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2. Funding

No.	Funding Source	Funding Body	FUNDING TYPE	UNIVERSITY REFERENCE NO.	PROJECT LEADER
1	Government	Universiti Teknologi Malaysia	Tier 1	PY/2015/05009	Dr Norhidayah Binti Abdul Hassan

3. External Collaboration

Has any of this work been carried out elsewhere ? : No

4. Benefit of Copyright

Benefit to society / community

Description of benefit to society / community :
Relevant community for the copyright to be implemented :

Benefit to Industry

Description of benefit to industry :
Relevant industry(s) for the copyright to be commercialized :

5. Copyright

Application Title

Blending process for cup lump modified asphalt binder

Copyright Details

Date Invented : 04-01-2016
Place Invented : Universiti Teknologi Malaysia
Country of origin : MALAYSIA

Problem Statement

Problem : The origin form of cup lump rubber was in solid state, thus make it difficult to directly blend with asphalt binder.
Solution : The use of chemical solvent, which is toluene in rubber pre-treatment is practiced to soften the rubber prior to use in asphalt binder.

Copyright Category :

Brief description of the invention

Asphalt pavement faces challenges due to increasing traffic load, higher traffic volume and insufficient maintenance that easily led to severe failure. To overcome, modification on asphalt binder, particularly PMA has increased in recent years, where natural rubber i.e. latex was frequently being used as additive. For instance, currently the government is looking for the alternative use of the cup lump rubber, another form of natural rubber, as paving material. Therefore, after a number of trials, an invention on blending procedure was developed to produce cup lump rubber modified asphalt binder (CMA). The blending process of modified binder CMA (wet process) is simplified by initiating the use of single blending technique, which eliminates the double handling method introduced in the current practices. This procedure is important as it can be used as a guideline for future practices. This research was supported by Universiti Teknologi Malaysia in the form of a research grant number Q.J130000.2522.11H76.

6. Statutory Declaration

Date of project started : 01 Januari 2017
Date of work completed : 01 Januari 2018

STATUTORY DECLARATION FOR COPYRIGHT

COPYRIGHT ACT 1987

IN THE MATTER of Section 42 of the Copyright Act 1987 (Act 332)

And

In THE MATTER of the copyright in the Work (as hereinafter defined and attached hereto marked as "Exhibit 2", in the name of Universiti Teknologi Malaysia

STATUTORY DECLARATION

I, **Prof. Dr. Mohd Shahir Shamsir Bin Omar** (NRIC No. **730721-10-5123**) of full age and a Malaysian citizen with an address at Innovation and Commercialisation Centre, Industry Centre, Technovation Park, Universiti Teknologi Malaysia, 81310 Johor Bahru, Malaysia, do hereby solemnly and sincerely declare that the following contents of this notice are true :

1. I am the Director of Innovation and Commercialization Centre, Universiti Teknologi Malaysia (hereinafter referred to as "the University"), a Public University in Malaysia with its address at Innovation and Commercialization Centre, Industry Centre, Technovation Park, Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor, Malaysia.
2. In my aforesaid capacity, I have been duly authorized by the University to make this Statutory Declaration on their behalf. The facts herein contained are, unless to the contrary is stated from any personal knowledge or taken from the record of the University to which I have free and unrestricted access. The facts deposed to herein are true to the best of my knowledge, information and belief.
3. The University is the owner of the copyright of "**Blending process for cup lump modified asphalt binder**" (hereinafter referred to as "the works"). Please refer to Exhibit 2.

4. The contributor(s) who is/are the author(s) of the Work is/are as follows:-

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5. Name : **MOHD ZUL HANIF BIN MAHMUD**
NRIC No. : **870820525881**
6. Name : **MOHD KHAIRUL IDHAM BIN MOHD SATAR**
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8. Name : **AZRI BIN SAMSUDIN**
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9. Name : **HARYATI BINTI YAACOB**
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10. Name : **AZMAN BIN MOHAMED**
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11. Name : **NORDIANA BINTI MASHROS**
NRIC No. : **821212115554**
12. Name : **OTHMAN BIN CHE PUAN**
NRIC No. : **581026115147**
13. Name : **SITTI ASMAH BINTI HASSAN**
NRIC No. : **800305126276**
14. Name : **MD. MANIRUZZAMAN BIN A.AZIZ**
NRIC No. : **EE0417897**
15. Name : **HASANAN BIN MD NOR**
NRIC No. : **600912035441**

Main contributor of the Work must be the employee of the University (hereinafter referred to "the Main Author")

The personal details of the contributor(s) (hereinafter referred to as "the Author(s)") and information of the Work is attached herewith and marks as "Exhibit 1".

5. The Author(s) involved in the development of the Work is as listed in the document annexed as "Exhibit 1", herein and have been involved in the development of the Works for a period commencing from **01 Januari 2017**.

The Works comprises of One (1) document entitled as follows :

- i. "Exhibit 2"

I hereby declare the following:

- ii. on **01 Januari 2018**, copyright subsisted in the Works and continues to subsist;
 - iii. the Author(s) has/have expended sufficient to make the Work original in character;
 - iv. the Work has been reduced to a material form;
- and pursuant to Section 7 of the Copyright Act, 1987, the Work is eligible for copyright protection.

6. I have further been advised and verify believe that as:

- i. The Main Author was at all material times the employee of the University and had developed the Work in the course of his employment with the University; and
- ii. The University is the qualified person within the meaning of Section 10 of the Copyright Act 1987 the copyright in the Work belongs to the University.

7. Therefore I, on behalf of the University, do hereby assert the ownership of the copyright in the Work.

8. The Work was first published on Malaysia on . And I make this solemn declaration conscientiously believing the same to be true and by virtue of Section 42 of the Copyright Act 1987 and the Statutory Declaration Act 1980.

And I make this solemn declaration conscientiously believing the same to be true and by virtue of Section 42 of the Copyright Act 1987 and the Statutory Declaration Act 1980.

SUBSCRIBED and SOLEMNLY DECLARED }
By Name : **Prof. Dr. Mohd Shahir Shamsir Bin Omar** }
NRIC No. : **730721-10-5123** }
at Johor Bahru }
On this day of, }

Before me,

Commissioner of Oaths

Affixed Seal and Date

7. Applicant Declaration

The information which is provided on this form will be used by the University to access the ownership of the intellectual property rights, potential third party claims to those rights and obligations to external sponsors. Incorrect or incomplete detail could lead, the reduction or loss of commercialization revenues, or the invalidation of patent applications.

I declare that the information which I have provided in this form is, to the best of my knowledge and belief, correct and complete and that the contributors named are all the original creators of this invention/design. I also agree to cooperate in seeking or other legal protection in the name of University/Institution and in the commercialization of this invention/design. I also confirm that I have notified the University/Institution of any conflict of interest which may exist in relation to the invention.

eSubmit status : **:- agree for submission -**
Name of Inventor/Originator/Co-inventor : **NORHIDAYAH BINTI ABDUL HASSAN**
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Acceptance Date : **20-03-2019**

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Acceptance Date : **25-03-2019**

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