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Zhanping You

Michigan Technological University, zyou@mtu.edu

Qingli Dai

Michigan Technological University, qingdai@mtu.edu

Feipeng Xiao

Tongji University

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Advanced Paving Materials and Technologies

Zhanping You ^{1,*} , Qingli Dai ¹ and Feipeng Xiao ²

¹ Department of Civil and Environmental Engineering, Michigan Technological University, Houghton 49931, MI, USA; qingdai@mtu.edu

² Key Laboratory of Road and Traffic Engineering of the Ministry of Education, Tongji University, Shanghai 200000, China; fpxiao@tongji.edu.cn

* Correspondence: zyou@mtu.edu

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There has been tremendous amount of research advances in the area of pavement materials and paving technologies in the past decade. These include the use of warm mix asphalt technologies, rubber asphalt, bioasphalt, nanomaterial applications, new construction technologies, new concrete materials, and the application of pavement mechanistic-empirical design. With all these developments, a collection of peer-reviewed articles with a theme of advanced asphalt materials and paving technologies is necessary for the industry, researchers, government agencies, and other stakeholders. This collection promotes new, low-cost technologies with high durability, environmental friendliness, and effective resource usage in the area of advanced asphalt materials and paving technologies. These papers include

1. Towards an Alternate Evaluation of Moisture-Induced Damage of Bituminous Materials [1]
2. Property Analysis of Exfoliated Graphite Nanoplatelets Modified Asphalt Model Using a Molecular Dynamics (MD) Method [2]
3. Adhesion Evaluation of Asphalt-Aggregate Interface Using a Surface Free Energy Method [3]
4. Laboratory and On-Site Tests for Rapid Runway Repair [4]
5. Tire–Pavement Friction Characteristics with Elastic Properties of Asphalt Pavements [5]
6. Technologies and Principles of Hot Recycling and Investigation of Preheated Reclaimed Asphalt Pavement Batching Process in an Asphalt Mixing Plant [6]
7. Evaluation of Adhesion and Hysteresis Friction of a Rubber–Pavement System [7]
8. Research on the Performance of a Dense Graded Ultra-Thin Wearing Course Mixture [8]
9. Improving Asphalt Mixture Performance by Partially Replacing Bitumen with Waste Motor Oil and Elastomer Modifiers [9]
10. Mechanical Resilience of Modified Bitumen at Different Cooling Rates: A Rheological and Atomic Force Microscopy Investigation [10]
11. Using a Molecular Dynamics Simulation to Investigate Asphalt Nano-Cracking under External Loading Conditions [11]
12. An Evaluation of Mechanical Properties of Recycled Material for Utilization in Asphalt Mixtures [12]
13. A Study of Surfactant Additives for the Manufacture of Warm Mix Asphalt: From Laboratory Design to Asphalt Plant Manufacture [13]
14. Laboratory Evaluation of Rejuvenating Agent on Reclaimed SBS Modified Asphalt Pavement [14]
15. Three-Dimensional Digital Sieving of Asphalt Mixture Based on X-ray Computed Tomography [15]
16. Permeability and Stiffness Assessment of Paved and Unpaved Roads with Geocomposite Drainage Layers [16]

17. An Evaluation of Aging Resistance of Graphene-Oxide-Modified Asphalt [17]
18. Application of a Finite Layer Method in Pavement Structural Analysis [18]
19. A New Life for Cross-Linked Plastic Waste as Aggregates and Binder Modifier for Asphalt Mixtures [19]
20. Study of the Diffusion of Rejuvenators and Its Effect on Aged Bitumen Binder [20]
21. Simulation of Permanent Deformation in High-Modulus Asphalt Pavement with Sloped and Horizontally Curved Alignment [21]
22. Fatigue Life Prediction of High Modulus Asphalt Concrete Based on the Local Stress–Strain Method [22]
23. Low Temperature Performance Characteristics of Reclaimed Asphalt Pavement (RAP) Mortars with Virgin and Aged Soft Binders [23]
24. The Effect of Fibers on the Mixture Design of Stone Matrix Asphalt [24]
25. Ultrasonic Techniques for Air Void Size Distribution and Property Evaluation in Both Early-Age and Hardened Concrete Samples [25]
26. Thermal and Fatigue Evaluation of Asphalt Mixtures Containing RAP Treated with a Bio-Agent [26]
27. Numerical Study on the Asphalt Concrete Structure for Blast and Impact Load Using the Karagozian and Case Concrete Model [27]
28. Steady-State Creep of Asphalt Concrete [28]

These 28 papers have been peer reviewed under the journal’s rigorous review criteria. The collection includes invited papers from experts in international communities, and articles have been selected from the 2017 World Transport Convention (WTC) in Beijing held in June 2017.

Conflicts of Interest: The authors declare no conflict of interest.

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