

## Western Research Institute

### 2013 Publications

Boysen, R. B., and J. F. Schabron, 2013, The Automated Asphaltene Determinator Coupled with Saturates, Aromatics, and Resins Separation for Petroleum Residua Characterization. *Energy & Fuels*, 27: 4654-4661; <http://pubs.acs.org/doi/pdf/10.1021/ef400952b>

Soenen, H., J. Besamusca, H. R. Fischer, L. D. Poulikakos, J.-P. Planche, P. K. Das, N. Kringos, J. R. A. Grenfell, X. Lu, and E. Chailleux, 2013, Laboratory investigation of bitumen based on round robin DSC and AFM tests. *Materials and Structures*, published online by Springer.com, 21 June 2013. <http://link.springer.com/article/10.1617%2Fs11527-013-0123-4#>

Bitumen.info, article in French, “Le Western Research Institute—Au coeur de la recherche américaine sur le bitume.” [www.bitume.info](http://www.bitume.info), no. 29, Spring-Summer 2013, pp. 21-23.

de la Roche, C., M. Van de Ven, J.P. Planche, Wim Van den Bergh, J. Grenfell, T. Gabet, V. Mouillet, L. Porot, F. Farcas, and C. Ruot, 2013, Hot Recycling of Bituminous Mixtures, Chapter 7 in *Advances in Interlaboratory Testing and Evaluation of Bituminous Materials*, RILEM State-of-the-Art Reports 9. M.N. Partl, et al. Eds., Springer, Dordrecht, The Netherlands, pp. 361-428.

**Abstract.** This chapter first presents the results of a survey performed on the practices used in Europe. This survey is considered a first report on the subject and could be usefully completed by the states of the art prepared in the framework of the Re-road and Direct-Mat European projects. Then the chapter addresses the key issue of Reclaimed Asphalt (RA) manufacture in laboratory considered within the group as an important point to assess recyclability of bituminous mixtures. To answer this question, common research has been launched on the basis of an interlaboratory test programme to set a relevant laboratory ageing of bituminous mixtures protocol. The choices of the tested protocol, the setting of the interlaboratory test programme as well as the results obtained, are presented in this chapter. A conclusion in the form of a recommendation for laboratory ageing of bituminous mixtures is given at the end of the chapter.

Farrar, M. J., E. Y. Hajj, J-P. Planche, M. Z. Alavi, A method to estimate the thermal stress build-up in an asphalt mixture from a single cooling event. Accepted for presentation and publication at the 5<sup>th</sup> EATA Conference (European Asphalt Technology Association), Braunschweig, Germany, June 3-5, 2013.

Farrar, M. J., E. Y. Hajj, J-P. Planche, and M. Z. Alavi, 2013, A method to estimate the thermal stress build-up in an asphalt mixture from a single cooling event. *Road Materials and Pavement Design*, 14:sup1, 201-211.  
<http://www.tandfonline.com/doi/abs/10.1080/14680629.2013.774756#preview>

Farrar, M. J., T. F. Turner, J-P. Planche, J. F. Schabron, and P. M. Harnsberger, 2013, Evolution of the Crossover Modulus with Oxidative Aging: Method to Estimate Change in Viscoelastic

Properties of Asphalt Binder with Time and Depth on the Road. *Transportation Research Record, Journal of the Transportation Research Board, No. 2370*, 76-83.

<http://trb.metapress.com/content/t4849n8634x74516/fulltext.pdf>

Farrar, M. J., S. L. Salmans, and J-P. Planche, 2013, Recovery and Laboratory Testing of Asphalt Emulsion Residue: Application of Simple Aging Test and 4-mm Dynamic Shear Rheometer Test. *Transportation Research Record, Journal of the Transportation Research Board, No. 2370*, 69-75.

<http://trb.metapress.com/content/a50h3v56v35v8jj3/fulltext.pdf>

Glaser, R. R., J. F. Schabron, T. F. Turner, J-P. Planche, S. L. Salmans, and J. L. Loveridge, 2013, Low-Temperature Oxidation Kinetics of Asphalt Binders. *Transportation Research Record, Journal of the Transportation Research Board, No. 2370*, 63-68.

<http://trb.metapress.com/content/r34976667326r152/fulltext.pdf>

Hou, Y., P. Yue, Q. Xin, T. Pauli, W. Sun, and L. Wang, 2013, Fracture failure of asphalt binder in mixed mode (Modes I and II) by using phase-field model. *Road Materials and Pavement Design*, published online 13 December 2013,

<http://www.tandfonline.com/doi/abs/10.1080/14680629.2013.866155>

Pauli, A.T., and S-C. Huang, 2013, Relationship between Asphalt Compatibility, Flow Properties, and Oxidative Aging. *Int. J. Pavement Res. Technol.*, 6(1): 1-7. (Presented at ISAP2012 International Symposium on Heavy Duty Asphalt Pavements and Bridge Deck Pavements, May 23-25, 2012, Nanjing, China.)

<http://www.ijprt.org.tw/index.php?page=issue&volume=6&issue=1>