# EFFECT OF CARBON EMISSION ON LAND SURFACE TEMPERATURE (LST)

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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

Carbon Dioxide ($CO_2$) is one of the factors that contribute to the greenhouse gasses (GHG) as it become the issues to the environment. Electricity is the main sources of power consumption for the building and the sources of carbon dioxide production. The aims of this research is to investigate the relationship between carbon emissions by building electricity on Land Surface Temperature (LST) towards Urban Heat Island (UHI) in Hang Tuah Jaya District, Melaka in year 2015, 2016 and 2017. The LST value (ºCelsius) is retrieve from the Landsat 8-OLI/TIRS satellite imagery by using radiance method following (El-hattab et al., 2017; Jeevalakshmi et al., 2017; Latif, 2014; Rushayati et al., 2016) processing by modeler in ERDAS Imagine 2014. Then the total of carbon dioxide emission from electricity is calculate by using the carbon factor as stated in the "MYCarbon GHG Reporting Guidelines" by Ministry of Natural Resources and Environment (NRE) Malaysia in 2014. The carbon factor use in this research is 0.741. The correlation of carbon dioxide and land surface temperature is identify by using linear regression data analysis in Microsoft Excel 2013. The value of R and $R^2$ will determine the strongest of the relationship and shown the goodness fit of the model obtain. In year 2015 the carbon dioxide release to the atmosphere is 33% for Hang Tuah Jaya District only. It shown that carbon dioxide from electricity is not the main factors that affecting increment of land surface temperature.

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