Preliminary Agenda

Sunday, July 15

6:00 p.m. Welcome Reception

Monday, July 16

7:30 a.m. Registration
(Pick up conference materials)

8:00-8:30 Welcome and Opening Remarks
Salons A / B

8:30-9:00 The Strategic Asphalt Research (STAR) Symposium:
Outcome and Path Forward
Salons A / B

Session 1 - Asphalt Binder Chemistry - Analysis
Salons A / B
Session Chair: TBD

9:00-9:30 Diagnostic Techniques for Various Refining Processes,
Waxes andModifiers
Michael Elwardany, Jeramie Adams and Jean-Pascal Planche
Western Research Institute

9:30-10:00 REOB Detection with Handheld X-ray Fluorescence
Instrument
Fuji Zhou and Pravat Karki
Texas Transportation Institute

10:00-10:30 Break

10:30-11:00 Asphaltenes: Characterisation of Asphaltenes Formed
on Ageing
Dawid D’Melo and Rohit Gupta
Shell India Markets Ltd
Richard Taylor
Shell International Petroleum
Monday, July 16  (Continued)

11:00-11:30  Use of Ion-Mobility-Mass Spectrometry Comparisons to Evaluate Binder Aging  
Ashley Buss, Nacu Hernandez and Eric Cochran  
Iowa State University  
Andrew Hanz and Mary Ryan  
Mathy Construction

11:30-12:00  Comparison of Chemical and Microstructural Properties of Virgin and RAP Binders and Their SARA Fractions  
Peter Mikhailenko and Hassan Baaj  
University of Waterloo, Canada

12:00-12:30  SAR-AD Innovations and Next-Gen Developments  
Jeramie Adams, Joe Rovani, Ryan Boysen and Jean-Pascal Planche  
Western Research Institute

12:30-1:30  Lunch

1:30-5:00  Parallel Sessions

Session 2 - Asphalt Material Physical Evaluation - Binder Testing  
Salons  A / B  (Agenda on Pages 3 & 5)

Session 3 - Asphalt Modification  
Salons  C / D / E  (Agenda on Pages 4 & 6)
Monday, July 16  (Continued)

Session 2 - Asphalt Material Physical Evaluation - Binder Testing
Salons A / B
Session Chair: TBD

1:30-2:00 Utah Replaces the Direct Tension Test with the Delta Tcr Parameter
Howard Anderson
Utah Dept. of Transportation
Raj Dongre
Dongre Laboratory Services
Jack Youtcheff
Federal Highway Administration

2:00-2:30 Specifying PAV Pan Levelness and Warpage
David Anderson and Saman Barzegari
Penn State University

2:30-3:00 Test Method for Polymer Content of Polymer Modified Emulsified Asphalt Residue and Asphalt Binder
Ken Grzybowski
PRI Asphalt Technologies
Gaylon Baumgardner
Ergon
Robert Kluttz
Kraton Polymers

3:00-3:30 Break

3:30-4:00 Fatigue and Healing Performance of Neat and Modified Asphalt Binders
Chao Wang and Wei Xie
Beijing University of Technology

4:00-4:30 Measuring the Yield Stress of Asphalt Binders and Emulsion Residue
David Anderson, Noah Wakeman and Saman Barzegari
Penn State University

4:30-5:00 Evaluation of MSCR Jnr diff Determination and Effects on Performance
John D’Angelo
D’Angelo Consulting
Gaylon Baumgardner, Trey Jordan, Codrin Daranga and Mike Hemsley
Paragon Technical Services
Monday, July 16  (Continued)

Session 3 - Asphalt Modification
Salons  C / D / E
Session Chair:  TBD

1:30-2:00  Recent Advances in the Modification of Asphalt Mixtures with Hydrated Lime
Didier Lesueur
Lhoist, France

2:00-2:30  Use of TPU as Bitumen Modifier: Compatibility and Morphology Relationship
Raïssa Gallu, Françoise Mechin and Jean-François Gerard
INSA Lyon
Florent Dalmas and Laurent Chazeau
Matéïs
Frédéric Loup, François Olard and Florent Schrevel
Eiffage
Rémi Perrin, Christine Robach, Audrey Arnaud and Stéphanie Laurichesse
Soprema

2:30-3:00  Use of Agent to Increase Efficiency of Styrene-Butadiene-Styrene Block Copolymers in Asphalt Modification
Austin Hohmann, Conglin Chen, Nacu Hernandez, Chris Williams and Eric Cochran
Iowa State University

3:00-3:30  Break

3:30-4:00  New Effective Cross-Linking Agent for Polymer Modified Asphalt (PMA)
Mohammed Memon
Capital Resin Corporation

4:00-4:30  Trans-octanamer (TOR) in Road Construction - Make Good Things Better
Frank Lindner
Evonik Resource Efficiency GmbH
Ankur Kant
Evonik Corporation

4:30-5:00  FTIR Characterized Diffusion of Molecular Species within Asphalt Films that are Semi-Submerged in Water
Mathew Peavy, Nibert Saltibus and Darren Williams
Sam Houston State University
**Tuesday, July 17**

**Session 2 - Asphalt Material Physical Evaluation - Binder Testing (Continued)**

**Salons A / B**

**Session Chair: TBD**

8:00-8:30  
A Simple Test Method for Asphalt Binder Fatigue Specification  
Raj Dongre  
*Dongre Lab Services*  
Adrian Andriescu  
*SES Group & Associates*  
Jack Youtcheff  
*Federal Highway Administration*

8:30-9:00  
Study to Evaluate Delta Tc Cracking Criteria and the Relation Between Binder Low Temp and Environmental Temperatures  
John D’Angelo  
*D’Angelo Consulting*  
Gaylon Baumgardner, Trey Jordan, Codrin Daranga and Mike Hemsley  
*Paragon Technical Services*

9:00-9:30  
Obtaining Creep Compliance from Flexural Strength Test on Asphalt Binders  
Tianhao Yan, Mugurel Turos and Mihai Marasteanu  
*University of Minnesota*  
Dave Van Deusen  
*Minnesota Department of Transportation*

9:30-10:00  
Developing Suitable Test Procedure for Testing GTR-Modified Asphalt Binder  
Amir Golalipour  
*Engineering & Software Consultants*  
David Mensching and Matthew Corrigan  
*Federal Highway Administration*

10:00-10:30  
**Break**
**Tuesday, July 17**

**Session 3 - Asphalt Modification (Continued)**

**Salons C / D / E**

**Session Chair: TBD**

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speakers</th>
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</table>
| 8:00-8:30 | Effects of Different Modifiers and REOB on the Delta T<sub>c</sub> of PG Binders | Huachun Zhai and Alejandro Rosales  
*Idaho Asphalt Supply*  
Brody Young  
*Peak Asphalt* |
| 8:30-9:00 | RET-based Polymer Modifiers for Concentrates and Fast Blending       | C.J. DuBois  
*E. I. du Pont De Nemours and Co.*  
Hayley Brown, Jong-Young Lee and Cristina Serrat  
*The Dow Chemical Company* |
| 9:00-9:30 | Impact of Various Crumb Rubber Modifications on Asphalt Binder and Mixture Properties | William Daly, Sreelatha Balamurugan, Louay Mohammad and Ioan Negulescu  
*Louisiana State University*  
Samuel Cooper III and Samuel Cooper Jr.  
*LTRC*  
Gaylon Baumgardner  
*Paragon Technical Services* |
| 9:30-10:00| Ground Tire Rubber Modification for Decreased Asphalt Separation    | Nacu Hernandez, Brittany Hallmark, Chris Williams and Eric Cochran  
*Iowa State University* |

10:00-10:30 **Break**
Tuesday, July 17  (Continued)

10:30-5:00  Parallel Sessions

Session 4 - Asphalt Material Physical Evaluation - Mixture and Pavement
  Salons  A / B  (Agenda on Pages 7, 8 & 9)

Session 5 - Asphalt Recycling
  Salons  C / D / E  (Agenda on Pages 10, 11 & 12)

Session 4 - Asphalt Material Physical Evaluation - Mixture and Pavement
  Salons A / B
  Session Chair:  TBD

10:30-11:00  Post-Production Asphalt Mix Performance Testing in Ontario
            Seyed Tabib, Imran Bashir
            and Pamela Marks
            Ministry of Transportation of Ontario

11:00-11:30  Factors Affecting Coefficient of Thermal Expansion (CTE) and Low Temperature Cracking Performance of Asphalt Mixture
            Sang Soo Kim
            Ohio University
            Moses Akentuna
            Louisiana State University

11:30-12:00  Tailoring a New Laboratory Methodology for Stripping Resistance Evaluation of Asphalt Materials
            Justine Vinet
            Eurovia Management, IFSTTAR
            Vincent Gaudefroy and Emmanuel Chailléux
            IFSTTAR
            Frédéric Delfosse
            Eurovia Management
            Everett Crews
            Ingevity Corporation

12:00-1:00  Lunch
Tuesday, July 17 (Continued)

Session 4 - Asphalt Material Physical Evaluation - Mixture and Pavement (Continued)
Salons A / B
Session Chair: TBD

1:00-1:30 A Simple Test for Quality Control of RAP Piles
Raj Dongre
Dongre Laboratory Services
Sean (Xinjun) Li and Adrian Andriescu
SES Group & Associates
Jack Youtcheff
Federal Highway Administration

1:30-2:00 Evaluation of Binder and Mix Properties of High RAP Mix with Soft Asphalt Binder
John D’Angelo
D’Angelo Consulting
Brett Lambden
Husky Energy
Raj Dongre
Dongre Laboratory Services

2:00-2:30 Moving Towards Performance-Related Specification for Asphalt Pavement
David Mensching and Richard Duval
Federal Highway Administration

2:30-3:00 A Study on Practicality and Variability of Semi-Circular Beam (SCB) Test
Faramarz Safazadeh, Pedro Romero, Abu Sufian Mohammad Asib and Shauling Bao
University of Utah

3:00-3:30 Break
**Tuesday, July 17 (Continued)**

**Session 4 - Asphalt Material Physical Evaluation - Mixture and Pavement (Continued)**

*Salons A / B*

*Session Chair: TBD*

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<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>3:30-4:00</td>
<td>Accurate Modeling and Optimization of Permanent Deformation in Asphalt Pavement via the Application of Principal Component Analysis</td>
<td>Parnian Ghasemi, Derrick Rollins and Christopher Williams Iowa State University Mohamad Asiani Florida State University</td>
</tr>
<tr>
<td>4:00-4:30</td>
<td>An Electrical Resistance Measurement for Moisture Content Evaluation in Asphalt Emulsion Applications</td>
<td>Miguel Montoya and John Haddock Purdue University</td>
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<tr>
<td>4:30-5:00</td>
<td>Use of Artificial Intelligence in the Asphalt Industry</td>
<td>Raj Dongre Dongre Laboratory Services</td>
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Tuesday, July 17 (Continued)

Session 5 - Asphalt Recycling
Salons C / D / E
Session Chair: TBD

10:30-11:00 Investigation of High RAP/RAS Binder Performance
Amir Golalipour and Chuck Paugh
Engineering & Software Consultants
David Mensching
Federal Highway Administration

11:00-11:30 Changes in the Chemical Composition of Virgin Asphalt and RAP Extracted Binder Used for a High Volume High RAP Mix Design Due to the Addition of a Soybean Derived Chemical Additive
Barrie Saw, Joseph Podolsky, Zahra Sotoodeh-Nia, Nacu Hernandez, Benjamin Empric, Fang-Yi Lin, R. Christopher Williams and Eric Cochran
Iowa State University

11:30-12:00 Recycling Between 40 and 70% of Mixes: From Laboratory Testing to the MURE National Project Demonstrators
Jean-Eric Poirier
Colas
Simon Pouget
Eiffage
Ivan Drouadaine and Stephané Faucon-Dumont
Eurovia Management
Cédric Sauzéat, Hervé Di Benedetto and Alvaro Pedraza
École Nationale des Travaux Publics de l’Etat
Virginie Mouillet, Cerema DeTerMed and Brice Delaporte
IREX
Vincent Gaudefroy and Sabine Vassaux
IFSTTAR

12:00-1:00 Lunch
**Tuesday, July 17  (Continued)**

**Session 5 - Asphalt Recycling  (Continued)**

Salons  C / D / E  
Session Chair:  TBD

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<th>Time</th>
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<tr>
<td>1:00-1:30</td>
<td>High RAP Recycling (50%) Facilitated with Bio Material Addition as Part of BioRePavation Project: Test Sections, Field Sampling and Lab Results</td>
<td>Ryan Boysen and Jean-Pascal Planche Western Research Institute Emmanuel Chailleux, Erika Bessmann and Juliette Blanca IFSTTAR Laurent Porot Kraton Polymers Chris Williams and Zahra Nia Sootoodeh Iowa State University Simone Pouget and Françoise Olard Eiffage Davide Lo Presti and Ana Jimenez del Barco Carrion University of Nottingham</td>
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<tr>
<td>1:30-2:00</td>
<td>Toward the Development of Performance-Related Specification for Bio-Rejuvenators</td>
<td>Fujie Zhou and Pravat Karki Texas A&amp;M Transportation Institute</td>
</tr>
<tr>
<td>2:00-2:30</td>
<td>Thermal Properties of Rejuvenators and Their Impact on the Low Temperature Performance of Rejuvenated Binders</td>
<td>Mohamed Elkashef, David Jones and John Harvey University of California, Davis R. Christopher Williams Iowa State University</td>
</tr>
<tr>
<td>2:30-3:00</td>
<td>Production of a Cold Mix Using 100% of Milled Material (R.A.P.) with Cold Rejuvenator</td>
<td>Lorenzo Sangalli Greenpave Technology</td>
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<tr>
<td>3:00-3:30</td>
<td><strong>Break</strong></td>
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Tuesday, July 17  (Continued)

Session 5 - Asphalt Recycling  (Continued)
Salons  C / D / E
Session Chair:  TBD

3:30-4:00  Performance-Engineered Mix Design Methodology for Rejuvenated High-Recycled HMA
Hassan Tabatabaee and Tony Sylvester  
Cargill Industrial Specialties

4:00-4:30  Impact of Silo Storage Time on Blending Between RAP and Virgin Binders in High RAP Content Asphalt Mixes
Payman Pirzadeh, Pavel Kriz and Daniel Grant  
Imperial Oil
Hawraa Kadhim, Peter Mikhailenko and Hassan Baaj  
University of Waterloo, Canada

4:30-5:00  Effect of RAP and Aging on Low Temperature Performance of Asphalt Materials
Abu Sufian Mohammad Asib, Pedro Romero and Faramarz Safazadeh  
University of Utah
**Wednesday, July 18**

**Session 6 - Asphalt Binder Chemistry - Aging**

**Salons A / B**  
**Session Chair: TBD**

8:00-8:30   Effect of Oxidation on Stripping Potential of Binder-Aggregate Interfaces  
Alejandra Baldi, José Aguiar-Moya and Luis Loria-Salazar  
Lanamme, University of Costa Rica

8:30-9:00   Investigation of Aging Evolution at the Surface of Asphalt Binder Specimen Using a Novel Aging Procedure and AFM Micromechanical Characterization  
Meng Xu  
Harbin Institute of Technology/University of Minnesota  
Junyan Yi, Zhongshi Pei and Decheng Feng  
Harbin Institute of Technology  
Mihai Marasteanu  
University of Minnesota

9:00-9:30   Investigation of the Effect of Aging Temperatures on Rheological Properties of Asphalt Binder Based on BBR and AFM  
Augusto Cannone Falchetto, Di Wang and Chiara Riccardi  
Technische Universität, Braunschweig, Germany  
Ashley Buss  
Iowa State University

9:30-10:00  Oxidative and Thermoreversible Aging Effects on Performance-Based Rheological Properties of Six Latin American Asphalt Binders  
Max Berkowitz, Matthew Filipovich and Simon Hesp  
Queens University  
Alejandra Baldi-Sevilla, José Aguiar-Moya and Luis Loria-Salazar  
Lanamme, University of Costa Rica

10:00-10:30  **Break**
**Wednesday, July 18 (Continued)**

**Session 6 - Asphalt Binder Chemistry - Aging (Continued)**  
**Salons A / B**  
**Session Chair: TBD**

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<tr>
<td>10:30-11:00</td>
<td>Kinetic Study on Laboratory and Field Oxidation of Asphalt</td>
<td>Alejandra Baldi, José Aguiar-Moya and Luis Loria-Salazar, Lanamme, University of Costa Rica</td>
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<tr>
<td>11:00-11:30</td>
<td>Effect of Aggregates Petrology on the Age Hardening of Asphalt Cement</td>
<td>Yashar Azimi Alamdary, Sarbjot Singh and Hassan Baaj, University of Waterloo, Canada</td>
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<tr>
<td>11:30-12:00</td>
<td>Microstructure and Chemical Analysis of Asphalt Binders Aged in the Presence of Moisture</td>
<td>Ilaria Menapace, Wubulikasimu Yiming and Eyad Masad, Texas A&amp;M University at Qatar</td>
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<tr>
<td>12:00-12:10</td>
<td><strong>Closing Remarks</strong></td>
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