

## Session 6: Writing Review Papers/Articles

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## What is a review article/paper?

- ❖ A critical and constructive analysis of the literature in a specific field through **summary, classification, analysis and comparison**.
- ❖ A scientific text relying on previously published literature or data.
- ❖ Normally new data from the author's experiments are not presented.



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## What is the function of a review article?

- ❖ to **organize and evaluate** information from numerous literature sources
- ❖ to identify **patterns and trends** in the specific research area
- ❖ to recognize the **research gaps**
- ❖ to recommend new **research direction**



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## Why PhD Candidate Should Write Review Paper?

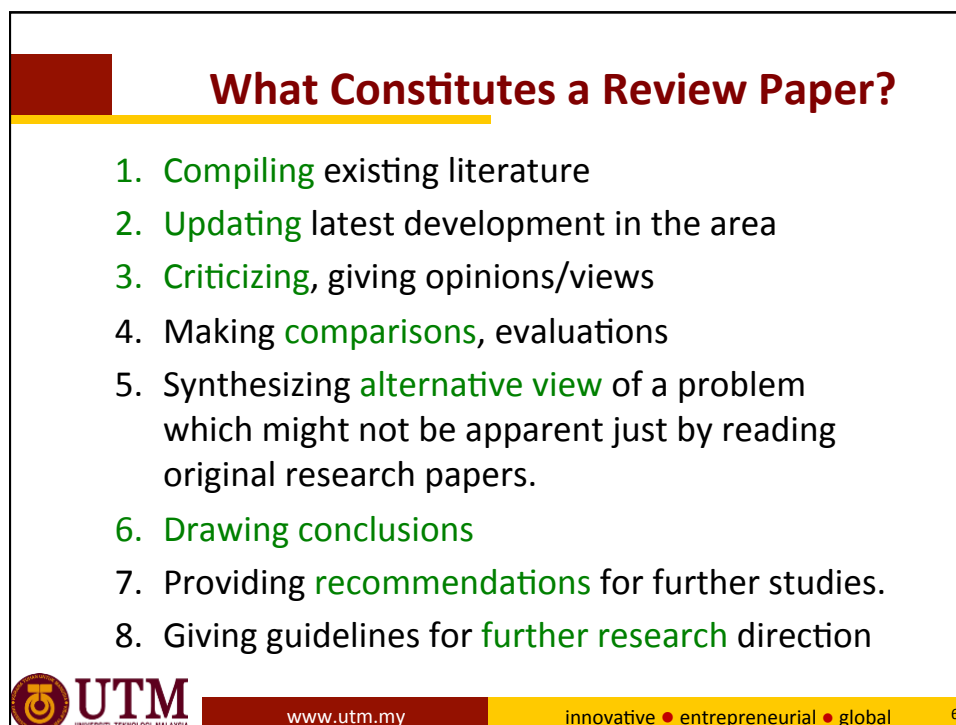
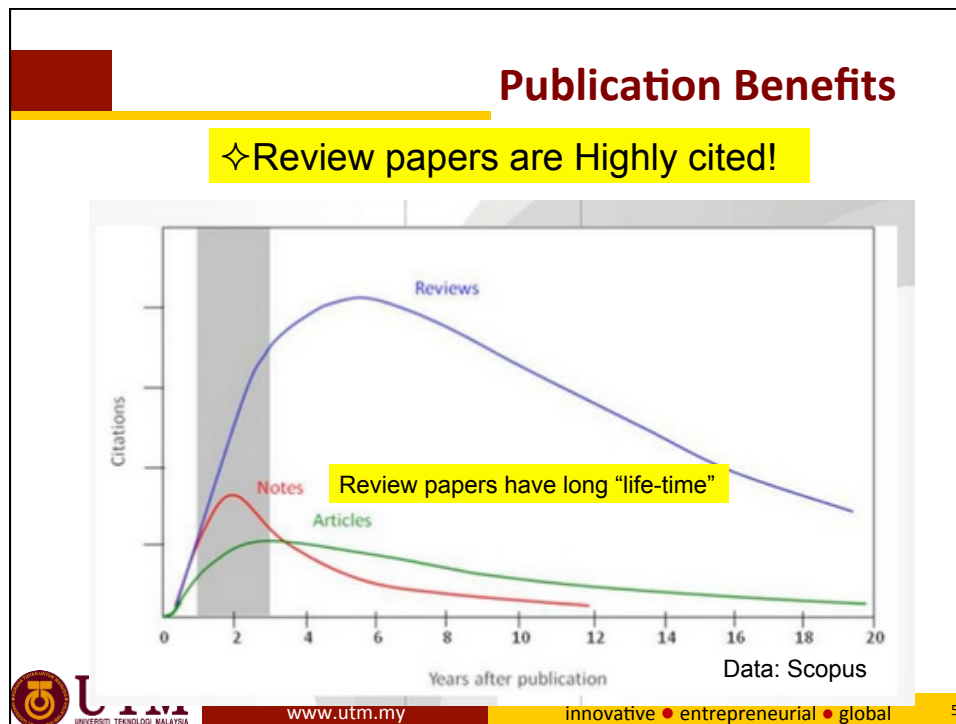
- ❖ Instill discipline in **organizing information**
- ❖ Able to **formulate hypotheses** early
- ❖ Keep up-to-date with development in the respective research field
- ❖ Improve critical thinking
- ❖ The written material form a large part of of the literature chapter of the thesis.



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## Narrative Review Paper

**Historical type:** Tracking the progress of a field of research over time.

Renewable and Sustainable Energy Reviews 48 (2015) 710–725



Lightning monitoring system for sustainable energy supply: A review



Muhammad Abu Bakar Sidik<sup>a,c,\*</sup>, Hamizah Binti Shahroom<sup>a</sup>, Zainal Salam<sup>b,c</sup>,  
Zokafle Buntat<sup>a</sup>, Zainuddin Nawawi<sup>c</sup>, Hussein Ahmad<sup>d</sup>, Muhammad 'Irfan Jambak<sup>c</sup>,  
Yanuar Zulardiansyah Arief<sup>a</sup>



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## Narrative Review Paper

**Theory/model type:** Review based on the introduction of new theory or model in a specific field of research.

Applied Energy 154 (2015) 500–519



Review

Cell modelling and model parameters estimation techniques for photovoltaic simulator application: A review



Vun Jack Chin<sup>a,b</sup>, Zainal Salam<sup>a,b,\*</sup>, Kashif Ishaque<sup>c</sup>

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## Narrative Review Paper

- **State-of-the-art Review:** Investigation based on the most current research for a given topic

### Examples:

“Recent development on digital control for motor drives”

“Current trends on the application of Space Vector Modulation for power converters”



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## Best Evidence Review (Critical Review)

- Selected methods are “redo” to make way for “fair” comparisons.
- Example:



Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

Solar Energy 85 (2011) 1768–1779

SOLAR  
ENERGY

[www.elsevier.com/locate/solener](http://www.elsevier.com/locate/solener)

A critical evaluation of EA computational methods for Photovoltaic cell parameter extraction based on two diode model

Kashif Ishaque, Zainal Salam\*, Hamed Taheri, Amir Shamsudin



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## Critical Evaluation

- ❖ There are over 30 methods to compute the PV cell parameters using two diode model
- ❖ Ten methods using soft computing; from these, five utilizes Evolutionary Algorithm (EA)
- ❖ If based on the published work, fair comparison cannot be made due to different experiment set-up, conditions, rating etc.
- ❖ To conclude which of the five method is the best, critical evaluation is made by re-doing all the five the experiments, based on same conditions.



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## Selecting Journal for Review Article

- Specialized journals for review papers only
- General Journal
  - Most titles accept review papers
  - However, recently for submission criteria is more strict.
  - For example Applied Energy requires proposal on the article and authors CV.
  - IEEE Transactions do not normally accept review papers.




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## Specialized: by invitation only



21<sup>st</sup> Annual Green Chemistry & Engineering Conference  
Making Our Way to a Sustainable Tomorrow  
JUNE 13-15, 2017  
RESTON, VA

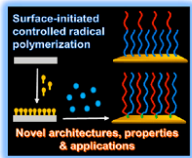
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# CHEMICAL REVIEWS

## 2015 Impact factor: 37.369



**Surface-initiated controlled radical polymerization**

**Novel architectures, properties & applications**

Surface-Initiated Controlled Radical Polymerization: State-of-the-Art, Opportunities, and Challenges in Surface and Interface Engineering with Polymer Brushes

Justin D. Zipp, Nurye Canasoglu Akman, Piotr Morys, Jian Wang, John Moraes, and Harm-Anton Klok\*



Editor-in-Chief: Sharon Hammes-Schiffer


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Total Citations	Impact Factor	Articles Published
148,154	37.369	261

2015 Journal Citation Reports® by Thomson Reuters, 2016

- ❖ Authors must be well-known in the field.
- ❖ Have written extensively on the subject matter
- ❖ Proposal (summary of article) is first reviewed.
- ❖ Very strict selection



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## Specialized Review Journal

Home > Books & Journals > Renewable & Sustainable Energy Reviews

# Renewable & Sustainable Energy Reviews

Editor-in-Chief: **L. Kazmerski**  
View full editorial board

Supports Open Access

## 2015 Impact Factor: 6.789



ISSN: 1364-0321

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## Checklist Before Writing

### 1. Perform a comprehensive search

Questions to be asked.

- ✓ How **old** is the latest review paper?
- ✓ If recent, any significant progress since then? **You can cover material after the last review.**
- ✓ Is there any **similar** review paper?
- ✓ Is there exist, your can investigate **different aspect** of the topic.

Example:

Existing: "A review of MPPT methods for PV systems"

Proposed: "MPPT for PV system: A review on the **economic impact** of the solutions".



## Checklist

### 2. Define your goals.

- Define the **boundary** of the paper. **Try to focus.**
- Starting from a wide topic, narrows until 50-100 important papers are reviewed. That should be a good starting point.
- It is too easy for a review to **sprawl** as you cover more and more tangentially related materials.

Example:

Original: "A review of **digital control** for dc-dc power converter"

Revised: "A review of **artificial intelligence control methods** for dc-dc power converter" (**somewhat more focused**)





## Being Critical!

- It is not sufficient to say X did this, and Y did that (i.e. collecting and compiling materials only)
- You should be able to tell where/how their studies **compliment one another**, and **where/how they contradict**.
- Able to **criticize and give opinion**
- The use of Tables are a great way of comparing the attributes of different studies.



## Something from your own pocket!

- Able to use your **OWN expert judgment** on certain critical points
- Offer new explanations for discrepancies
- Future outlook
- Future challenges
- Critical Evaluation

### Expectation of reader:

The authors of review papers are supposed to be **experts** in the field.

So, they are expected to have some **insight** on the issues being discussed



## Structure

- Title
- Abstract
- Keywords
- Intro
- The review material itself
- **Discussion**
- Conclusion
- References



## Discussions

- A review paper is **not only a summary** of the information you read for your review.
- You are required to **analyze, synthesize, and interpret** the information you read in some meaningful way.
- It is not enough to simply present the material you have found.
- You must go **beyond that, i.e.** explain its **relevance and significance** in different context **(Something from your own pocket!)**



# EXAMPLES



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## Title: Example

Renewable and Sustainable Energy Reviews 54 (2016) 34–47



ELSEVIER

Contents lists available at ScienceDirect

Renewable and Sustainable Energy Reviews

journal homepage: [www.elsevier.com/locate/rser](http://www.elsevier.com/locate/rser)



Electric vehicles charging using photovoltaic: Status and technological review



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## Abstract: Example

The integration of solar photovoltaic (PV) into the electric vehicle (EV) charging system has been on the rise due to several factors, namely continuous reduction in the price of PV modules, rapid growth in EV and concerns over the effects of greenhouse gases. **Despite the numerous review articles published on EV charging using the utility (grid) electrical supply, so far, none has given sufficient emphasis on the PV charger.** With the growing interest in this subject, **this review paper summarizes and update all the related aspects on PV-EV charging, which the power converter topologies, charging mechanisms and control for both PV-grid and PV-standalone/hybrid systems.** In addition, **the future outlook and the challenges that face this technology are highlighted.** It is envisaged that the information gathered in this paper will be a valuable one-stop source of information for researchers working in this topic.



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## Introduction: How to convince the reviewers

Numerous works have been published on the EV charging using grid, including several excellent review papers, for example [12, 13]. **However, so far there is no review that compiles and updates the works related to charging using solar energy—despite the growing interest in this topic.**

From the survey, **it is found that the number of papers on this issue has risen significantly over the last decade, hence the impetus for this review.**



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## Another Example

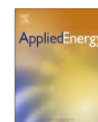
Applied Energy 154 (2015) 500–519



Contents lists available at ScienceDirect

Applied Energy

journal homepage: [www.elsevier.com/locate/apenergy](http://www.elsevier.com/locate/apenergy)



Review

Cell modelling and model parameters estimation techniques for photovoltaic simulator application: A review



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## Abstract

This review paper compiles, summarizes and deliberates about thirty important works on the modelling and parameters estimation of photovoltaic (PV) cells that are used for PV simulation. It provides the broad concepts, features, governing equations, as well as highlights the advantages and drawbacks of three main PV cell models, namely the single diode  $R_s$ ,  $R_p$  and the two diode. Since the literature on PV simulation is very large and dispersed, an effort to systematically gather, review and manage all these information into a single cohesive and comprehensive document is crucial. New entrants in this research field may find it difficult to piece the information together and to understand the bigger picture; this paper should become a convenient one-stop reference to guide them to achieve that goal. It is envisaged that this work will be also useful for more experienced researchers and practitioners to update their knowledge in the latest development in the area of PV modelling and simulation.



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## The convincing part (Introduction)

The number of scholarly publications related to PV modelling are dispersed in numerous journals, conference proceedings, standards and other classified/non-classified documents. **So far, there is no effort to systematically gather and to manage all these information into a cohesive and comprehensive manner, such that it may become a one-stop reference point for researchers.** Thus, an effort to conduct a comprehensive as well as broad review seems to be overdue.

Hence this work is carried out to compile, review and discuss the works on PV modelling and parameters estimation methods. **It gathers approximately seventy important papers—particularly the ones published within the last decade or so, by providing the broad concepts, features, governing equations, as well as highlights their respective advantages and drawbacks.**



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## More examples on to convince reviewers

In a short span of time, the body of knowledge related to this subject has grown tremendously. **Clearly, it is difficult to keep track with the literatures unless a single reference with concise and accurate summaries of the various MPPT schemes is made available.**

The most recent reviews [4,5] are carried out over five years ago, and obviously progress since then has been considerable. **Therefore, it seems appropriate at this juncture to provide a comprehensive and up to date review of the subject.**

In particular, the MPPT for partial shading conditions is not fully documented; justifiably, **there is a critical need to carry out this exercise even more.**

Kashif Ishaque, **Zainal Salam**, "A Review of Maximum Power Point Tracking Techniques for PV System for Uniform Insolation and Partial Shadings Conditions", *Renewable & Sustainable Energy Review*, 19 (2013), pp. 475-488.



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## Nice Phrases for Review Paper (1)

- So far, there has been **very few work that review** the....
- In addition, **no paper has comprehensively review**...
- **Surprisingly**, the review of the subject has not been **thoroughly carried out**...
- Surprisingly, the review has not been comprehensively undertaken and **it is unclear to what extent** ...
- **In contrast to the previous review paper**, there is much less information about effects of ...



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## Cohesive Phrases for Review Paper (2)

- A **systematic review** of the subject is crucial in understanding the...
- Despite the importance of the subject, there appears to be a **lack of a comprehensive review** of...
- Although there exists several excellent review papers on the subject, the focus is not on...
- Due to the importance of the work, and the lack of a critical review on it, it is high time for a **comprehensive**...



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## Hints

- ❖ Check some "good" review papers, particularly about the subject.
- ❖ A good review paper presents the recent progress with citation to many other related publications.
- Study several review paper form he same journal you are submitting to know the "style", structure and format. **Maybe the journal imposes unique style.**



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