

**UNIVERSITI TEKNOLOGI MARA**

**The Reliancy of Temperature with Incoming Solar  
Radiation Value**

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Thesis submitted in fulfillment

Of the requirement for the degree of

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## AUTHOR'S DECLARATION

I declare that the work in this thesis/dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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## **ABSTRACT**

Incoming solar radiation is the primary sources of energy on the earth. The energy from insolation is radiated in all the directions space through the short waves. The amount of insolation that received into the earth surface far less than is radiated from the sun, it is because the distance from earth to the sun and earth like a small size. There are many affected influenced from the incoming solar radiation. However, temperature change decoupled from the still declining insolation and fluctuated around relatively cold medium condition. The aim of this research is to identify the effect of temperature corresponding to incoming solar radiation. To achieve the aim, the objectives of this study are is to explore the insolation pattern on the earth surface based on LiDAR derived topographic, to identify the LST of study area using Landsat 8 imaginary and to explore the relation between insolation value and temperature. In this study several data is used such as point cloud data (LiDAR) and Landsat image. To accomplish the objectives, this software; Arc GIS and ERDAS are used. For digital data, point cloud data (LiDAR) are used to generate Digital Surface Model (DSM) and Triangular Irregular Network (TIN) format within the Arc GIS setting will be visualized before insolation pattern and Landsat Image will be used to produce Land Surface Temperature (LST) for the research region. The study area of this research study is Taman Melati, Kuala Lumpur. The primary result of this study is the temperature map, insolation map and the relationship between temperature and insolation. Finding from this research it will be contribute to optimize the usage of renewable energy resources such as solar energy which will subsequently add to sustainable development.

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