

## PROGRAM

### DAY #1 | SEPTEMBER 12<sup>th</sup> 2022 Starhotels Rosa Grand

time	room	plenary workshops
02:00 p.m.	<b>TURANDOT</b>	On-site registration opens
02:30 p.m.	<b>AIDA</b>	<b>WORKSHOP 1</b>
04:30 p.m.		State of Art and advancements about surface characteristics G. Flintsch   R. Wix
04:30 p.m.	<b>AIDA</b>	<b>WORKSHOP 2</b>
06:30 p.m.		Concrete & Asphalt – State of Art and advancements about Surface Treatments & Maintenance M. Crispino   E. Toraldo   L. Rens
06:30 p.m.	<b>GRAND LOUNGE &amp; BAR</b>	Opening reception
07:30 p.m.		

## DAY #2 | SEPTEMBER 13<sup>th</sup> 2022

### Starhotels Rosa Grand

time	room	plenary opening session
08:30 a.m.	<b>TURANDOT</b>	On-site registration opens
09:00 a.m.	<b>AIDA</b>	<b>INTRODUCTION AND WELCOME SPEECHES</b>
10:30 a.m.		<p><b>Maurizio Crispino</b> - Professor, Symposium Chair, Moderator</p> <p><b>Enrico Giovannini</b> - Italian Minister of Sustainable Infrastructures and Mobility</p> <p><b>Alberto Guadagnini</b> - Rector's delegate, Director of Department of Civil and Environmental Engineering, Politecnico di Milano</p> <p><b>Aldo Isi</b> - Anas Ceo, Symposium Co-Chair</p> <p><b>Massimo Schintu</b> - AISCAT General Director</p> <p><b>Claudio Eminente</b> - Central Director of Economic Planning and Infrastructure Development, ENAC</p> <p><b>Margo Briessinck</b> - PIARC TC 4.1 "Pavements" Chair</p> <p><b>Nazir Alli</b> - PIARC, President</p> <p><b>Armando Zambrano</b> - Italian Engineers National Council, President</p> <p><b>Claudia Terzi</b> - Regione Lombardia, Councilor for Infrastructures</p>
10:30 a.m.	<b>AIDA</b>	<b>KEYNOTE SPEECH</b>
11:00 a.m.		<p><b>Revolutionizing Pavements for the CAV era</b></p> <p><b>Imad Al-Qadi</b> - Director, Illinois Center for Transportation, USA</p>
11:00 a.m.	<b>EXHIBIT HALL</b>	Coffee Break
11:30 a.m.		
time	room	concurrent technical session 1
11:30 a.m.	<b>AIDA</b>	Data Monitoring and Performance Assessment
01:30 p.m.	<b>NORMA</b>	Surface Materials Performance
	<b>TOSCA</b>	Urban Pavements: heat islands, pedestrian areas, and cycle paths
	<b>MANON</b>	Surface Layers and Bituminous Materials, Design and Characterization
01:30 p.m.	<b>EXHIBIT HALL</b>	Light Lunch
02:30 p.m.		
time	room	concurrent technical session 2
02:30 p.m.	<b>AIDA</b>	Ride Safety and Pavement Surface Performance
04:30 p.m.	<b>NORMA</b>	Environmental Impacts and Issues
	<b>TOSCA</b>	Noise Effects and Roads Surface Characteristics
	<b>MANON</b>	Road Pavement Management
08:00 p.m.	<b>ROSES RESTAURANT</b>	Gala Dinner

## DAY #3 | SEPTEMBER 14<sup>th</sup> 2022

### Starhotels Rosa Grand

time	room	concurrent technical session 3
09:00 a.m.	<b>AIDA</b>	Road Materials and Pavements Bearing Capacity
11:00 a.m.	<b>NORMA</b>	Maintenance and Preservation Treatments
	<b>TOSCA</b>	Safety and Risk Issues
	<b>MANON</b>	Airport Pavements and Management
11:00 a.m.	<b>EXHIBIT HALL</b>	Coffee Break
11:30 a.m.		
time	room	concurrent technical session 4
11:30 a.m.	<b>AIDA</b>	Pavement Condition Measures and Models
01:30 p.m.	<b>NORMA</b>	Pavement Surface Characteristics and Measures
	<b>TOSCA</b>	Road Materials and Construction
	<b>MANON</b>	Quality Assessment of Pavement Surface Layers
01:30 p.m.	<b>EXHIBIT HALL</b>	Light Lunch
02:30 p.m.		
02:30 p.m.	<b>NORMA</b>	POSTER session
03:30 p.m.		
time	room	plenary closing session
03:30 p.m.	<b>AIDA</b>	<b>KEYNOTE SPEECH</b>
04:00 p.m.		Smart tyres: Key enablers of future mobility scenarios Corrado Rocca - R&D Head, Cyber Unit, Pirelli Tyre
04:00 p.m.	<b>AIDA</b>	Cultural intermezzo
04:30 p.m.		
04:30 p.m.	<b>AIDA</b>	<b>CLOSING SESSION AND CONCLUSION OF THE SYMPOSIUM</b>
05:30 p.m.		Maurizio Crispino - Professor, Symposium Chair Alberto Talierno - Rector's delegate, Dean of School of Civil, Environmental and Land Management Engineering – Politecnico di Milano Claire Depré - European Commission, Directorate General for Mobility and Transport, Head of Unit Road Safety (C2) Edoardo Valente - ANAS President Patrick Mallejacq - PIARC Secretary General Domenico Crocco - PIARC Italy First Delegate Margo Briessinck - PIARC TC 4.1 "Pavements" Chair Surf 2022 - Student challenge awards Surf 2022 - Best paper awards

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 1

Topic	<b>Data Monitoring and Performance Assessment</b>
Day	#2, September 13 <sup>th</sup>
Time	11:30 a.m. – 01:30 p.m.
Room	AIDA
Sessions Chairs	Luc Rens   Emanuele Toraldo

ID	title
176	<b>Analysis and Visualization for Pavement Condition Assessment Using Network-Level Survey Data</b> Than Than Nyunt   Zhuoyuan Cheng   Puay Ping Koh Anggraini Zulkati   Kian Keong Chin
210	<b>Detection of Irregularities Within the Asphalt Surface Behind the Paver Screed Using Image Analysis</b> Leandro Harries   Stefan Helfmann   Stefan Böhm
347	<b>Road Condition Monitoring and Assessment in Germany How to Use the Data for Pavement Analysis</b> Ferdinand H. Farwick zum Hagen   Felix Lau
229	<b>Real Time Road Condition Monitoring Data as a Tool for Situation Awareness in the Maintenance Management of Paved and Gravel Roads</b> Timo Saarenpää   Pekka Haatainen   Markus Simonen Timo P Saarenketo
366	<b>Analysis of Road Damage with Computer-Vision Based Drive-By System</b> Sergio Caccamo   Rafael Mrden   Amit Dekel
231	<b>Monitoring Rut Depth Development – What Does It Tell Us</b> Timo P Saarenketo   Tomi Herronen   Vesa Männistö

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 1

Topic	<b>Surface Materials Performance</b>
Day	#2, September 13 <sup>th</sup>
Time	11:30 a.m. – 01:30 p.m.
Room	NORMA
Sessions Chairs	Joralf Aurstad   Misagh Ketabdari

ID	title
163	<b>Performance Review of Surfacing Materials Incorporating Enhanced Levels of Reclaimed Asphalt on the UK Strategic Road Network</b> Michael Wright   Matthew Wayman   Wenxin Zuo
326	<b>The Use of Aggregates with Different Resistance to Polishing in Wearing Courses</b> Pavla Nekulova   Jaroslava Daskova   Leos Nekula   Petr Bures Jiri Kaspar
168	<b>Challenges for the Development and Implementation of Asphalt Mixtures containing Recycled Waste Plastic for Pavement Surfacing</b> Greg White   Gordon Reid
311	<b>Systemic Analysis of the Thermal Performance of Road Surfaces</b> Maxime Frere   Martin Hendel   Julien Van Rompu   Simon Pouget Laurent Royon
298	<b>Test Section with Next Generation Concrete Surface (NGCS) in Belgium: Rolling Resistance and Noise</b> Anneleen Bergiers   Barbara Vanhooreweder
296	<b>ULTRAPAV - New Asphalt Mixtures with High Mechanical Performance, Enhancing Their Sustainability and Their Safety</b> Victor Garcia Rabadan   Gloria Motos Cascales   Julio Lopez Ayerra Jose Ramon Lopez Marco   Jesus Felipe Sanjuan Rebeca Maria Sastre Rabal

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 1

Topic	<b>Urban Pavements: heat islands, pedestrian areas and cycle paths</b>
Day	#2, September 13 <sup>th</sup>
Time	11:30 a.m. – 01:30 p.m.
Room	TOSCA
Sessions Chairs	Stefan Holler   Mauro Coni

ID	title
193	<b>Simplified Road Pavement Surface Deterioration Model in Urban Area</b> Monica Meocci   Valentina Branzi
197	<b>Colorimetry of Pavements for Urban Planning</b> Laure Lebouc   Sébastien Liandrat   Romain Lafon   Aurélia Nicolai Fabrice Fournela   Florian Greffier
316	<b>Building Information Modeling for Municipal Asset Management</b> Alexander Buttgerit   Maria Koordt   Markus Stöckner Ute Stöckner
219	<b>Mix Design of Recycled Asphalt Concretes for Sustainable Rural Mobility: Bicycle and/or Pedestrian Routes</b> Donato Ciampa   Maurizio Diomedi   Francesco Paolo Rosario Marino   Saverio Olita
239	<b>Pavements, Energy Efficient Actors in Public Lighting</b> Sébastien Liandrat   Valérie Muzet   Vincent Bour   Jérôme Dehon Jean-Pierre Christory   Brice Delaporte   Joseph Abdo Florence Pero   Thibaut Le Doeuff
317	<b>Applicability of WMA in Urban Road Construction in Accordance with Occupational Health and Safety Requirements</b> Alexander Buttgerit   Knut Johannsen   Daniel Gogolin

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 1

Topic	<b>Surface Layers and Bituminous Materials, Design and Characterization</b>
Day	#2, September 13 <sup>th</sup>
Time	11:30 a.m. – 01:30 p.m.
Room	MANON
Sessions Chairs	Richard Wix   Claudia Nodari

ID	title
341	<b>An Analytical Model for Forecasting Pavement Temperature</b> Usama B Ayasrah   Laith Tashman
359	<b>Evaluation of Pavement Temperature Detected Through Embedded Sensors – Comparison of Field Data with Different Predictive Models</b> Cristina Tozzo   Davide Chiola   Nicoletta Gasbarro   Paolo Spinelli
340	<b>Bituminous Sealant: New Formulation Approach Using Rheology</b> Ines Antunes   Gilberto Del Zoppo   Fabio Curto
221	<b>Laboratory Investigation on the Role of Fibers into Porous Bituminous Mixtures</b> Edoardo Mariani   Emanuele Toraldo
357	<b>Recycled Porous Asphalt Concretes: Pros and Contrasts</b> Rosolino Vaiana   Filippo Giammaria Praticò   Teresa Luele Manuel De Rose   Giusi Perri   Rosario Fedele   Francesco De Masi
360	<b>Grip Mastic Asphalt – High Friction Asphalt for Wearing Course with the Addition of Steel Slag</b> Cristina Tozzo   Davide Chiola   Nicoletta Gasbarro   Paolo Spinelli

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 2

Topic	<b>Ride Safety and Pavement Surface Performance</b>
Day	#2, September 13 <sup>th</sup>
Time	02:30 p.m. – 04:30 p.m.
Room	AIDA
Sessions Chairs	Gina Ahlstrom   Davide Chiola

ID	title
278	<b>An Exploration of Friction Supply and Demand - The Management of Road Surface Friction as a Factor in Vehicle Safety</b> Peter D. Sanders   Helen Viner
287	<b>Characterization of Surface Roughness on the basis of Vibration Response Corresponding to the Ride Quality of Micromobilities</b> Kazuya Tomiyama   Yuki Kotani
233	<b>Improving the Understanding of User Experience of Ride Quality</b> Alex Wright   Craig Thomas   Kamal Nesnas   Nathan Dhillon Neng Mbah   Stuart McRobbie
192	<b>Determination of Riding Comfort of Cycleways</b> Leif Sjögren
288	<b>Adjusting Skid Resistance Data for Seasonal Variation on the Irish National Road Network Using Local Climatic Data</b> Rory K. Donnellan   Kieran Feighan   Brian Mulry
306	<b>Relationship Between Driving Conditions, Pavement Characteristics and Rolling Resistance</b> Veronique Cerezo   Joao Santos   Mohamed Bouteldja Xavier Potier



# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 2

Topic	<b>Environmental Impacts and Issues</b>
Day	#2, September 13 <sup>th</sup>
Time	02:30 p.m. – 04:30 p.m.
Room	NORMA
Sessions Chairs	Zsolt Boros   Edoardo Mariani

ID	title
300	<b>The Environmental Asphalt Rating (EAR) – A Case Study for Open-Graded Asphalt Mixtures</b> Davide Chiola   Vincenzo Cirimele   Cristina Tozzo   Paolo Spinelli
323	<b>Environmental Efficiency Assessment of RCA Inclusion as Partial Replacement of Virgin Aggregates in HMA and WMA</b> Rodrigo Ernesto Polo-Mendoza   Emilio Turbay Gilberto Martinez-Arguelles   Rita Peñabaena-Niebles
345	<b>Comparing Environmental Impacts of Alternative Roads: Mechanical and Sustainable Considerations</b> Gaetano Bosurgi   Clara Celauro   Giuseppe Lo Brano Orazio Pellegrino   Giuseppe Sollazzo
237	<b>Innovative Cement-Based Material as Environmental and Efficient Technical Alternative for Pavements</b> Arianna Stimilli   Tullio Caraffa   Alessandro Marradi
338	<b>Evaluation of Porous Asphalt Hydrological Performances Through Rainfall-Runoff Modelling by EPA SWMM</b> Diego Ciriminna   Giovanni Battista Ferreri Leonardo Valerio Ferreri   Clara Celauro
290	<b>Pavement Heating System Using Electroconductive Paint for Preventing Ice Formation on The Surface Layer</b> Thomas Attia   Flavien Geisler   Simon Pouget   Camille Thomasse Dominique Le Blanc

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 2

Topic	<b>Noise Effects and Roads Surface Characteristics</b>
Day	#2, September 13 <sup>th</sup>
Time	02:30 p.m. – 04:30 p.m.
Room	TOSCA
Sessions Chairs	Nazir Alli   Massimo Losa

ID	title
222	<b>Understanding User Experience of In-Vehicle Noise Based on Road Surface Texture Data</b> Tadas Andriejauskas   Alex Wright   Rob Lee   Craig Thomas Stuart McRobbie   Neng Mbah
232	<b>Effect on Noise Reduction of Repaving Only the Top Layer in a Double-Layer Porous Asphalt Pavement</b> Ulf Sandberg
199	<b>Optimizing the Pattern of Grooves of the Next Generation Cement Concrete Surface (NGCS) for Less Tyre/Road Noise and Less Fuel Consumption</b> Luc Goubert
356	<b>Acoustic Characterisation of Motorway Pavements: New Perspectives to Optimise Road Asset Management</b> Lara Ginevra Del Pizzo   Antonino Moro   Francesco Bianco Davide Chiola   Benedetto Carambia   Gaetano Licitra
238	<b>Pavement Maintenance Influence on Road Traffic Noise Emission</b> Manfred Haider   Reinhard Wehr   Roland Spielhofer
250	<b>Impacts of the Shift from Distressed Pavements to Low Noise Pavements in Motorways – A Case Study in Portugal</b> Maria João Rato   Maria Inês Ramos   Elisabete F. Freitas Margarida Braga   Luís Fernandes   Ana Falcão   Isabel Gonzalez Eduardo Fernandes

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 2

Topic	<b>Road Pavement Management</b>
Day	#2, September 13 <sup>th</sup>
Time	02:30 p.m. – 04:30 p.m.
Room	MANON
Sessions Chairs	Mariano Perneti   Eugénia Conceição das Neves Silva Correia

ID	title
205	<b>Definition of a Low-Cost Pavement Management Method based on a Dual Analytic Hierarchy Process</b> Nicholas Fiorentini   Giacomo Cuciniello   Pietro Leandri Massimo Losa
271	<b>Predicting the Coefficient of Friction as a Support Tool for Decision Making in Pavement Management System</b> José Breno Ferreira Quariguasi   Francisco Heber Lacerda De Oliveira   Minh-Tan Do   Manuela Genesseeux
264	<b>ANAS PMS (Pavement Management System) for Road Pavement Management</b> Stefano Oddone   Massimo Simonini   Marcello De Marco Stefano Drusin
270	<b>A “Big Data” Approach Towards Analysis and Causation of Pavement Surface Failure Mechanisms</b> Gary A. Cook   Helen K Bailey
257	<b>Innovation Pathways within Road Performance Management to Upgrade Investment Analysis: A Walkthrough of New Zealand and Philippine Resilience Landscapes</b> Jessica Vien S Mandi   Annisa Hasanah   Theunis Henning
283	<b>Innovative Pavement Contracts to Reduce CO<sub>2</sub>-Emissions in Norway</b> Even K. Sund   Thor Asbjørn Lunaas

### CONCURRENT TECHNICAL SESSION 3

Topic	<b>Road Materials and Pavements Bearing Capacity</b>
Day	#3, September 14 <sup>th</sup>
Time	09:00 a.m. – 11:00 a.m.
Room	AIDA
Sessions Chairs	Gianluca Cossale   Eugénia Conceição das Neves Silva Correia

ID	title
8	<b>Thermal Performance of Ultrathin Multi-Functional Overlay</b> Mauro Coni   Silvia Portas   Francesco Pinna   Francesca Maltinti
216	<b>Comparison of Bearing Capacity Measurements with the Traffic Speed Deflectometer (TSD) and Surface Characteristics on Intra-Urban Roads in Germany</b> Barbara K. Esser   Pahirangan Slvatham   Stefan Koppers
167	<b>Improved Approach to Accelerated Ageing of Asphalt Samples in the Laboratory</b> Greg White   Ahmed Abouelsaad
364	<b>Inductive Systems for Electric Vehicles: Optimization of the Charging Units Embedded into Road Pavement</b> Claudia Nodari   Misagh Ketabdari   Maurizio Crispino Emanuele Toraldo
318	<b>Evaluation of the Application of Tailing from Magnesite Extraction in Pavement by Adhesion Properties</b> Mateus S. Brito   Caio Cajazeiras Falcão   Lilian Gondim Suelly Barroso
346	<b>Experimental Analysis of Asphalt Concrete Modified with Polymeric Compounds Including Steel Slags as an Alternative to Basaltic Aggregates</b> Gaetano Bosurgi   Giovanni Bertino   Augusto Ciarlitti Clara Celauro   Matteo Fumagalli   Orazio Pellegrino Alessia Ruggeri   Giuseppe Sollazzo
174	<b>Probe Vehicle Data as Input Source for Road Maintenance</b> Björn Zachrisson   Johan Hägg; Håkan Frank   Johan Petersson Olle Noren

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 3

Topic	<b>Maintenance and Preservation Treatments</b>
Day	#3, September 14 <sup>th</sup>
Time	09:00 a.m. – 11:00 a.m.
Room	NORMA
Sessions Chairs	Margo Briessinck   Maurizio Diomedi

ID	title
337	<b>Software Application for Long-Term Monitoring and Assessment of Pavement Serviceability and Performance in Slovakia</b> Zsolt Boros   Norbert Dancs   Filip Buček   Zsolt Benkó
190	<b>Pavement Maintenance Backlog - How to Calculate and Use in Decision-Making?</b> Vesa Männistö
194	<b>Review and Analysis of Prediction Models for As-built Roughness in Asphalt Overlay Rehabilitations</b> Rodrigo Díaz   José Ramón Marcobal   Juan Gallego
292	<b>Use of Traffic-Speed Ravelling Data for Resurfacing Intervention on Open Graded Asphalt</b> Richard Wix   Chloe Ip   Lalinda Karunaratne
265	<b>Design and On-Site Non-Destructive Testing Method for Evaluating Lifespan Asphalt Concrete Pavement with Traditional, Recycled and Material with Additives</b> Stefano Oddone   Stefano Drusin   Luca Frezza Gianluca Salvatore Spinazzola   Cristina Tozzo
269	<b>Advanced Asphalt Pavements to Achieve Environmental Goals in Asset Management</b> Alexander Buttgerit   Daniel Gogolin   Stefan Gomolluch Maria Koordt

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 3

Topic	<b>Safety and Risk Issues</b>
Day	#3, September 14 <sup>th</sup>
Time	09:00 a.m. – 11:00 a.m.
Room	TOSCA
Sessions Chairs	Vittorio Nicolosi   Emanuele Toraldo

ID	title
304	<b>Improving the Criteria for Plans for Bridge Inspection</b> Larysa Bodnar
267	<b>Freeway Interchanges Maintenance Operations. Preliminary Safety Analysis of Connected Automated Vehicles Impact on Road Traffic Circulation</b> Tullio Giuffrè   Salvatore Curto   Andrea Petralia
207	<b>Skid Resistance and Braking Distance Revisited – The Case of Grinding</b> Roland Spielhofer   Matthias Hahn
352	<b>Safety Aspects of E-Scooters in Urban Areas: Preliminary Results on Citizens' Perception, Users' Behavior and Role of Pavement</b> Arianna Antoniazzi   Elena Davoli   Claudia Nodari Maurizio Crispino
181	<b>A Risk Analysis in The Event of a Fire in a Twin-Tube Road Tunnel with Considerations for Resilience</b> Ciro Caliendo   Isidoro Russo   Gianluca Genovese
SP1	<b>ARRB Systems, taking road infrastructure surveys to the next level</b> Simon Tetley

## CONCURRENT TECHNICAL SESSION 3

Topic	<b>Airport Pavements and Management</b>
Day	#3, September 14 <sup>th</sup>
Time	09:00 a.m. – 11:00 a.m.
Room	MANON
Sessions Chairs	Monica Meocci   Edoardo Mariani

ID	title
223	<b>Aviation Risk Assessment: Analyzing the Critical Boundary Conditions that Can Affect the Risk of Runway-Related Accidents</b> Misagh Ketabdari   Claudia Nodari   Maurizio Crispino Emanuele Toraldo
195	<b>Assessment of Maintenance and Rehabilitation Strategies in Airport Pavement and Life Cycle Cost</b> Rayssa de Sousa Carneiro   Francisco Heber   Lacerda de Oliveira
305	<b>The Setting Up of Milan Airports' Pavement Management System</b> Giacomo Ridondelli   Riccardo Lamperti   Maurizio Crispino Alessandro Marradi   Jacopo Leonardi   Marco Sclip Paolo Pasinetti
363	<b>The Determination of the Status Indices of Airport Pavements by Using High-Performance Machines as a Tool for the Programming of Maintenance and Requalification Activities of the Italian Military Airfields</b> Stefano Cimichella   Aniello Corcione   Claudio De Marchis Antonello Germinario
201	<b>Towards Efficient Airfield Pavement Surface Condition Monitoring Using Deep Learning Models</b> Ronald A. Roberts   Fabien Menant   Michael Broutin
252	<b>Assessment of Roughness Limit Based in Vertical Acceleration of Aircraft on Runways</b> Elisa Da Silva Sousa   Lucas Moreira Magalhães   Francisco Heber Lacerda De Oliveira
SP2	<b>AThermoplastic polymer additives for airport bituminous pavements. The Venice airport case study</b> Gilberto Del Zoppo

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 4

Topic	<b>Pavement Condition Measures and Models</b>
Day	#3, September 14 <sup>th</sup>
Time	11:30 a.m. – 01:30 p.m.
Room	AIDA
Sessions Chairs	Misagh Ketabdari   Gilberto Del Zoppo

ID	title
212	<b>Development of New Method for Detecting Partial Deformation and Subsidence of Porous Asphalt Surface Layer and Examination of New Management Criteria</b> Kiyohito Yamaguchi   Ryo Kato
353	<b>Indirect IRI Estimation Through Smart Tyre Technology</b> Gabriele Montorio   Massimiliano Sallusti   Stefano Melzi Davide Chiola   Federico Cheli   Benedetto Carambia
358	<b>E-PMS – Evolutive Pavement Management System. Overview on the Methodology Developed by Autostrade Per l'Italia (ASPI)</b> Davide Chiola   Benedetto Carambia   Cristina Tozzo Nicoletta Gasbarro   Paolo Spinelli
350	<b>Human-centered Evaluation with Biosignals for Localized Surface Roughness on Expressway Pavements</b> Kazuya Tomiyama   Marei Inagi
175	<b>Automation of PASER Condition Rating Through 3D Laser Scanning and Image Processing</b> Richard G. Fox-Ivey   John Laurent   Nhat-Tan Nguyen
SP3	<b>Wirtgen Group, latest developments of sustainable Cold Recycling Technology, experiences and job reports</b> Mike Marshall   Davide D'Onza



# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 4

Topic **Pavement Surface Characteristics and Measures**  
Day #3, September 14<sup>th</sup>  
Time 11:30 a.m. – 01:30 p.m.  
Room NORMA  
Sessions Chairs Alessandro Marradi | Luc Rens

### ID title

**206 A Correlation between Laser-based Device and Close-Range Photogrammetry Technique for Road Pavement Macrotecture Estimation**  
Mauro D'Apuzzo | Azzurra Evangelisti | Giuseppe Cappelli  
Vittorio Nicolosi

**217 Reference Calculations and Implementation of Mean Profile Depth**  
Thomas Lundberg | Ulf Sandberg | Luc Goubert | Wout Schwanen  
Robert Rasmussen

**220 Rutting Effects on Electrified Asphalt Roads Embedding Electric Vehicles Charging Units**  
Claudia Nodari | Maurizio Crispino | Emanuele Toraldo

**225 Two Methods for Sustainable and Safe Surface Textures for Pavements: Surface Treatment with Reactive Resins and Grinding)**  
Tim Alte-Teigeler | Martin Oeser

**226 The Fundamental Characteristics of Sideway-Force Skid Resistance Measurement Devices**  
Peter D. Sanders | Cormac Browne | Martin Greene  
Andrew Mumford

**SP4 The assessment of noise through the recognition of pavement surface characteristics**  
Enea Sogno

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 4

Topic **Road Materials and Construction**  
Day #3, September 14<sup>th</sup>  
Time 11:30 a.m. – 01:30 p.m.  
Room TOSCA  
Sessions Chairs Patrick Mallejacq | Emanuele Toraldo

- | ID  | title   |
|-----|---|
| 203 | <b>Medium to Long Term Stockpiling Performance of Bitumen Stabilised Materials (BSMs)</b><br>Niel N. Claassens   Kim Jenkins  |
| 204 | <b>Optimization of Reinstating Drill Core Holes - Laboratory Investigation and Accelerated Pavement Testing</b><br>Tim Schroedter   Pahirangan Slvapatham   Stefan Koppers<br>Hartmut Beckedahl                                 |
| 309 | <b>Field Evaluation of Different Rollers Effect on the Compaction of Hot Mix Asphalt Overlays Using an Electromagnetic Densitometer</b><br>Rasool Fazeli   Hamidreza Sahebzamani   Omid Ferdosian                               |
| 242 | <b>Winter Damage to Road Wearing Course</b><br>Heidi Kauffmann   Pascal Rossigny  |
| 255 | <b>The Use of Rejuvenating Bio Emulsion From Soybean Oil in Recycled Aggregates for Chip Seals</b><br>Ataslina de Paula Silva   Mateus S Brito   Suelly Barroso<br>Caio Falcão   Ronald William   Antônia Uchôa   Sandra Soares |
| 258 | <b>Laboratory and Field Evaluation of Modified Microsurfacing to Improve Durability and Lowering Destructive Environmental Impacts</b><br>Rasool Fazeli   Nader Mahmoodinia   Hamidreza Sahebzamani<br>Masoud Mahmoodinia       |

# TECHNICAL SESSIONS

## CONCURRENT TECHNICAL SESSION 4

Topic	<b>Quality Assessment of Pavement Surface Layers</b>
Day	#3, September 14 <sup>th</sup>
Time	11:30 a.m. – 01:30 p.m.
Room	MANON
Sessions Chairs	Ciro Caliendo   Zsolt Boros

ID	title
240	<b>Characterising Texture in Hot Rolled Asphalt Pavement Surfaces Using 3D Modelling Techniques</b> Raymond McGowan   Brian Mulry   Kieran Feighan Rory K. Donnellan
355	<b>Experiences in the Use of Automatic 3-D Distress Evaluation System for Pavement Monitoring in Argentina</b> Gustavo D. Mezzelani   Franco Piazza
251	<b>Are There New Ways to Improve the Surface Characteristics of Asphalt Mixtures? For Sure! By Functionalization Process</b> Iran Rocha Segundo   Cátia Afonso   Orlando Lima Jr. Salmon Landi Jr.   Elisabete F. Freitas   Joaquim O. Carneiro
259	<b>Alternative Methods of Road Condition Monitoring</b> Berthold Best   Helena Angerer
213	<b>A Methodology to Assist in the Management of Friction Supply on the Irish National Road Network</b> Emmanouil Kakouris   Enda Burton   Mark Tucker Ilaria Bernardini   Tom Casey
297	<b>Large Scale Noise Survey of the Walloon Road Network Using CPX Method: Second Measurement Campaign</b> Anneleen Bergiers   Sébastien Marcocci

# POSTER SESSION

## POSTER SESSION

Day #3, September 14<sup>th</sup>  
Time 02:30 p.m. – 03:30 p.m.  
Room NORMA

ID	title
191	<b>Shrinkage Crack Induction for The Study of Repair Agents in Rigid Pavements</b> Sebastian Lopez   Gloria Beltran   Henry Meneses Pedro F. B. Brandão
235	<b>A Tree-based Machine Learning Approach to Predicting IRI and RSL on Thailand's Highways Network</b> Theerada Rungruangjaroensuk   Ponlathep Lertworawanich Rajwanlop Kumpoopong   Wuttichai Amornprasitpol
198	<b>Road Asset Management with a Mobile Game and Artificial Intelligence</b> Markku M Knuuti   Konsta Dr. Sirvio   Vesa Männistö Susanna Suomela
202	<b>Comprehensive Road Infrastructure Measurements – The Solution Towards Next Generation Sustainable Road Infrastructure</b> Bjarne Schmidt   Simon Tetley   Verushka Balaram Jerome Daleiden
209	<b>Implementation of a Laboratory Design Method for Anti-slip Asphalt Pavements - FAPLAB</b> Victor Garcia Rabadan   Gloria Motos Cascales Jose Manuel Berenguer Prieto

## POSTER SESSION

ID	title
215	<b>The Development and Validation of the World First SWF/LCMS Combination</b> Iacopo Malquori   Eelke Vromans
218	<b>Pavement Friction Characterization with the Wehner &amp; Schulze (W&amp;S) Machine</b> Donatien de Lesquen du Plessis Casso   Julien Waligora Simon Pouget
224	<b>Airport Noise Emission: Models Comparison and Application on a Real Case Study</b> Misagh Ketabdari   Fazel Nasserzadeh   Maurizio Crispino Emanuele Toraldo
236	<b>Waste Plastic as Potential High Value Solution for Asphalt Road Applications</b> Edoardo Bocci   Tullio Caraffa   Arianna Stimilli   Maurizio Bocci
241	<b>Road Pavement Surface Friction Index Contactless</b> Stefano Oddone   Stefano Drusin   Gianluca Salvatore Spinazzola Cristina Tozzo
249	<b>Transparent Communication and Improvement of Cycle Path Maintenance for an Increase in Bicycle Use</b> Rainer Hess   Carsten C. Mahnel   Liliane Stein

## POSTER SESSION

- | ID  | title  |
|-----|--|
| 254 | <b>The Use of Bio-Emulsion from Soybean Oil in Maintenance of Flexible Pavements</b><br>Ataslina de Paula Silva   Caio Falcã   Mateus S. Brito   Ellen Serra<br>Suelly Barroso   Ronald Williams   Antônia Uchôa                       |
| 266 | <b>Quality Evaluation Management System for Road Infrastructures</b><br>Stefano Oddone   Gianluca Cossale   Luca Frezza<br>Salvatore Gianluca La Placa   Andrea Meo   Bruno Scrudato<br>Gianluca Salvatore Spinazzola   Cristina Tozzo |
| 275 | <b>The Relationship between Surface Defects and Structural Distress on A 50-year-old Japanese Toll Road</b><br>Keizo Kamiya  |
| 279 | <b>Management of Pavement Surface at Curve Section Using by Real Time Traction Tool</b><br>Kanakano Uchino   Nobuya Okamoto   Takahisa Fukushima<br>Rei Fujita   |
| 285 | <b>Comparison of Pavement Condition Mapping Systems</b><br>Sara Anastasio   Doreen Siebert   Dagfin Gryteselv   Trond Østen  |
| 289 | <b>Development and Implementation of a New Policy on the Management of Skid Resistance in Ireland</b><br>Brian Mulry   Rory K. Donnellan   Raymond McGowan<br>Stephen Smyth  |
| 293 | <b>Exhaustive Assessment of Asphalt Mixture Reinforcement with Waste Fibres</b><br>Helena Miera-Dominguez   Carlos Real-Gutierrez<br>Teresa Pomposo-Perez   Irune Indacochea-Vega<br>Pedro Lastra-González   Daniel Castro-Fresno      |

POSTER  
SESSION

ID	title
302	<b>Rejuvenating Agents vs Fluxing Agents: Their Respective Mechanisms of Action on a Binder Subjected to Multiple Aging Cycles</b> Shahin Eskandarsefat   Paolino Caputo   Cesare Oliviero Rossi Michele Porto   Valeria Loise   Eugenia Giorno Shahin Eskandarsefat   Loretta Venturini
310	<b>How Modern Petrographic Analysis of Roadstone Aggregate Can Provide a Better Understanding of Their Frictional Properties</b> Richard P. Unitt   Patrick Meere   Tom Casey   Brian Mulry
312	<b>New Procedure for Quality Assurance of Municipal Road Survey and Assessment Campaigns</b> Christiane Krause   Ulrich Pfeifer   Markus Stöckner Ute Stöckner
322	<b>A Prediction Model of the Coefficient of Friction for Runway Using Artificial Neural Networks</b> Mariana Myszak   Danilo Rinaldi Bisconsini   Jorge Durán Jose L Fernandes Jr   Lucas Moreira Magalhães   José Breno Ferreira Quariguasi   Francisco Heber Lacerda De Oliveira
327	<b>Principles for Using Wearing Courses in Terms of Skid Resistance</b> Pavla Nekulova   Leos Nekula   Josef Stryk
276	<b>A Study on the Association Between RLCBR and DCP Subgrade Moduli for Low Volume Road Evaluation</b> Supratim Kaushik   Anjan Kumar S. Teiborlang Lyngdoh Ryntathiang

## POSTER SESSION

ID	title
335	<b>The Multi-Speed Deflectometer: New Technology Developed for Traffic Speed Non-Destructive Structural Pavement Testing</b> Alessandro Marradi   Lily B. Grimshaw   Graham Salt
339	<b>Surface Heat Budget of Sixteen Pavement Samples on an Experimental Test Site in the Parisian Region</b> Sophie Parison   Maïlys Chaniel   Frédéric Filaine   Laurent Royon Martin Hendel
342	<b>Raveling Algorithm for PA and SMA Based on 3D Data</b> Willem van Aalst   Pieter Piscaer   Bram Vreugdenhil Frank Bouman   Marten van Antwerpen   Gert van Antwerpen Jan Baan
349	<b>Correlation Analysis of Pavement Damage on Orthotropic Steel Slabs of Road Viaducts Focusing on Road Structure and Traffic Environment</b> Kose Eri   Yasumoto Aoki   Ryuzo Kamishita
361	<b>Thermal Behaviour of Innovative Pavements for the Life Cool &amp; Low Noise Asphalt Project</b> Maïlys Chaniel   Sophie Parison   Martin Hendel   Laurent Royon
10	<b>Long-Term Performance-Based Maintenance Contracts to Secure the Maintenance of Existing Roads.</b> Christophe Nicodème   Jean-Claude Roffé
169	<b>Achieving Performance in Large Public Infrastructure Projects: The Case of Road Works in Senegal</b> Mohamed Laye



## POSTER SESSION

ID	title
184	<b>Road Maintenance</b> Massimiliano Rizzi   Roberto Galizia
313	<b>Cellulose Fibres for Better Performing Road Pavements</b> Patrizia Bellucci   Filippo Praticò   Giuseppe Chidichimo
165	<b>A New Challenge for Pavement Performance Assessment in Thailand</b> Auckpath Sawangsuriya   Harutus Phoban Theerada Rungruangjaroensuk