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Reusing Clay Based Spent Media Filter to Modify Trinidad Asphaltic Materials

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Abstract - *The disposal of spent filter media derived from the food processing industry which comprises of spent bleaching clay, diatomaceous earth and an organic (oily component), poses an environmental threat due to the current disposal method being employed. Previous studies conducted in Trinidad and Tobago reusing waste materials similar in nature to the components of spent filter media as an additive for bituminous road paving applications suggest that the waste spent filter media may also improve the mechanical and rheological properties of the modified bituminous binder sand and provide an alternative, environmentally sustainable method for disposal of this waste. The results of this study showed that modifying Trinidad Lake Asphalt (TLA) and Trinidad Petroleum Bitumen (TPB) with spent filter media resulted in changes in the rheological properties of the blends, demonstrated in the deviations in the material's stiffness (G*) and elasticity (δ). The optimum dosages to obtain highest stiffness and elasticity and lowest temperature susceptibility was found for modified TLA and TPB blends containing 1% and 2% spent media filter content respectively.*

Keywords**:** Complex shear modulus; phase angle; spent media filter; rheology; Trinidad Lake Asphalt, Trinidad Petroleum Bitumen.