UNIVERSITI
KEBANGSAAN
MALAYSIA

National University of Malaysia

Academic Writing Strategy for Impacted Journal

Prof. Dr. Mamun Bin Ibne Reaz

Department of Electrical, Electronic & Systems Engineering

Universiti Kebangsaan Malaysia

The Abdus Salam
International Centre
for Theoretical Physics

Why do you write research article?

- To let other people, know about your invention
- To share your knowledge
- To promote yourselves and to fulfill the organization requirement
- Develop a good reputation

When to start?

General principles

- **Scientific writing does not have to be boring**
- **Learning to write is learning to edit yourself**
- **Know the readers and the journal**
- **Know how people read**
    - reading the abstract
    - skimming the intro
    - reading the intro-methods transition
    - looking at the figures
    - skimming the discussion

Journal listing and ranking

- **ISI Listed Journal**
  - Most reliable and authentic
  - Impact factor
  - Four (4) quartile ranking
    - Q1, Q2, Q3 and Q4
  - Paid or without pay
  - Need certain time to be included
  - Can be withdrawn from the list if failed to fulfill the criteria
  - Acceptable by every world-class university
- **SCOPUS Listed Journal**
  - Mostly not reliable
  - Paid or without pay
  - No ranking
  - Some are acceptable but mostly not acceptable by world-class university
- **SJR : Scientific Journal Rankings**
  - Not accepted by any world-class university

Type of articles

- **Research paper**
  - Long paper (more than 5 pages till 30 pages)
  - Letter (1 to 3 pages)
  - Short communication (3 to 5 pages)
- **Review paper**

Structure
(Research Article)

- Title
- Author's name and affiliation
- Abstract
- Keywords
- Introduction
- Methodology
- Results and Discussion
- Conclusions
- Acknowledgement
- Reference

Title

- Should perfectly highlight your principal work

  "An 8.72 μW low-noise and wide bandwidth FEE design for high-throughput pixel-strip (PS) sensors" - **OK**

  "Design and Analysis of UHF Micropower CMOS DTMOST Rectifiers" – **OK**

  "Forearm Orientation and Muscle Force Invariant Feature Selection Method for Myoelectric Pattern Recognition" - **OK**

  "A Novel EMG Signal Analysis to Determine Muscle Fatigue" – **NOT OK**

- Avoid ornamental words

  Reliable, scalable, high performance, robust, low-complexity

Author's name and affiliation

- You should use the same abbreviated name in all articles that you are going to write
- Now a days, people use to communicate through email. Thus, be sure about your correct email address
- Put your affiliation and address correctly
- **Each journal has different style thus follow the author's guide**

Abstract

- Abstract is the most important part of the article to attract the readers to go through the article
- The abstract should be as concise as possible but tell the gist of whole story in **one paragraph**
  - So that reader feels to read the whole story

Abstract

- As a summary of work done, it is always written in **past tense**
- An abstract should stand on its own, and **not refer to any other part** of the paper such as a figure or table
- Focus on summarizing results - **limit background information** to a sentence or two, if absolutely necessary
- What you report in an abstract must be **consistent** with what you reported in the paper

Abstract

- **I always write the abstract last**
- **No of words**
  - 50 words (letter)
  - 50 – 100 words (short communication)
  - 150 – 250 words (long paper)
- **Four sentences (for long paper / short paper)**
  - State the problem (*global followed by local*) ➢ Introduction – 1 to 2 lines
  - Say what solution you propose ➢ Methodology – 2 to 3 lines
  - Say what your solution achieves ➢ Results & Discussion – 1 to 2 lines
  - Say what follows from your solution ➢ Conclusion – ½ to 1 line

Abstract
(long paper)

Modern Radio Frequency (RF) transceivers cannot be imagined without high-performance (Transmit/ Receive) T/R switch. Available T/R switches suffer mainly due to the lack of good trade-off among the performance parameters, where high isolation and low insertion loss are very essential. In this study, a T/R switch with high isolation and low insertion loss performance has been designed by using Silterra 0.13µm CMOS process for 2.4GHz ISM band RF transceivers. Transistor aspect ratio optimization, proper gate bias resistance, resistive body floating and active inductor-based parallel resonance techniques have been implemented to achieve better trade-off. The proposed T/R switch exhibits 0.85dB insertion loss and 45.17dB isolation in both transmit and receive modes. Moreover, it shows very competitive values of power handling capability (P1dB) and linearity (IIP3) which are 11.35dBm and 19.60dBm, respectively. Due to avoiding bulky inductor and capacitor, the proposed active inductor-based T/R switch became highly compact occupying only 0.003mm^2 of silicon space; which will further trim down the total cost of the transceiver. Therefore, the proposed active inductor-based T/R switch in 0.13µm CMOS process will be highly useful for the electronic industries where low-power, high-performance and compactness of devices are the crucial concerns.

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(long paper)

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- State the problem (*global followed by local*) - *Ok*

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(long paper)

In this study, a T/R switch with high isolation and low insertion loss performance has been designed by using Silterra 0.13µm CMOS process for 2.4GHz ISM band RF transceivers. Transistor aspect ratio optimization, proper gate bias resistance, resistive body floating and active inductor-based parallel resonance techniques have been implemented to achieve better trade-off.

- Say what solution you propose - *Ok*

Abstract
(long paper)

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- Say what your solution achieves - *Ok*

Abstract
(long paper)

Therefore, the proposed active inductor-based T/R switch in 0.13µm CMOS process will be highly useful for the electronic industries where low-power, high-performance and compactness of devices are the crucial concerns.

- Say what follows from your solution - *Ok*

Abstract (letter & short paper)

Design and analysis of ultrahigh-frequency (UHF) micropower rectifiers based on a diode-connected dynamic threshold MOSFET (DTMOST) is discussed. An analytical design model for DTMOST rectifiers is derived based on curve-fitted diode equation parameters. Several DTMOST six-stage charge-pump rectifiers were designed and fabricated using a CMOS 0.18-μm process with deep n-well isolation. Measured results verified the design model with average accuracy of 10.85% for an input power level between -4 and 0 dBm. At the same time, three other rectifiers based on various types of transistors were fabricated on the same chip. The measured results are compared with a Schottky diode solution.

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- Say what your solution achieves - *Ok*

Keywords

- Why keywords needed?
  - To search for a similar kind articles
- The most common generic words that focuses your work should be used
  - CMOS analog circuits, power quality, fuzzy logic, electromyography

Introduction

- If ‘Abstract’ is interesting, then the reader will go through the ‘Introduction’
- If ‘Introduction’ fail to keep the readers interest, then the paper is lost
- Nearly every reader will at least skim through the introduction

Introduction

- The 1st paragraph should start with a general introduction followed by a global problem
- The purpose of the 1st paragraph is to interest the reader in the paper

In low voltage applications like RFID transponder, EEPROM is used as a storage device. RFID is the technology for automated identification of products, objects or human. RFID system requires EEPROM memory for high-speed read/write operation. At present, a key design aspect for RFID tag IC is the low power dissipation and low cost [1-3]. Therefore, in RFID transponders embedded non-volatile memories (NVM) like **EEPROM** play a vital role. In fact, EEPROM has become very significant alternative for any application requiring NVM over the last few years [4].

Introduction

- The 2nd paragraph should start with a local problem
- The purpose of the 2nd paragraph is to introduce the research problem for the subsequent paragraph

Reading/writing process is the most significant factor for low-power RFID transponders EEPROM [5-6]. The power of the **EEPROM SA** must be low to increase RFID reading speed [7]. In EEPROM, the read access time is a key factor to determine the read path, which is strongly affected by the SA. One of the main challenges for new generation NVM is to develop a robust and high-speed read circuit with a low VDD. As the power supply becomes lower, the design of a high-speed low-power SA becomes very critical [8-9]. Moreover, the reliability of the SA has to be improved to make consistent operations of RFID transponders.

Introduction

- The 3rd paragraph is pin-pointing the local problem including research problem
- The purpose of the 3rd paragraph is to pin-point the research area and research scopes

Generally, the current sensing method is widely employed to design a conventional SA in EPROM read operation. Due to the advanced speed and reliability features, current type SA has been used more frequently than voltage type SA [9]. However, conventional current sensing method has the drawbacks of higher power dissipation and larger time for sensing. Moreover, current type SA requires extra control logic to prevent incorrect read out current. As a result, current type SA is unacceptable to low power ap-plications like RFID transponders. Consequently, lower current and power consumption made **voltage type SA** superior to current type SA, which is compatible in RFID tag EEPROM [9-10].

Introduction

- The 4th paragraph is to show the research by other researchers and their shortcomings
- The purpose of the 4th paragraph is to open the door of highlighting contribution through comparison

To attain reduced sensing current, numerous voltage-type SA circuits have been designed for NVM. However, at lower VDD the reading consistency issues and higher reading current is experienced by the researchers [11]. In 2009, Liu et al. proposed voltage type SA with low cost, low power and reliability. The circuit is implemented using SMIC 0.35µm CMOS process [12]. In VDD = 3.3 V the charging time is 35 ns for the voltage type SA. In addition, the highest average current consumption during the sense period is 40µA. However, the lowest VDD required for the design was 1.4 V. However, the voltage claimed by Liu et al. is not as low as VDD for RFID transponder.

Introduction

- The 5th paragraph is to propose the work and methods together with the features and advantages of the methods that you are going to use
- Describe your work in brief with key achieved advantages i.e. state your contributions

In this research, a low voltage SA for EEPROM memories in RFID tag is designed to attain the lower reading current/power. This design overcomes the limitations of the conventional current SA. Low voltage sensing method has been used in this design to achieve better circuit performance and decreasing sensing time. To reduce the reading current/power an additional capacitor is used in this design. The proposed low voltage-type SA is designed in CEDEC 0.18 μm CMOS process. Simulations results show that the modified low voltage-type SA performs better than the SA designed by Liu et al. [12].

Introduction (letter)

- It will follow almost same structure like the ‘Introduction’ for long paper but in brief
- There will be no paragraph of describing the similar works with their disadvantages

Introduction

- Never put the organizational structure of the article

> This paper is organized as follows. The design methodology is described in Section II. Section III describes in detail the implementations of neural network, while Section IV is dedicated to presenting the implementation of fuzzy logic. Section V describes the results and discussion. Finally, Section VI draws the conclusion and discusses future works.

This is an example of bad INTRODUCTION

Introduction (wrap up)

- Describe the problem so that readers know the context of the article
- Describe the similar works with their disadvantages
- Describe the features and advantages of the methods that you are going to use
- Describe your work in brief with key achieved advantages i.e. state your contributions

Introduction
(few things to note…..)

- All works should be properly referenced except yours (your early work also should be referenced)
- There should have a **flow from one paragraph to the next paragraph**
- Be brief
- Do not leave the reader to guess what your contributions are!

Methodology

- Describe the methodology that you are adopting in detail
- State the assumption clearly (if any)
- Justify all the stated assumptions
- Use diagrams, flowcharts and clear (high resolution) illustrations to make the description more understandable

Methodology

- Use appropriate equations but avoid deriving the equation
  - Too many equations make the article less interesting
- Each equation must be numbered consecutively
- Avoid detail description of known algorithms such as ANN, FL, DWT etc
- Methodology is not a set of instructions thus avoid all explanatory information and background

Methodology (letter)

- It will follow almost same structure as the ‘Methodology’ for long paper but in brief (avoid excessive words to describe)
- Usually there is a limitation of using certain numbers of figures and illustrations

Results and discussion

- Results should be clear, convincing, and general and free from interpretations or opinions
- It is better **to write the data source (if any) at the beginning** of this section
- Summarize your findings in text and illustrate them, if appropriate, with figures and tables
- Presenting the results graphically or through table helps to understand
- Use past tense when you refer to your results

Results and discussion

- Your introduction makes claims
  - Disadvantages of other works
  - Advantages of your work
- The methodology part of the paper provides evidence to support each claim
- Check each claim in the introduction, identify the evidence, and forward-reference it from the claim
- Evidence can be analysis and comparison, theorems, measurements, case studies

Results and discussion

- The most important part of the discussion is comparison among various methods
  - How do the results compare with earlier work?
  - What is new and significant?
- Comparison should be on apple to apple
  - The same data should be used with other methods to compare your results
- **Never claim any sort of superiority of your work without any proof from your result and comparison**

Results and discussion

- Each figure must be numbered consecutively and complete with caption (caption goes under the figure)
- Each table must be titled, numbered consecutively and complete with heading (title with description goes above the table)
- Each figure and table must be sufficiently complete that it could stand on its own, separate from text
- For the same data, do not use both table or graph

Results and discussion
(letter)

- It will follow almost same structure as the ‘Result and Discussion’ for long paper
- **There will be no comparison study**

Conclusion

- State the principal object of your work
- State the achieved results (only the final outcome)
- State the benefits that can be achieved from the acquired final outcome
- Suggest future research from the end point of your research
- **Here you should not present any new information**

An improved design and a comparative study of low voltage SA circuit using a voltage sensing method is presented in this research. The modified circuit has been de-signed by using the CEDEC 0.18-µm CMOS embedded EEPROM process. In this research, the bidirectional con-duction between the drain and source of MOS transistors is used to sense the stored voltage (‘0’/‘1’) at the floating gate transistors. According to the performance evaluation results, it has been proven that the circuit can work under a low voltage range from 1 V to 2.6 V. Moreover, the required current dissipation during read period for the proposed design is lower than the design of Liu et al. Furthermore, the measured results confirm that this low voltage SA is free from the power delineation caused by the temperature change. Additionally, the circuit size reduced significantly by using small transistors and capacitors.

Acknowledgement

- In this section, you can acknowledge those who helped conducting the research including financial support

Example 1:

The authors wish to thank Tenaga Nasional Research and Development Centre, Malaysia, for providing valuable assistance in obtaining power disturbance field data from the various substations throughout the country.

Example 2:

The authors would like to express sincere gratitude to the Ministry of Science, Technology, and Innovation of Malaysia for providing fund for the research under eScienceFund grant (project no. 01-01-08-SF0029).

References

- There are two types of reference styles are being used
  - A numbered list of references

    [1] Name, Title, Publisher name, Vol (if any), Issue (if any), Page no., Date (month and year for journal and date for conference, Place (for conference)

    Note: the reference should be cited in the text in numbers i.e. [1], [2]…..
  - A author list of references

    Same as above but chronologically on authors first/last name

    Note: the reference should be cited in the text by author's name i.e. (Ali et. al., 2007)

References

- Usually journal citation is more stronger than citation from conference proceedings
- Avoid citing unpublished thesis, internal report and private correspondence
- Try to put webpage reference as little as possible

Structure
(Review Article)

- Title
- Author's name and affiliation
- Abstract
- Keywords
- Introduction
- ~~No Methodology~~
- ~~No Results~~
- Key researches on the topic
- Discussion
- Conclusions
- Acknowledgement
- Reference

Title

- Should perfectly highlight your principal review work
- Usually review article cited more than research article
  - You need to make title such that it sounds like a review rather than technical article

- Techniques of EMG Signal Analysis: Detection, Processing, Classification and Applications.
- Detection and Processing Techniques of FECG Signal for Fetal Monitoring
- Image Compression System for Mobile Communication: Advancement in the Recent Years
- Advances in Signal Processing and Artificial Intelligence Technologies in the Classification of Power Quality Events: A Survey

Abstract

- The abstract is almost like research article, but it will rather give a guideline instead of result.

Electromyography (EMG) signals can be used for clinical/biomedical applications, Evolvable Hardware Chip (EHW) development, and modern human computer interaction. EMG signals acquired from muscles require advanced methods for detection, decomposition, processing, and classification. The purpose of this paper is to illustrate the various methodologies and algorithms for EMG signal analysis to provide efficient and effective ways of understanding the signal and its nature. We further point up some of the hardware implementations using EMG focusing on applications related to prosthetic hand control, grasp recognition, and human computer interaction. A comparison study is also given to show performance of various EMG signal analysis methods. This paper provides researchers a good understanding of EMG signal and its analysis procedures. This knowledge will help them develop more powerful, flexible, and efficient applications.

Key Researches on the Topic

- Download at least 150 articles based on the keywords
- Scan each article and keep only which are related (at least 70 articles)
- Read each article and note down the following:
  - Citation of the article
  - Key research method and findings
  - Advantages
  - Disadvantages

Key Researches on the Topic

- Complete the same for all 70 articles
- Then append all and make a complete story
- The review can be based on HISTORY or can be based on the popular BASIC METHODS

Discussion

- The most important part of the review article is discussion
- Your discussion should be based on all the review that you have made
- From your expert analysis you will give a future direction on the review topic

Structure
(Conference Article)

- Title
- Author's name and affiliation
- Abstract
- Keywords
- Introduction
- Methodology
- Results and Discussion
- Conclusions
- Acknowledgement
- Reference

Structure
(Conference Article)

- Conference article can be an idea only
- Conference article is the preliminary results of a research
- Even if you have the complete result, please do not put all the results in the conference article to avoid the duplication in publishing to journal

Reviewers

- First, editor scan the article and if find suitable then assign the reviewers
- Most articles usually reviewed by 2 to 5 external reviewers from the same field
- Reviewers mainly look for the research contribution (with proof) in the article
- Verdict based on democracy, if it ties then Editor have a vote to make the decision

How to Make Responses

- Try to understand every single comments that has been given by the reviewer.
- Though the comments are presented in descriptive way but try to figure out the number of questions from every paragraph of the description.
- Once questions are figured out, give answer for every single question.
- Show your extreme politeness in your responses even though the questions are not appropriate.

How to Make Responses

- Always try to give answer in detail rather than only YES or NO.
- Remember that the reviewer will feel comfortable to get the answer from the RESPONSE rather opening the manuscript again to understand your response.
- Your response should reflect in the manuscript thus you need to revise the article accordingly.

How to Make Responses

Reply to the Reviewers' Comments

1. **Title:** The title is quite general and could be improved by including the most significant detail that is unique to the authors' proposal.

Reply: The title is changed to "Learning Temporal Patterns of Residents' Activity interval in Smart Homes Using Normal Distribution" which was "Stochastic Analysis of Smart Home User Activities" previously. Now the title reflects that our proposal is a *temporal pattern learning algorithm* which learns *residents' activity interval* using *normal distribution* and applicable for *smart homes*. The current title is more compact, specific and represents unique contribution of proposed methodology and findings.

2. **Abstract:** The abstract can be improved by including a few specific data results for greater impact on the readers.

Reply: There are two specific contributions of this proposal. One is a temporal interval algorithm, which exhibits 88.3% to 95.3% prediction accuracies for different ranges of mean and standard deviations when tested with practical smart home data. Another finding is that smart homes residents' activity interval follows normal distribution, which was merely an assumption previously. Both findings are highlighted in the abstract for greater impact on the readers.

Thank You