

<p>(12) MALAYSIAN PATENT</p>	<p>(11)</p>
<p>(21) Application No. : PI2020005769 (30) Priority Data :</p> <p>(51) Classification, INT CL :</p>	<p>(56) Prior Art :</p> <p>(72) Inventors : KHAIRIL AZMAN BIN MASRI, MUZAMIR BIN HASAN, RAMADHANSYAH PUTRA JAYA, MAZLAN ABU SEMAN, ABDUL RAHIMI BIN ABDUL RAHMAN</p> <p>(73) Patent Owner : UNIVERSITI MALAYSIA PAHANG (UMP) UNIVERSITI MALAYSIA PAHANG (UMP) 26600 Pekan Pahang Malaysia</p> <p>(74) Agent : MUHAMMAD HAZIF AZLAN BIN ZIAUDIN AHAMED TERAJU IP SDN BHD, NO. 7, JALAN BJ/30, BAYU COURTYARD, TAMAN BALAKONG JAYA, , 43300 Seri Kembangan Selangor, Malaysia</p>
<p>(54) Title : A MODIFIED ASPHALT BINDER COMPOSITION AND METHOD OF PREPARING THEREOF</p>	
<p>(57) Abstract :</p> <p>THE PRESENT INVENTION PROVIDES A MODIFIED ASPHALT BINDER COMPOSITION FOR USE IN PAVEMENT ENGINEERING APPLICATION AND CONSTRUCTION OF HIGH STRENGTH EXPRESSWAY AND RESIDENTIAL AREA. THE MODIFIED ASPHALT BINDER COMPOSITION COMPRISING BITUMEN, NANOSILICA, NANO-TITANIUM DIOXIDE (TIO₂) PARTICLES AND METALLIC FIBERS. HEREIN, THE BITUMEN IS PREFERABLY PENETRATION BITUMEN GRADES RANGE FROM 60 TO 70; THE NANOSILICA IS PREFERABLY COLLOIDAL NANOSILICA AND THE METALLIC FIBERS ARE PREFERABLY STEEL FIBERS. THE PRESENT INVENTION FURTHER PROVIDES A METHOD OF PREPARING THE MODIFIED ASPHALT BINDER COMPOSITION COMPRISING THE STEPS OF (A) GRADUALLY ADMIXING NANOSILICA TO A FIRST PRE-HEATED BITUMEN TO OBTAIN NANOSILICA MODIFIED BITUMEN; (B) GRADUALLY ADMIXING NANO-TITANIUM DIOXIDE (TIO₂) PARTICLES TO A SECOND</p>	

PRE-HEATED BITUMEN TO OBTAIN NANOTITANIUM MODIFIED BITUMEN;
(C) MIXING THE NANOSILICA MODIFIED BITUMEN AND THE
NANOTITANIUM MODIFIED BITUMEN WITH METALLIC FIBERS IN A
HEATED MIXER HAVING A TEMPERATURE OF 160°C TO OBTAIN A
HOMOGENEOUS MODIFIED ASPHALT BINDER COMPOSITION.

