

**Title in English without Abbreviation**

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*Lastname, N.<sup>1</sup>, Lastname, G.<sup>2</sup> and Lastname, R.<sup>1,\*</sup>*

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\*Corresponding author E-mail: .....

**Abstract**

The instructions below are specially directed for author(s) who wish to submit an article to the 52<sup>nd</sup> NGRC. The article must be clear and its format must be consistent with the other papers included in the conference proceedings. Use this document as a template if you are using Microsoft Word. Otherwise, use this document as an instruction to prepare. Thank you for your contribution. We are looking forward to receiving your article. **(The abstract should not have more than 200 words)**

**Keywords:** 3-5 key words

Abstract and all contents use  
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**1. Introduction**

Abstract and key words are typed in English using a 16-point font and formatted justified on both sides (Justified), type the title "Abstract" in bold **The entire article is limited to 6 - 10 pages A4 paper size (including references).**

This document is intended as a research paper writing guide. It defines both the format and guidelines for typing the article. This will be the same format used in the preparation of the full research paper report (Proceedings). After the article has been considered by the judging panel for the article to be presented at the 52<sup>nd</sup> NGRC meeting. Author(s) must provide and submit a completed article in a "Camera-ready" manner, where errors that may occur, which will not be corrected, therefore, in order to control the quality and to make the documentation as quick as possible. Author(s) should prepare the article strictly in this format and guidelines.

## 2. Objective(s) of the study

The full article should contain the article title, author's name and affiliation / institution, abstract, keywords, full content of the article, acknowledgment and references. In the contents, it could be divided into main topics, subtopics, and possibly subtopics. All Font used for typing on all parts must be made up of BrowalliaUPC with size 16, using single space between lines, and each page does not require a page number.

### 2.1 Size and page set up

The size of the paper used for typing is standard A4 (8 ½ x 11 ½ inches). In addition to the title section, the contents must be typed by using the page settings as follows:

Top and left edge of paper            2.5     cm.

Bottom and right edge of paper    2.0     cm.

The overall length of the article should be about 6-10 pages

### 2.2. Title of the article and description of the author(s).

To type the **title** of the article, the author(s) can type using English letters with 18-point characters in bold. For each word in the English title, capitalize the first letter (except for the noun prefix: articles, the conjunctions: coordinate conjunctions, and the preposition: prepositions unless these words are used for the title). For author(s)' name, please type by using font size of 16 points, while the affiliation (department, university / institution and province) using font size of 14 points; and using raised numbers (Superscript) after the author's name. Additionally, the contact should be specified (Corresponding author) by typing an asterisk (\*) after the name, including the e-mail address for corresponding author. The title and author's details are printed in the middle of the page.

## 3. Methods

Type in 16-point letters and format them on the left, Including, no line spacing between paragraphs (No need to tap the line when new paragraphs). For headings in this section include: research design, population and sample, research instruments, research ethics, data collection, and data analysis.

## 4. Results and discussions

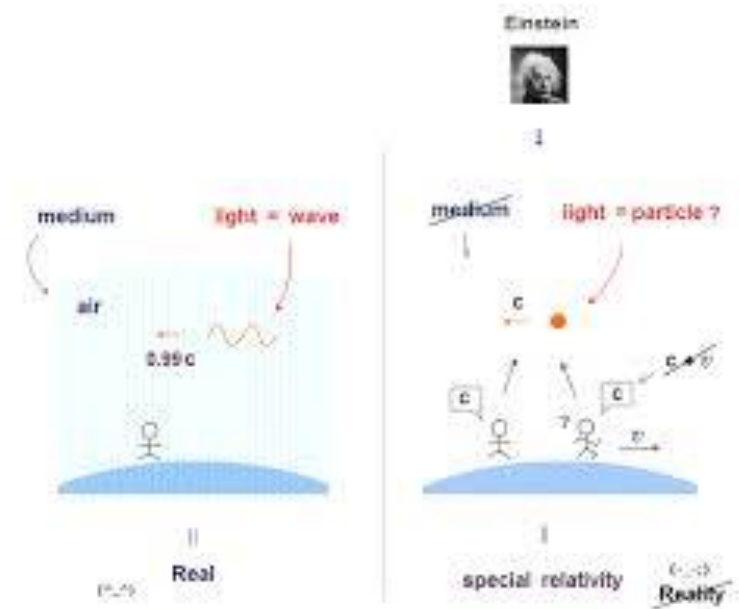
Describe the research results which are not reported in a Table or Figure so as not to be redundant.

### 4.1 Figures and tables

Figures/Images and tables can be presented after the text mentioned, or they can be presented after the end of the topic or presented on a new page. The dimensions of the figures and tables should not exceed the column frame. However, if figures and tables are large, they can be placed to cover the entire page. But this must not exceed the page setup framework set out in section 2.1.

Both the figure and the table must be captioned, with the Figure description printed under the figure and in the center of the page. If any figure is divided into 2 parts, the description of each part is indicated using a small letter in parentheses in sequence, such as (a) and (b). The table caption is typed above the table and on the left.

By sorting figures and tables, separate the order from each other. The number of figures and tables in the article shall be specified as pictures and tables, such as Figure 1, Figure 2, Table 1, Table 2, etc.



**Figure 1** Einstein's Theory of Relativity

**Table 1** Estimates of the general inflation rate of various research agencies (unit: percent)

Research unit	Year	
	2019	2020
1. Goldman Sachs	4.2	3.9
2. Kasikorn Research	3.9	4.2
3. DBS	3.8	3.8
4. TMB	3.4 – 4.0	n.a.

5. Deutsche Bank	3.5	3.5
6. KTB	3.5	3.5
7. SCB EIC	3.4	3.8

#### 4.2 Equation

To write an equation, please write it in the middle of the column and specify the order of the equation using numbers printed in parentheses, such as (1), (2), etc.

$$EU = \dot{m}_{s,i} h_i - \dot{m}_{s,o} h_o \quad (2)$$

Where is the useful energy kJ / s

$h_i$  is the enthalpy of incoming steam, kJ / kg

$h_o$  is the enthalpy of the outlet steam, kJ / kg

#### 5. Conclusions and recommendations

Write a summary of the research findings and the benefits that they will bring. Research strengths and weaknesses as well as providing suggestions for further research

#### 6. Acknowledgments

If you want to write an acknowledgment of appreciation to the person or organization involved, you can write this. It is after the main body of the article and before the reference material.

#### 7. References (Vancouver style)

- [1] Mei, V.C. Chen, F. C.and Mathiprakasam, B. (1989). Comparison of thermoelectric and vapor cycle technologies for groundwater heat pump application. *ASME Journal of Solar Energy Engineering*, Vol. 11, pp.353-357.
- [2] Rowe, D.M. and Bhandari, C.M. (1983) Modern thermoelectrics Reston Publishing Company, Reston V. A.
- [3] Heenan P. and Mathiprakasam, B. (1992) Development of two-men TE microclimate conditioner for use in army ground-vehicles. *Proceeding of the 11<sup>st</sup> International Conference on Thermoelectrics*, Arlington USA, 7-9 October 1992, pp. 181-184.
- [4] Lertsatitthanakorn, C. Sarachitti, R. Hirunlabh, J. Khedari J.and Scherrer, H. (2002) Numerical Investigation of the performance of free convected thermoelectric air conditioner. *Proceeding of the 19<sup>th</sup> International Conference on Thermoelectrics*, Cardiff, UK, 20-23 August 2000, pp. 481-485.

[5] Lertsatitthanakorn, C. Hirunlabh, J. Khedari J. and Daguinet, M. (2000) Experimental performance of a ceiling-type free convected thermoelectric air conditioner. *International Journal of Ambient Energy*, Vol. 23(2). pp. 59-68.

[6] Lertsatitthanakorn C. (2003) Cooling performance of thermoelectric water cooler. *Naresuan University Journal*, Vol. 11(2) pp. 1-9.

[7] Chen, K. and Gwilliam, S. B. (1996) An analysis of the heat transfer rate and efficiency of TE (thermoelectric) cooling systems. *International Journal of Energy Research*, Vol. 20, pp. 399-417,

### **Other examples**

#### **Journal**

[1] Waszkiewics, S.D., Tierney, M.J. and Scott, H.S. (2009). Development of coated, annular fins for adsorption chillers, *Applied Thermal Engineering*, vol. 29(11-12), August 2009, pp. 2222 – 2227.

#### **Proceedings**

[1] Kato, S. and Widiyanto, A. (2001). Environmental Impact Assessment of Various Power Generation Systems, paper presented in *the Tri-University International Joint Seminar & Symposium 2001*, Chiang Mai, Thailand.

#### **Report**

Division of Technical Services and Planning, Chiang Mai City Municipality (2003). *Annual Report 2003*.

#### **Book, Chapter**

[1] Myers, R.H. and Montgomery, D.C. (1995). *Response Surface Methodology: Process and product optimization using designed experiments*, John Wiley & Sons, New York.

[2] Goswami, Y.D., Kreith, F. and Kreider, J.F. (1999). *Principles of Solar Engineering*, 2<sup>nd</sup> edition, ISBN: 1-56032-714-6, Taylor & Francis, Philadelphia.

#### **Website**

##### **เว็บไซต์**

[1] Department of Alternative Energy Development and Efficiency, Ministry of Energy, Thailand (2004). *Statistic Data*, URL: <http://www.dede.go.th>, access on 24/04/2010.

[2] Spath, P.L. and Mann, M.K. (2002). *Life Cycle Assessment of a Natural Gas Combined–Cycle Power Generation System*, NREL/TP-570-27715, National Renewable Energy Laboratory, Colorado, USA, URL: <http://www.doe.gov>, access on 24/04/2010.

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