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ESTIMATION OF TOTAL SUSPENDED SOLID (TSS) USING LANDSAT 8 OLI

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Thesis submitted in fulfillment
of the requirements for the degree of
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Faculty of Architecture, Planning and Surveying

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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

The irresponsible discharge to the river becomes major issues and it cause pollution in the river. The Department of Environment (DOE) was use six parameters to calculate the water quality such as Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Ammoniacal Nitrogen (NH3-N), Suspended Solids (SS), and PH. However, eroded materials entering water body will be suspended and accumulated. Suspended Materials or Total Suspended Solid (TSS) will increase the turbidity of water, which can affect the quality of water. Remote Sensing technology can be used to estimate Total Suspended Solid (TSS). The objective of this study was 1) to determine the suitable bands for TSS estimation. 2) To estimate spatial distribution of TSS using selected band. The method used for modelling the TSS using correlation analysis and regression analysis. The data used is the empirical modelling single band of visible, NIR and SWIR of Landsat 8 OLI and field data collection conducted by Department of Environment (DOE). In conclude, the results revealed that mapping the distribution and estimated value of TSS in Klang River can be performed more suitable in band 3. This is because, the Standard Error (SE) of predicted TSS value is 10.24 mg/L lower from another band.

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