109/CJECE.2014.2309322)

Abstract

I. INTRODUCTION

II. AFPM MACHINES TOPOLOGIES

A. *SSSR Machine*

B. *DSSR Machine*

C. *SSDR Machine*

D. *MSMR Machine*

III. AFPM MACHINE DESIGN AND SIZING EQUATION

A. *Sizing Equation*

B. *Design Optimization*

IV. ANALYSIS OF AFPM MACHINE

A. *Electromagnetic Analysis*

B. *Cogging Torque Analysis*

C. *Thermal Analysis*

D. *Mechanical Analysis and Manufacturing*

V. FIELD CONTROL OF AFPM MACHINES

VI. LINE-START AXIAL-FLUX PERMANENT-MAGNET SYNCHRONOUS MACHINE

VII. MATERIALS

VIII. AFPM MACHINE APPLICATION

IX. COMPARISON

X. CONCLUSION

REFERENCES

Number of  
References = 110



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## Example of Review Paper (5):

P. F. Ribeiro, B. K. Johnson, M. L. Crow, A. Arsoy and Y. Liu, "Energy Storage Systems for Advanced Power Applications," Proceedings of the IEEE, Vol. 89, No. 12, December 2001, pp. 1744-1756 (*Invited Paper*).

Abstract

I. INTRODUCTION

II. ENERGY STORAGE SYSTEMS FOR TRANSMISSION AND DISTRIBUTION APPLICATIONS

A. *Superconducting Magnetic Energy Storage (SMES)*

B. *Battery Energy Storage Systems (BESS)*

C. *Advanced Capacitors*

D. *Flywheel Energy Storage (FES)*

III. POWER SYSTEM APPLICATIONS

A. *Integration of Energy Storage Systems Into FACTS Devices*

B. *HVDC Transmission and Distribution Applications*

C. *Power Quality Enhancement With Energy Storage*

IV. COST CONSIDERATIONS

V. CONCLUSION

REFERENCES

Number of  
References = 81



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# Review Paper

- They are the state-of- art survey papers written by experienced professional and consist of a review of technological developments in the subject as proposed by other researchers along-with his/her own observations, analysis and predictions for future. Thus review papers portray a beautiful picture of developments and trend & forecast from past to future.
- Many reputed journals allow review papers by invitation only.  
Ex: IEEE Trans. on Ind. Electronics.
- Some reputed journals publish mostly survey type papers only which are prestigious. Ex: Proceedings of IEEE.





# Review Paper

- Review papers are more like a book which cover most of the technical and non-technical components/aspects of the topic in a logical sequence with adequate explanation.
- In each component, after the basic theory is over, a detailed review of technological developments till date and/or the industry trends are provided.
- Finally, a qualitative and comparative discussion is presented with forecast and scope for further research.





# Review Paper

For new researchers who have just selected a research problem or are in the process of exploratory research to identify a research problem than, Review papers are the most useful document to begin-with.

A new researcher can attempt to present a review paper in a good conference after carrying out exhaustive literature review for a sufficient period of time and gaining a reasonable insight in the topic.





## What, after writing is over?

Now your paper is ready. You can ask your peers or professors to review your paper.

Next is to find the right place to publish it. You can start with national level conferences, which often gets conducted in many universities. Then once you gain a level of confidence, you can proceed to international conferences and journals.

Some IEEE Societies (such as Industry Applications Society) prefer pre-publication as a conference paper before considering it for Transaction. In that way, the basic quality of the submitted paper is assured before peer review.



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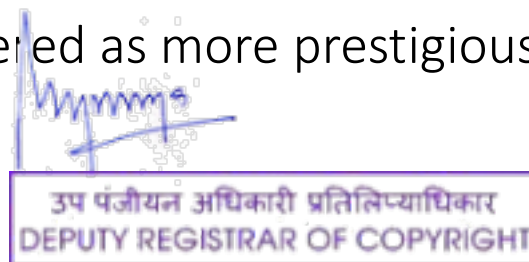


# Where to Publish?

**National Conference:** A conference is the right place for new scholars, since the level of scrutiny is minimal. The conferences may accept papers which details about the comparison of existing technologies, mathematically proven but practically unproven proposals, etc.

**International Conference:** This is a good play-ground for intermediate scholars. It is mostly the same as National Conference but the scrutinization is more.

**Journal:** Journal papers are generally the feathers in the cap of published papers and they are considered as more prestigious than conferences.





# IEEE

## Industrial Electronics Society Conferences

ISIE	Int. Symposium on Industrial Electronics
icSmartGrid	Int. Conference on Smart Grid
DDCLS	Data Driven Control and Learning Systems Conference
SPEEDAM	Int. Sym. on Power Electronics, Drives, Automation and Motion
REDEC	Int. Conf. on Renewable Energies for Developing Countries
DoCEIS	Int. Conf. on Computing, Electrical & Industrial Systems
YEF-ECE	Int. Young Engineers Forum
AIM	Int. Conf. on Advanced Intelligent Mechatronics
CPE-POWERENG	Int. Conf. on Compatibility, Power Electronics & Power Engg.
INES	Int. Conf. on Intelligent Engineering Systems
INDIN	Int. Conf. on Industrial Informatics
VIS	Int. Workshop on Intelligent Systems
SES	Int. Conf. on Ind. Electronics for Sustainable Energy Systems



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# IEEE

## Industrial Electronics Society Conferences

SEST	Int. Conf. on Smart Energy Systems & Technologies
ETFA	Int. Conf. on Emerging Technologies & Factory Automation
AE	Int. Conf. on Applied Electronic
AMC	Int. Workshop on Adv. Motion Control
PEMC	Int. Power Electronics & Motion Control Conference
AEIT	International Annual Conference
ICRERA	Int. Conf. on Renewable Energy Research and Applications
ENERGYCon	Int. Energy Conference
ICEPDS	Int. Conf. on Electrical Power Drive Systems
IECON	Annual Conf. of IEEE Ind. Electronics Society
GPECOM	Global Power, Energy and Communication Conference
IROOS	Int. Conf. on Intelligent Robots and Systems
EA	Int. Conf. on Industrial Electronics and Applications
DES	Power Electronics, Drives and Energy Systems, <i>Jaipur, Dec, 2020.</i>



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# IEEE Publication Recommender

Click on IEEE Publication Recommender, it will take you to:

<https://publication-recommender.ieee.org/periodicals>

Enter the keywords, keywords, title or abstract of your manuscript.

The IEEE Publication Recommender will present to you the best match from amongst 190+ journals and 1800+ conferences for your manuscript.

You may also compare them based on the Impact factor and Submission-To-Publication time before submission.

Once, the journal is identified, go to “IEEE Author Center” for paper template and other details of the journal.

<https://journals.ieeeauthorcenter.ieee.org>

50





# Review Reports

Only a small proportion (5 -10%), are accepted the first time they are submitted, and usually they are only accepted subject to revision. In fact, anything other than simply "reject," is a positive review. These include:

- **Accept:** "Which almost nobody gets"
- **Accept with revision:** "Just make some minor changes"
- **Revise and resubmit:** "They're still interested in your paper"
- **Reject and resubmit:** "Though not as good as revise and resubmit, they still want your paper"

Read the reviews carefully. Read every criticism as a positive suggestion for something you could explain more clearly.





# Revision?

## Don't Panic

- After reading the review for the first time, keep it aside. Later, come back to it and see carefully whether the criticisms are valid and how you can address them.
- You will often find that reviewers make criticisms because they misinterpreted some component of your paper.
- It's unfortunate to have a paper rejected because of misunderstanding, but the good part is that we now know what to correct.
- However, if the criticisms are on the content of the paper than, it may require substantial revision - rethinking of idea, carrying out more tests, or re-analysis.

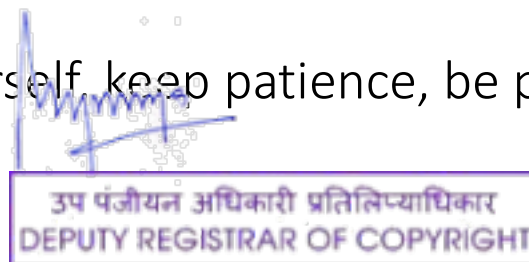




# Rejected?

## Don't Panic

- Its okay, never be afraid of rejection. In good journals and conferences, 70-80% papers get rejected due to less space to accommodate or little time available with reviewers.
- If your paper is rejected, keep trying! Take the reviews seriously and try to rewrite the paper, addressing the reviewer's comments.
- Learn from the comments given by reviewers and try to improve your work and resubmit to some other journal/conference.
- Avoid plagiarism
- Have confidence in yourself, keep patience, be positive.





# Probable grounds for rejection

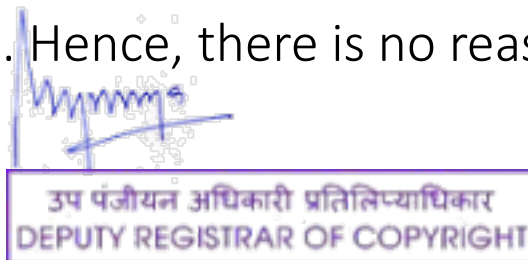
- Material not of archival value.
- Content not of current relevance or interest.
- Poor organization of paper.
- A reviewer of the paper who judges the paper's acceptance may be angry if he sees that his relevant contribution has not been cited in the paper.
- Occasional English error annoys the reviewer of the paper and may be a ground for rejection.





## Probable grounds for rejection

- Unfamiliar symbols in equations, fuzzy and ambiguous expressions have irritated the reviewers.
- Clumsy, unclear figures and extremely small, unreadable labels/scale can also be the ground for rejection.
- Reviewers want you to make major revision.
- Often manuscripts receive negative reviews because reviewers were not able to understand the manuscript. This is authors' fault and not of reviewers.
- Remember, if reviewers have difficulties, then other readers will face the same problem. Hence, there is no reason to publish the manuscript.





# Points to Remember

## Do this...

- Describe in third person.
- Mention the reference of earlier published paper(s) if you are using the information in your paper (may be, your own paper also)
- Use grammatically correct language, spellings, either UK English or US English, not mix.
- Use standard measurement procedures, standard terms, standard methods, standard symbols.
- Use standard values of constants.
- Write complete spellings, not short forms.







# Points to Remember

## Do this...

- Define abbreviations and acronyms the first time in the text, even after they have already been defined in the abstract.
- Revise and rewrite the paper. More you write, better you understand. As you understand better, you can express clearly.
- The most preliminary step of paper writing is "First read other's papers critically", not only for content but for presentation skill also.
- It is always a good idea to prepare an extended manuscript first and then cut it down during iteration to satisfy the length constraint.



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# Journal Formats

Different publications specify different format. The format is mostly related with the following:

- Type and size of font of text
- Number of columns
- Caption styles
- Spacing and indentation
- Style of referencing
- Style of major and minor headings
- Numbering of major and minor headings
- Place for author details, etc.





# RESEARCH ETHICS & METHODS TO AVOID PLAGIARISM



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# Research Ethics

- Primary contributor should be the first author.
- Co-authors should be selected in the order of their magnitude of contribution.
- It is unethical to be a co-author of a paper without making any contribution in the paper.
- It is not ethical to add the name of the senior colleague or boss as a co-author unless they have made contributions.
- Plagiarism of all sort is totally un-ethical.
- Plagiarism is an offence, and multiple publication of the same material is highly unethical.





# Research Ethics

- **False citation:** Information should not be attributed to a source from which it was not obtained.
- **False data:** Data that has been fabricated or altered in a laboratory may not be the plagiarism, it is clearly a form of academic fraud.



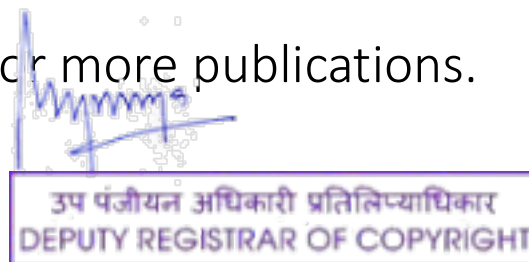


# What is Plagiarism ?

Plagiarism can be defined as the reuse of someone else's prior ideas, processes, results, figures or words without explicitly acknowledging the original author and source.

Whenever we take information from a source, whether that source is published on paper, presented in a lecture or broadcast, or made available online, our readers must know, where the information came from.

**Self-plagiarism/double submission:** The submission of the same or a very similar paper to two or more publications.



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# IEEE Levels of Plagiarism

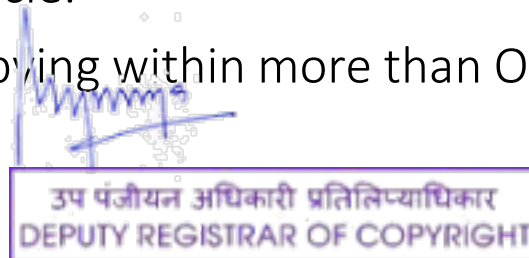
IEEE defines five levels (or degrees) of plagiarism [1]:

## Level 1.

- Uncredited Verbatim Copying of a Full Article
- Uncredited Verbatim Copying of a Major Portion (more than 50%) within a single Article.
- Uncredited Verbatim Copying within more than a single Article by the same authors.

## Level 2.

- Uncredited Verbatim Copying of a Large Portion (greater than 20% and up to 50%) within an Article.
- Uncredited Verbatim Copying within more than One Article by the same author(s).





# IEEE Levels of Plagiarism

## Level 3.

Uncredited Verbatim Copying of Individual Elements (Paragraph(s), Sentence(s), Illustration(s), etc.) resulting in a Significant Portion (up to 20%) within an Article.

## Level 4.

Uncredited Improper Paraphrasing of Pages or Paragraphs.

## Level 5.

Credited Verbatim Copying of a Major Portion of an Article without Clear Delineation.







# Common Knowledge

- Information that is well-known to the average, educated readers. Ex: Pt. Jawaharlal Nehru was the first PM of India.
- Information shared by a cultural or national group, such as the names of famous heroes or events in the nation's history that are remembered and celebrated.
- Knowledge shared by members of a certain field, Ex: transformer works on AC supply.
- However, what may be the common knowledge in one culture, nation, academic discipline or peer group may not be common knowledge in another.





# Plagiarism

Plagiarism is many times unintentional. Often it occurs not because the author is trying to cheat, but because he is unaware, how to incorporate the words and ideas of others in the proper way.



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# Methods of Avoiding Plagiarism

Several options exist for incorporating the words and ideas of others into your own work. As per MIT, they are [2]:

- **Quote directly:** put quotation marks around the words and identify the source.
- **Paraphrase:** put the information into your own words and identify the source.
- **Summarize:** take the key ideas, paraphrase them and identify the source.



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# Quoting

When the words of an expert, authority, or individual are particularly expressive and create impact, they can be quoted. However, quoting all the time is a bad practice.

## When should I quote?

- When language is particularly vivid or expressive.
- When exact wording is needed for technical accuracy.
- When the words lend weight to an argument.

## How do I show I am quoting?

- Name the source in an introductory phrase.
- Use quotation marks around the words.
- Cite the source appropriately.





# Quoting

(Example 1):

## *Original Text*

*Martin Gilens and Benjamin I. Page, "Testing Theories of American Politics: Elites, Interest Groups, and Average Citizens," Perspectives of Politics, American Political Science Association 2014, 12(3), pp: 564-581, doi:10.1017/S1537592714001595.*

Multivariate analysis indicates that economic elites and organized groups representing business interests have substantial independent impacts on U.S. government policy, while average citizens and mass-based interest groups have little or no independent influence.

## *Quoted Text*

*Omar Wasow, "Agenda Seeding: How 1960s Black Protests Moved Elites, Public Opinion and Voting," American Political Science Review, Cambridge Univ. Press, 21 May 2020, page 1 of 22, doi:10.1017/S000305542000009X.*

Looking at effects on United States government policy, Gilens and Page (2014) find "mass-based interest groups and average citizens have little or no independent influence" (564).

69





# Quoting

(Example 2):

*Original Text*

*William A. Gamson and Gadi Wolfsfeld, "Movements and Media as Interacting Systems," Annals of the American Academy of Political and Social Science, Vol. 528 (1), Citizens, Protest, and Democracy (Jul., 1993), pp. 114-125.*

If we flip the question of need around, social movements often make good copy for the media. They provide drama, conflict, and action; colorful copy; and photo opportunities.

*Quoted Text*

*Omar Wasow, "Agenda Seeding: How 1960s Black Protests Moved Elites, Public Opinion and Voting," American Political Science Review, Cambridge Univ. Press, 21 May 2020, page 1 of 22, doi:10.1017/S000305542000009X.*



Gamson and Wolfsfeld (1993) note, "social movements often make good copy for the media. They provide drama, conflict, and action; colorful copy; and photo opportunities" (115–7).

70



# Quoting

(Example 3):

*Original Text*

*Ahmedabad Mirror, (2017, Dec. 12), "Manmohan Singh breaks silence, Narendra Modi remains circumspect," <https://ahmedabadmirror.indiatimes.com/ahmedabad/cover-story/manmohan-singh-breaks-silence-narendra-modi-remains-circumspect/article-show/62029311.cms>*

Modi ridiculed the Congress's claim of EVM tampering and refuted Rahul Gandhi's allegation of crony capitalism. In an unusual step, he took the names of Adani, Ambani, Nirma, Zydus, Lalbhai and Sarabhai and even certain newspaper proprietors to say that whatever he was doing did not in any way benefit these "rich" people but only the poor of the country.



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# Quoting

(Example 3):

*Quoted Text*

*Aseema Sinha, Andrew Wyatt, "The Spectral Presence of Business in India's 2019 Election," Studies in Indian Politics, 7(2), 2019, pp.247-261, DOI: 10.1177/2321023019874914.*

For example, Modi was observed at a relatively small meeting in Ahmedabad in December 2017 as follows: 'In an unusual step, he took the names of Adani, Ambani, Nirma, Zydus, Lalbhai and Sarabhai and even certain newspaper proprietors to say that whatever he was doing did not in any way benefit these "rich" people but only the poor of the country' Ahmedabad Mirror (2017).



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# Quoting

## Why the quotings in above examples are correct?

- The writer has introduced the quotation with own words.
- He has named the source in an introductory phrase.
- He has indicated where the exact words of the source begin and end by using quotation marks.



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# Paraphrasing

It means taking the words of another source and restating them, using our own vocabulary. In this way, we keep the meaning of the original text, but do not copy its exact wording.

## How to paraphrase?

- Use synonyms for all words that are not generic. Some words like world, food, or science are very basic and it is difficult to find a synonym.
- Change the structure of the sentence.
- Change the voice from active to passive and vice versa.
- Change clauses to phrases and vice versa.
- Change parts of speech.





# Paraphrasing

(Example 1...):

## *Original Text*

*The Economic Times, (May 04, 2019), "Against crony capitalism, not corporates: Rahul Gandhi," <https://economictimes.indiatimes.com/news/politics-and-nation/against-crony-capitalism-notcorporates-rahul-gandhi/articleshow/69169966.cms?from=mdr>*

Congress president Rahul Gandhi has disputed the notion that he is anti-business, calling it an “absurd idea”. He, however, told ET in an interview that he has a problem with “crony capitalism” of the kind he claimed was followed in awarding the offsets contract in the Rafale deal. “I want to be very clear — there are large numbers of Indian corporates who India should be absolutely proud of and protect. You can’t build a modern nation without corporates, so it’s an absurd idea that Rahul Gandhi doesn’t like corporates. It’s crazy.”





# Paraphrasing

(...Example 1):

## *Paraphrased Text*

Aseema Sinha, Andrew Wyatt, "The Spectral Presence of Business in India's 2019 Election," *Studies in Indian Politics*, 7(2), 2019, pp.247-261, DOI: 10.1177/2321023019874914.

Rahul Gandhi and Congress began to allege that the Rafale contract was an example of crony capitalism. He met with new entrepreneurs in lower profile meetings and gave a well-publicized interview in early May 2019 in which he explained that business was essential for the nation, and he was singling out a mere handful of wrong doers (*The Economic Times*, 2019). The point to emphasize is that Gandhi attacked crony capitalism and not business more generally.



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# Paraphrasing

## Why the paraphrasing in above example is correct?

- The writer did not copy the original words nor the structure except words like crony, interview, contract etc. which are the generic terms i.e., terms that are commonly used to present the concept, Sometimes, it is difficult to find synonyms for them.
- The writer has ensured the meaning of the original passage.
- The writer has mentioned the source details in the text.





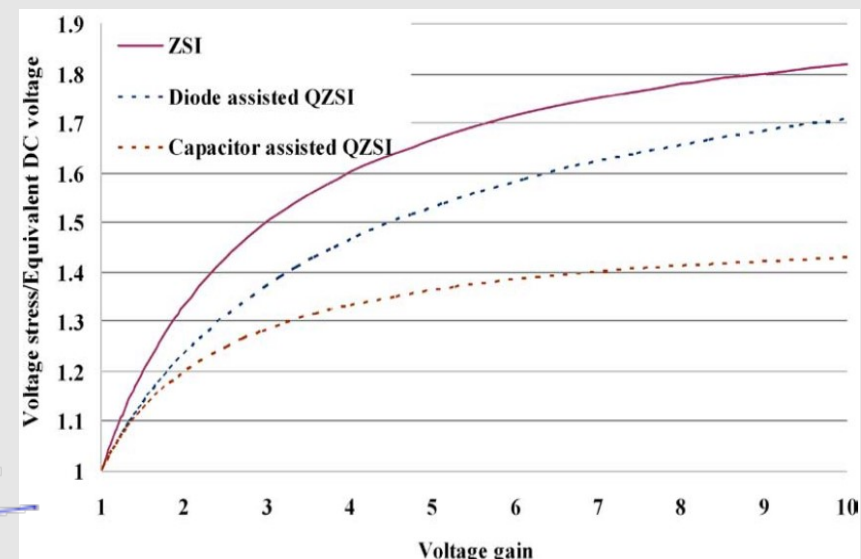
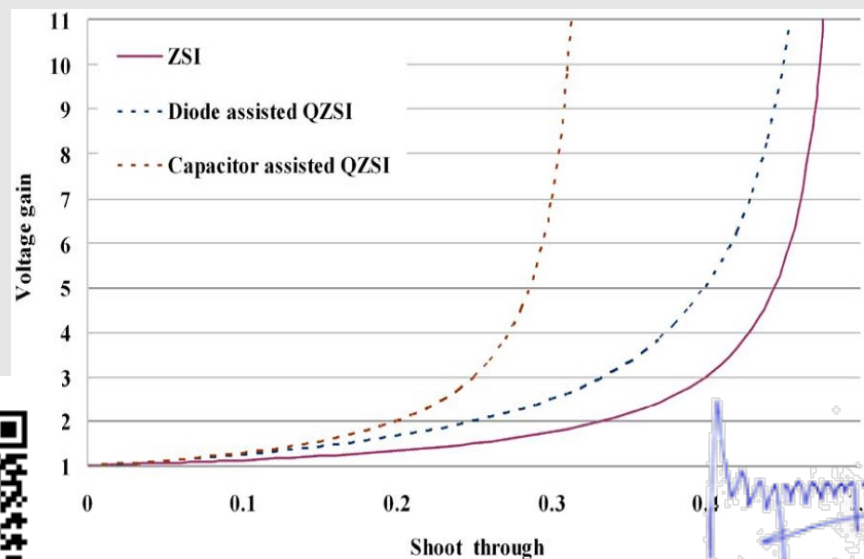
# Paraphrasing

(Example 2....):

*Original Text*

C. J. Gajanayake, F. L. Luo, H. B. Gooi, P. L. So, and L. K. Siow, "Extended-Boost Z-Source Inverters 2010," *IEEE Trans. on Power Elec.*, Vol. 25, No. 10, Oct. 2010, pp. 2642- 2652.

Higher current stress is resulted from the peak current that appears during the shoot-through. Selecting a suitable modulation method that would distribute the shoot-through current among the three arms of the inverter bridge can prevent this, but switching loss could be a concern.





# Paraphrasing

(....Example 2):

*Paraphrased text*

*S. Xiao, T. Shi, X. Li, Z. Wang and C. Xia, "Single-Current-Sensor Control for PMSM Driven by Quasi-Z-Source Inverter," IEEE Trans. on Power Electronics, TPEL-Reg-2018-04-0733, DOI 10.1109/TPEL.2018.2875533.*

However, in practical application, the upper limit for duty cycle during shoot through voltage vector  $d_{sh}$  should be set according to particular specifications of the components applied in the drive system and desired operation performance of the drive system, because with increase of  $d_{sh}$ , voltage and current stress of the switches will be larger and the efficiency and stability of the  $qZSI$  will deteriorate [28].



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# Paraphrasing

In engineering and technology papers usually, the material taken from referred papers include data, expression, statistics or diagram/graph and therefore, do not need much paraphrasing like literary journals.

## (Example 3):

*E. Levi, R. Bojoi, F. Profumo, H.A. Toliyat and S. Williamson, "Multiphase induction motor drives – a technology status review," IET Electr. Power Appl., 2007, 1, (4), pp. 489–516.*

For the 'block' representation of currents used in [11],  $k_{dv}$  is given by,

$$k_{dv} = \sin \frac{v\pi}{2n} / \left( \frac{v\pi}{2n} \right)$$

It is shown in [11] that  $\bar{J}_s^{qv}$  is non-zero only for values of  $n$  that are related to  $q$  and to the phase number  $n$  by the expression,

$$v = q - 2ni \quad i = 0, \pm 1, \pm 2, \pm 3, \pm 4$$







# Using Expression

## (Example 4):

*S. Kahourzade, A. Mahmoudi, H. W.Ping and M. N. Uddin, "A Comprehensive Review of Axial-Flux Permanent-Magnet Machines," Canadian Journal of Electrical and Computer Engineering, Vol. 37, No. 1, Winter 2014, pp.19-33.*

If the resistance and leakage inductance of the stator are negligible, the output power of the electrical machine is calculated as

$$P_{\text{out}} = \eta \frac{m}{T} \int_0^T e(t) i(t) dt = \eta m K_p E_{pk} I_{pk}$$

where  $i(t)$  is the phase current,  $m$  is the number of machine phases,  $e(t)$  is the phase air-gap EMF,  $\eta$  is machine efficiency,  $K_p$  is the electrical power waveform factor,  $T$  is the period of one EMF cycle, and  $E_{pk}$  and  $I_{pk}$  are the peaks of phase air-gap EMF and of current, respectively [24].





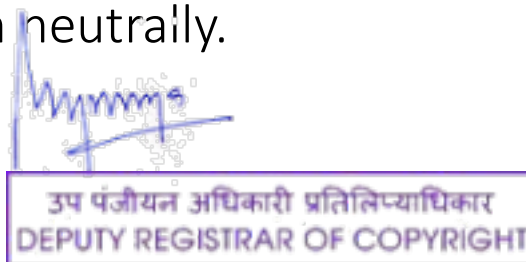
# Summarizing

A summary is a synthesis of the key ideas, restated in our own words. Whenever we summarize, we must be careful not to copy the exact wording of the original source.

## How do I summarize?

A good summary,

- identifies the writer of the original text.
- synthesizes the writer's key ideas.
- presents the information neutrally.



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# Summarizing

(Example 1):

*S. Kahourzade, A. Mahmoudi, H. W. Ping and M. N. Uddin, "A Comprehensive Review of Axial-Flux Permanent-Magnet Machines," Canadian Journal of Electrical and Computer Engineering, Vol. 37, No. 1, Winter 2014, pp.19-33.*

Yang *et al.* [27] presented an optimal design of an AFPM machine using sensitivity analysis and a magnetic circuit model. The preliminary motor shapes were obtained by optimizing the cost function. Finite element analysis (FEA) was performed on the electromagnetic, thermal, and dynamical characteristics. The considered objectives include the output torque, efficiency, and torque density.

Why is this a good summary?



The summary identifies the writer, and the source, and restates the key ideas using original wording. The summary reports on the referred work, but reports it neutrally.

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# Summarizing

## (Example 2):

*S. Xiao, T. Shi, X. Li, Z. Wang, and C. Xia, "Single-Current-Sensor Control for PMSM Driven by Quasi-Z-Source Inverter," IEEE Transactions on Power Electronics, TPEL-Reg-2018-04-0733, DOI: 10.1109/TPEL.2018.2875533.*

To overcome or relieve the MDZ problem, extensive researches have been made and various techniques have been published. Some researchers propose measurement-vector insertion methods (MVIM) and prove them effective [7], [8]. Reference [7] eliminates the MDZ by applying three active voltage vectors for measurement intervals only when needed during each fundamental frequency cycle. Reference [8] improves the voltage vector injection style to further reduce the voltage and current harmonics caused by the injected signals. Other researchers focus on modifying the pulse width modulation (PWM) strategy to reconstruct three-phase currents in MDZ [9]-[11]. In [9] a hybrid modulation strategy is adopted to extend current reconstruction range and to reduce the output current distortion at the same time.

84





# Summarizing

## (Example 3):

*S. B. Bodkhe, M. V. Aware, J. G. Chaudhari and J. G. Agrawal, "Speed estimator for induction motor drive based on synchronous speed tracking," Sadhana, Indian Academy of Sciences, Vol. 40, Part 4, June 2015, pp. 1241–1256.*

To overcome the problems of pure integrator in OLE, application of an adaptive integration algorithm based high pass filter is suggested in Zerbo *et al* (2005). In Bhattacharya & Umanand (2009), the rotor position is estimated by integrating the rotor back-electromotive force.

The observers use internal feedback loop together with the machine model to improve the flux estimation accuracy and robustness against parameter variations. Model reference adaptive system (MRAS) based observers, which are close-loop algorithms, are inherently nonlinear in both the error processed by the adaptive controller and in the mathematical model modified by the feedback (Kojabadi *et al* 2005; iadoue *et al* 2009; Orłowska-Kovárska *et al* 2010).

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# Summarizing

## (Example 4):

*E. Levi, R. Bojoi, F. Profumo, H.A. Toliyat and S. Williamson, "Multiphase induction motor drives – a technology status review," IET Electr. Power Appl., 2007, 1, (4), pp. 489–516.*

More recently, detailed modelling of an n-phase induction machine, including the higher spatial harmonics, has been reported in [19], whereas specific case of a five-phase induction machine has been investigated in detail in [20, 21].

## Why are these a good summary?

These one-line summaries identify the original source and synthesizes the key idea/work. A short summary like this might appear in the literature review of research paper in which the student gathers together the findings or opinions of scholars on a given subject.





# Softwares for similarity Check before Paper Submission

- Ithenticate
- Turnitin
- Turnitin writecheck

([en.writecheck.com](http://en.writecheck.com))





# References

- [1] IEEE Publication Services and Products Board Operations Manual 2020, Section 8.2.4 (D).
- [2] Academic Integrity at the Massachusetts Institute of Technology: A Handbook for Students, August 24, 2012, [web.mit.edu/academicintegrity](http://web.mit.edu/academicintegrity)







*Thanks!*

Keep safe  
Keep healthy



(Sanjay Bodkhe)

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