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<tr>
<th>Date</th>
<th>Project Leader/Project Member</th>
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<tbody>
<tr>
<td>1992 - 1993</td>
<td>Performance of Recycled Asphalt Pavement with Palm Oil as Rejuvenator&lt;br&gt;Vot RMC 61341 (RM 7,000)&lt;br&gt;Head Researcher (UTM)</td>
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<td>1994</td>
<td>Relationships of Materials Properties to Pavement Durability&lt;br&gt;Vot RMC 61635 (RM 20,000)&lt;br&gt;Head Researcher (UTM)</td>
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<tr>
<td>1995 - 1996</td>
<td>Effects of Segregation on Hot Mix Asphalt Properties (USD 37,500)&lt;br&gt;K-Tran: KU-96-6, Kansas Department of Transportation, USA&lt;br&gt;Researcher (Univ. of Kansas)</td>
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<td>1998 – 2000</td>
<td>Merging Process on Urban Dual Carriageway&lt;br&gt;Vot RMC 71323 (RM 14,000)&lt;br&gt;Researcher (UTM)</td>
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<td>2000 – 2001</td>
<td>Drivers Car Following Headway on Single Carriageway Road&lt;br&gt;Vot RMC 71620 (RM 20,000)&lt;br&gt;Researcher (UTM)</td>
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<td>2001 – 2004</td>
<td>Evaluation on Relationships of In-Place Air Voids, Lift Thickness, and Permeability of Hot Mix Asphalt Pavement (USD 355,000)&lt;br&gt;National Cooperative Highway Research Program (NCHRP) 9-27, USA&lt;br&gt;Researcher (NCAT)</td>
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<td>2005-2006</td>
<td>Guidelines for Patching Works&lt;br&gt;Vot RMC 75188 (RM 15,000)&lt;br&gt;Researcher (UTM)</td>
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<td>2005-2006</td>
<td>Evaluation on Fundamental Properties of Hot Mix Asphalt Mixes As Related to Permeability&lt;br&gt;Vot RMC 75196 (RM 15,000)&lt;br&gt;Head Researcher (UTM)</td>
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<td>2006 - 2008</td>
<td>Development of Superpave Designed HMA under Malaysia Environment.&lt;br&gt;(E-Science) 03-01-SF 0090 (RM 80,500)&lt;br&gt;Researcher (Uitm)</td>
</tr>
<tr>
<td>2009</td>
<td>Use of Oil Palm Fruit Ash in Bitumen&lt;br&gt;IGRS Vote 78921 (RM 10,000),&lt;br&gt;Head Researcher (UTM)</td>
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<td>2009</td>
<td>Use of Sasobit in Warm Mix Asphalt Mixtures&lt;br&gt;IGRS Vote 78918 (RM 10,000)</td>
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</table>
Head Researcher (UTM)

14. 2011-2013 Model for Energy Efficiency, Environment Quality and Material Use in Road Infrastructure (Flagship Grant) (RM 300,000)
    Researcher (UTM)
    GUP Research Grant TIER 2 01J84 (RM 40,000)
    Head Researcher (UTM)
16. 2011 - 2013 Grooved Underside Concrete Blocks For Pavement, GUP
    Grant TIER 1 00H93 (RM 130,000)
    Researcher (UTM)
17. 2012-2013 Evaluation on the Performane of Bond Strength Between Surfacing Pavement
    Layers GUP Research Grant TIER 2 06J52 (RM 30,000.00)
    Acting Head Researcher (UTM)
    Vot No. 4D043 (RM 30,000)
    Researcher (UTM)
19. 2013 Determination of Electromagnetic Properties of Bitumen Emulsion, GUP
    Research Grant PAS 00K42 (RM 30,000)
    Researcher (UTM)
20. 2013 Behavior of Cold Stone Mastic Asphalt Using Small Nominal Maximum
    Aggregate Size, GUP Research Grant TIER 2 06J98 (RM 34,000)
    Researcher (UTM)
21. 2013 Recyclability of Asphalt Mixtures
    GUP Research Grant TIER 2 07J33 (RM 40,000)
    Head Researcher (UTM)
22. 2013 Development of Road Safety Audit System Using GIS for Transport
    Infrastructure in Urban Cities of Malaysia, GUP Research Grant TIER 2 07J06
    (RM 50,000)
    Researcher (UTM)
23. 2013 Development and Performance of Low Noise Concrete Block Pavement GUP
    Research Grant TIER 1 03H47 (RM 130,000)
    Researcher (UTM)
24. 2013 Laboratory Evaluation on The Effect of Mixture Design on Porous Asphalt
    Mixture Performance, GUP Research Grant PAS 00K46 (RM 20,000)
    Researcher (UTM)
25. 2014-2016 Laboratory Evaluation on Using Bio Binder for Hot Mix Asphalt Mixtures
    GUP Research Grant TIER 1 06H58 (RM 40,000)
    Head Researcher (UTM)
26. 2014 Effect of Clogging on The Properties of Porous Asphalt
    GUP Research Grant TIER 2 09J89 (RM 30,000)
    Researcher (UTM)
27. 2014 Traffic Accident Prediction ModelBased on Pavement Condition
    GUP Research Grant TIER 1 06H53 (RM 40,000)
    Researcher (UTM)
28. 2015-2017 Interaction Mechanism Between Bituminous Mixtures and Kenaf Fibre to
    Improve Resistance against Rutting and Moisture Damage of Flexible
    Pavement
    GUP Research Grant TIER 1 11H35 (RM 40,000)
    Head Researcher (UTM)
29. 2016-2017 Penilaian Semula Rekabentuk Turapan Jalan Luar Bandar (Jalan Kampung)
    IISJ 15H16 (RM 39,500)
    Head Researcher (UTM)
30. 2016-2017  Pemindahan Teknologi Kaedah Rekabentuk Turapan Jalan Business Entity/CCIN/IISJ 4Y060 (RM 5,000)  
**Head Researcher (UTM)**

31. 2017  Kajian Pengurusan Pengangkutan Pusat Bandar Johor Bahru, Batu Pahat, Muar, Kulai dan Pasir Gudang  
Contract Research 4C127 (RM 460,000)  
**Researcher (Pengangkutan Awam Johor PAJ)**

32. 2017-2018  Rutting and Stripping Performance of Warm Mix Asphalt  
GUP Research Grant TIER 1 17H69 (RM 40,000)  
**Head Researcher (UTM)**

Contract Research LLM 4B331 (RM 20,000)  
**Head Researcher (UTM)**

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**FUNDAMENTAL RESEARCH GRANT SCHEME (FRGS FUND)**

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<tr>
<th>Date</th>
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| 1. 2006-2007 | Investigation on the mechanical and bonding behaviour of asphaltic concrete as a new structural material. (FGRS) Vot 78017 (RM 40,000)  
**Researcher (UTM)** |
| 2. 2006-2008 | Engineering Properties of HMA with POFA. Fundamental (FGRS) Vot 78009 (RM 30,000)  
**Head Researcher (UTM)** |
| 3. 2007-2009 | Impacts of Climate Change to Frictional Properties of Road Surface. Fundamental (FRGS) Vot 78242 (RM 100,000)  
**Acting Head Researcher (UTM)** |
| 4. 2010-2011 | Structural Performance Evaluation of Modified Block Pavement: Underside Surface Modification Fundamental (FRGS) Vot 78556 (RM 48,800)  
**Researcher (UTM)** |
| 5. 2010-2011 | Premature Failure of Asphalt Pavements in Tropical Climate Countries Fundamental (FRGS) Vot 0712 (RM 46,200)  
**Researcher (UTHM)** |
| 6. 2013      | A Study on Adhesion Failure Mechanism Due to Moisture Damage of Warm Mix Asphalt Using Image Analysis Technique (FRGS) RM 108,500  
**Researcher (USM)** |
**Researcher (UTM)** |
| 8. 2014-2017 | Investigation on Characteristics of Titanium Dioxide Nanoflowers as New Additive to Reduce Energy Consumption of Asphalt Mixture Production (FRGS) RM 130,800  
**Researcher (UTHM)** |
9. 2014-2016 Effects of Warm Asphalt Additive on Waste Engine Oil Based Recycled Mixture (FRGS) RM 80,000  
Researcher (UTM)
10. 2016-2019 Emperical Modelling of Noise Arising Due to Transverse Rumble Strips Installation (FRGS) RM 111,500  
Researcher (UTM)

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2. Single Face Compaction on Asphalt Specimen, File No: PI 2014701351, 2014