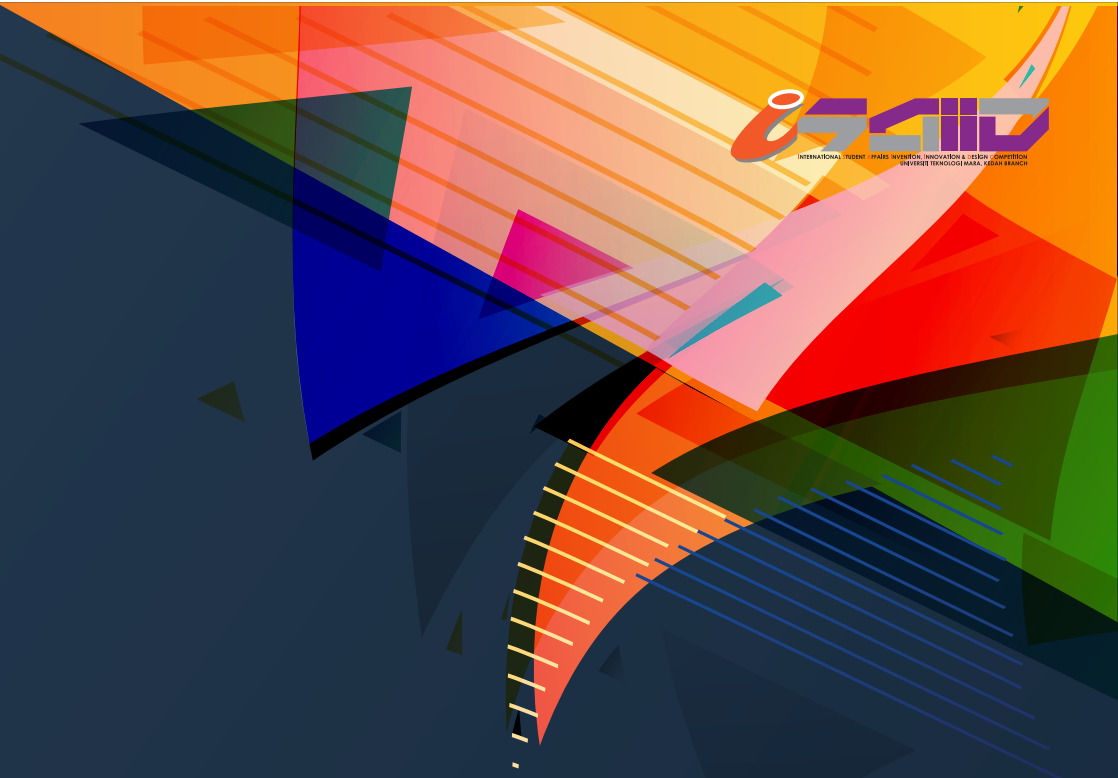

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AUTOMATED & INNOVATIVE SURFACE CRACK DETECTION & LENGTH ESTIMATION TECHNIQUE FOR INFRASTRUCTURE INSPECTION WORK

Syahrul Fithry Senin, Juhaizad Ahmad, Mohd Ikmal Fazlan Rosli, Amer Yusuff, Rohamezan Rohim, Kay Dora Abdul Ghani & Suhailah Mohamed Noor

Faculty of Civil Engineering, Universiti Teknologi MARA, Cawangan Pulau Pinang, Permatang Pauh, Penang

syahrul573@ppinang.uitm.edu.m

The current surface crack detection and length estimation during infrastructure inspection work is initially conducted by the visual inspection method. The accuracy of this method on accessing the crack feature property is significantly depend on various factors including the level of experience of the inspector. As a result, the assessment of such cracks by inexperienced inspector will arise varying results. This method also suffers from the time-consuming nature that contributes to substantial operational cost on evaluating the surface crack especially for large scale work. Therefore, an innovative technique that manipulating the Digital Image Processing was developed on detecting and estimating the surface crack length on infrastructure elements using camera. The thresholding algorithm was developed for the purpose of image processing using the MATLAB software. Using this technique, the surface cracked area on infrastructure can be detected appropriately from a certain camera distance and the crack length was estimated with small errors ranging from 0.5 to 4.62 % from the actual crack length.

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