The correlation between Dynamic Modulus and Resilient Modulus is shown in Fig.5 Dynamic Modulus and Resilient Modulus Correlation. The correlation for Dynamic and resilient Modulus using linear regression is positive linear. It means that the reduction of Dynamic Modulus will affect the reduction of the Resilient Modulus.

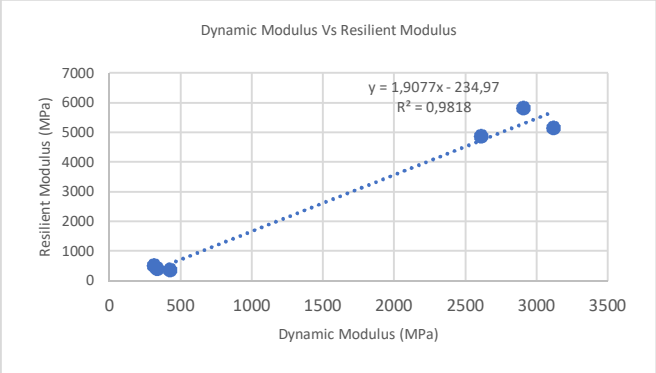

Fig. 5 Dynamic Modulus and Resilient Modulus Correlation

R2 can interpret the goodness of fit for the relationship of Resilient Modulus and Dynamic Modulus. The value of goodness of fit is $R^2 = 0.98$ (approximately equal to 1). This indicates that Resilient Modulus and Dynamic Modulus have a strong correlation (very high). The linear equation calculated from the laboratory test for the relationship between Resilient Modulus and Dynamic Modulus using linear regression is y = 1.9077x - 234.97, where the x-axis is Dynamic Modulus (MPa), and the y-axis is Resilient Modulus (MPa). For every 1 point, increasing the point of Dynamic Modulus will result in Resilient Modulus to increase around 1.9077. The laboratory test for the result proves that it approaches the theory with a strong correlation with the goodness of fit 0.98, and the formulation is y = 1.9077x - 234.97.

IV. Conclusions

SBS polymer's addition gives the better resistance on the Dynamic Modulus value at a high temperature (45°C) and low frequency (0,01 Hz and 0,1 Hz). The calculation of Dynamic Modulus using the Witczak equation has a good correlation to the laboratory test results. The correlation equation obtained was y = 1.7254x + 808.23, where y is the Dynamic Modulus from Witczak equation and x is Dynamic Modulus from laboratory test results with value of $R^2 = 0.98$. The Dynamic Modulus test results were smaller than the Resilient Modulus in almost all of the test temperature variations, except for the AC-WC with 3% SBS mixture. Moreover, the ratio of Resilient Modulus values between laboratory test (UMATTA) and the Nottingham method gave an average value of 1.30 at 20°C and 1.47 at 45°C. While the average ratio for all temperature variations was 1.36. The relationship between Dynamic Modulus and Resilient Modulus is linear (positive) with the formulation y = 1.9077x - 234.97 where y is Resilient Modulus, and x is Dynamic Modulus.

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