CONTENTS

Papers

Calculating Tire/Pavement Friction Forces
Robert H. Smith and Timothy W. Neubert (USA) .......................................................... 2

Rutting Evaluation of Superpave Asphalt Mixtures in West Virginia Using the Loaded Wheel Tester and Field Surveys
John Zaniewski and Armando Orobio (USA/Colombia) .................................................... 15

Evaluation of Superpave Mixtures for Tokyo International Airport Pavements
Teck Shang Goh, Osamu Takahashi, and Ryota Maekawa (Japan) ........................................ 27

Noncontact Assessment of Highway Surface Vulnerability to Water Induced Damage
Phillip Millar and David Woodward (UK) ........................................................................ 39

Effectiveness of Liquid Antistripping Additives to Improve Moisture Damage Resistance of Asphalt Concrete
Mansour Solaimanian and Chieh-Tang Chang (USA/Taiwan) ............................................. 50

Air Void Effect on Frictional Properties of Existing Asphalt Pavement Surfaces
Mohammad Ali Khasawneh and Robert Y. Liang (USA)..................................................... 62

Effects of Gap in the Fine Aggregate Gradation of Porous Asphalt on Mix Permeability Loss Due to Binder Stealth Flow
Meor Othman Hamzah, Mohd Rosli Mohd Hasan, Kean Sin Lim, and Ahmad Shukri Yahya (Malaysia) ................................................................. 72

Technical Note

Report – Notable Events ........................................................................................................ 127

Discussions, Reviews, News
Paper Manuscript Offer Form
Technical Note Guidelines
Author’s Guidelines

Disclaimer: The IJP publisher and international editorial board do not endorse service providers, products, or manufacturers. Trade names or manufacturer’s names appear solely because they are considered essential to the purpose of papers. The scholarly papers do not constitute any design standard.

General Information and Subscription Guidelines
Publications Coordinator – Dr. João Virgílio Merighi, São Paulo, Brazil jmerighi@terra.com.br
Copyright © All rights reserved Printed in Brazil http://www.ijpavement.com/

http://www.ijpavement.com/
http://www.olemiss.edu/pubs/ijp/
CONTENTS

Papers (continued from previous page)

Investigation of Resistance and Fracture Parameters for Compacted Concrete with Incorporation of Reclaimed Asphalt Pavement
Taís Sachet, Maria da Consolação Fonseca de Albuquerque, José Tadeu Balbo, and Carlos Eduardo Sansone (Brazil) .............................................................................................. 83

Development of a Method to Establish Criteria for Pavement Roughness Evaluation
Christina Plati (Greece) .................................................................................................................. 94

Multi-Criteria Decision Analysis for Prioritizing Road Network Maintenance Interventions
Pierre Hankach and Philippe Lepert (France) .....................................................................................106

A Best-Fit Rigid Pavement Backcalculation Method Based on Site-Specific FEM Analysis
A.T. Papagiannakis and J.F. Marchant (USA) ....................................................................................118

IJP Chief Editor’s Message:

IJP – International Journal of Pavements has completing its tenth year of publications in 2011. On behalf of IJP publisher and editors, we are pleased to announce that total 144 papers and technical notes have been published in 2002-2011 issues of IJP. The 2011 IJP combined volume 10 issue includes 11 original peer reviewed scientific papers from 8 countries in high quality print format. We invite potential authors to submit original papers to the IJP Chief Editor as soon possible for 2012 issue.

The IJP international editorial board members and invited reviewers are respected pavement experts from 16 countries worldwide. They perform the blind-review of submitted papers in the most diligent and constructive way. In the double blind review process, the reviewers do not know each other and the names of the author(s), as well as the authors do not know the names of the reviewers. To ensure originality and quality of submitted papers, each author is required to submit the IJP paper manuscript offer form.

IJP Citation:

2003: IJP indexed by EBSCO Information Services, the world's leading subscription management agent serving libraries worldwide.

2005: IJP Cooperative agreement with the Transportation Research Board (TRB) Library for inclusion in the Transportation Research Information Service.

2010: IJP given B1, the third highest rating on 8-point Qualis scale, by the Brazilian Ministry of Education CAPES ranking.

2011: IJP indexed by TRID
“TRID is an integrated database that combines the records from TRB’s Transportation Research Information Services (TRIS) Database and the OECD’s Joint Transport Research Centre’s International Transport Research Documentation (ITRD) Database. TRID provides access to more than one million records of transportation research worldwide.”
CONTENTS

Papers

Calibration of the AASHTO MEPDG for Designing Flexible Pavements in Arizona Conditions
Mena I. Souliman, Michael Mamlouk, Mohamed El-Basyouny, and Claudia E. Zapata (USA) .......................................................... 2

Utilizing Traffic Molding of Pavement Sublayers Towards More Cost Efficient Pavement Design and Management
Eduard Kleyn and Wynand Jacobus van der Merwe Steyn (South Africa) ......................... 14

FWD-Forwardcalculation Outputs in the Flexible Pavement Overlay Design Procedure
Moshe Livneh (Israel) ........................................................................ 25

A Study of the Use of the Poisson’s Ratio as a Constitutive Parameter for Viscoelastic Analysis of Asphaltic Mixtures
Klaus Machado Theisen, Jorge Augusto Pereira Ceratti, and Imad L. Al-Qadi (Brazil/USA) …… 37

Structural Analysis of HMA Containing Ashes of Pine Wood Skin Burned for the Production of Medium Density Fiberboard
Jose Leomar Fernandes Junior and Vivian Silveira dos Santos Bardini (Brazil) ................. 50

Rheology of Fractionated Cornstover Bio-Oil as a Pavement Material
Mohamed Abdel Raouf and R. Christopher Williams (USA)............................................. 58

Technical Note

Report – Notable Events .................................................................120

Disclaimer: The IJP publisher and international editorial board do not endorse service providers, products, or manufacturers. Trade names or manufacturer’s names appear solely because they are considered essential to the purpose of papers. The scholarly papers do not constitute any design standard.
CONTENTS

Papers (continued from previous page)

Modification of a 14mm Asphalt Concrete Surfacing Using RAP and Waste HDPE Plastic
Imam Aschuri and David Woodward (Indonesia/UK) ................................................................. 70

The Reuse of Construction and Demolitions Materials as a Substitute for Pebbles Taken from River Beds in The Amazon (Brazil) for use as Aggregate in Asphalt Mixtures
Consuelo Alves da Frota, F.R.G. Nunes, M.D.G. Daniela, R.J.Q. Souza, and R.M. Fortes (Brazil) ................................................................. 79

Effectiveness of Superpave Rehabilitation Strategies for Asphalt Pavements
Anthony Waldenmaier, Magdy Abdelrahman, Bharathi Gundurao, Wael Tabara, and Tarek Zayed (USA/Canada) ................................................................. 87

Bayesian Based Linear Modeling for Pavement Smoothness Prediction
Qiang Joshua Li, Kelvin C.P. Wang, and Nii Attoh-Okine (USA) ................................................. 100

Applications of Scrap Steel in High Performance Cement Concrete Pavements – An Experimental Study and Life Cycle Cost Analysis
Suresh Kumar, M.S. Amarnath, and L. Udayakumar (India) ........................................................ 110

IJP Chief Editor’s Message:

IJP – International Journal of Pavements is completing its tenth year of publications in 2011. On behalf of IJP publisher and editors, we are pleased to announce that total 133 papers and technical notes have been published in 2002-2010 issues of IJP. The 2010 IJP combined volume 9 issue includes 11 original peer reviewed scientific papers from 8 countries in high quality print format. The 2009 issue included a research paper on the Pavement Test Track of DER-SP/Mackenzie, Brazil and some papers about AASHTO MEPDG implementation in the United Sates. Additionally, 12 more papers from 9 countries are in the process of final review and publication in the 2011 issue in coming weeks. We invite potential authors to submit original papers to the IJP Chief Editor as soon possible for 2012 issue.

The IJP international editorial board members and invited reviewers are respected pavement experts from 16 countries worldwide. They perform the blind-review of submitted papers in the most diligent and constructive way. In the blind review process, the reviewers do not know each other and the names of the author(s).

Overall, about 50 percent of the submitted paper manuscripts have been rejected in past years, based on the criteria of originality and contribution to the state of knowledge. Authors are required to provide adequate references including related IJP papers. To ensure originality and quality of submitted papers, each author is required to submit the IJP paper manuscript offer form.

IJP - International Journal of Pavements encompasses the following subject areas: roads, highways, airports, accelerated pavement testing; design, maintain, and rehabilitate asphalt and concrete pavements; low volume roads; new materials and paving technologies; nondestructive evaluation; life-cycle analysis and pavement management; and applications of advanced computer modeling and remote sensing technologies.
CONTENTS

Papers

Material Characterization of Different Recycled Asphalt Pavement Sources
N. Paul Khosla, Harikrishnan K. Nair, Beth Visintine, and Glen Malpass (USA) ………………… 1

Rutting Evaluation of Superpave Asphalt Mixtures in West Virginia Using the Lodaed Wheel Tester and Field Surveys
John Zaniecki and Armando Oroblo (USA/Colombia) ……………………………...………………… 13

Effect of Dynamic Modulus Measurement Method on Rutting Prediction Using the MEPDG Procedure
Samer W. Katicha, Gerardo W. Flintsch, and Amara Loulizzi (USA) ………………………. 25

Effect of Vehicle Class Distribution on Predicted Performance of Flexible Pavement Using the AASHTO MEPDG Method
Michael Mamlouk, Mohamed Elbasyouny, and Smita Dwivedi (USA) ……………………………. 36

C-130 Aircraft Accelerated Traffic Testing of Silty Sand Stabilized Using Polymer Emulsions, Fibers, and Combinations with Hydraulic Cements
J. Kent Newman and John F. Rushing (USA) …………………………………………………. 47

Investigating High Tenacity Polypropylene Fiber Reinforced Engineered Cementitious Composites as Pavement Overlay Materials
Estela Oliari Garcez, Francisco de Paula Simões Lopes Gastal, and Luiz Carlos Pinto da Silva Filho (Brazil) ……………………………………………………………… 59

Evaluation of the Performance of Different Curing Materials Applied to Soil-Cement Base Course Cure in the Pavement Test Track of Der-Sp/Mackenzie, Brazil
Rita Moura Fortes, João Virgilio Merighi, and Marcus dos Reis (Brazil) …………………….. 70

Technical Note

Report – Notable Events . …………………………………………………………………………… 82

Disclaimer: The IJP publisher and international editorial board do not endorse service providers, products, or manufacturers. Trade names or manufacturer’s names appear solely because they are considered essential to the purpose of papers. The scholarly papers do not constitute any design standard.