



## PRELIMINARY PROGRAMME

Venue: Escuela Técnica Superior Ingeniería de Caminos, Canales y Puertos, Salón de Actos, Floor -2. Avenida Severo Ochoa s/n.  
18071 Granada

|       | Monday 13 <sup>th</sup> June 2022 | Tuesday 14 <sup>th</sup> June 2022  |
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| 9:00  | <b>ARRIVAL AND REGISTRATION</b>   | <b>Comprehensive investigation on wood-based bio-binders: from the bio-oil properties to the mixture performance</b><br>Authors:<br>Lorenzo Paolo Ingrassia, Xiaohu Lu, Francesco Canestrari<br>Affiliations: Lorenzo Paolo Ingrassia and Francesco Canestrari --> Università Politecnica delle Marche (Ancona, Italy); Xiaohu Lu --> Nynas AB (Nynashamn, Sweden)  |
| 9:20  |                                   | <b>Application of fish scale powder as bio-materials in bituminous mixtures</b><br>Authors:<br>Ananth V Shedgeri <sup>1</sup> , Akash, R Darshan <sup>1</sup> , C K Gowda <sup>1</sup> , G Shiva Kumar <sup>1</sup><br><sup>1</sup> Department of Civil Engineering, Dayananda Sagar College of Engineering, Bengaluru-560078, India.   |
| 9:40  |                                   | <b>Biodiesel waste as biobinder for asphalt mixtures</b><br>Authors:<br>Ana Weir Vargas <sup>1</sup> , Ana Jiménez del Barco Carrión <sup>2</sup> , Clement Uguna <sup>3</sup> , Colin Snape <sup>3</sup> , Gordon D Airey <sup>1</sup><br><sup>1</sup> Nottingham Transportation Engineering Centre, Faculty of Engineering, The University of Nottingham, University Blvd, Nottingham NG7 2RD, United Kingdom<br><sup>2</sup> UNIVERSITY OF GRANADA– LabIC.ugr, Department of Construction Engineering and Engineering Projects, Avenida Severo Ochoa S/N, 18071 Granada, Spain<br><sup>3</sup> Faculty of Engineering, The University of Nottingham, University Blvd, Nottingham NG7 2RD, United Kingdom |
| 10:00 | <b>INTRODUCTION</b>               | <b>Experimental study on the performance properties of bio-based polymer modified binder</b><br>Authors:  |



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|              |  | <p>Riccardi, Chiara<sup>1</sup>; Wang, Di<sup>2</sup>; Massimo, Losa<sup>1</sup><br/> <sup>1</sup> Department of Civil and Industrial Engineering, University of Pisa, Largo L. Lazzarino, 56122 Pisa, Italy<br/> <sup>2</sup> Department of Civil Engineering, Aalto University, Rakentajanaukio 4, 02150 Espoo, Finland</p>   |
| <b>10:20</b> | <p><b>Biobinder: University Gustave Eiffel and Nantes experiences</b><br/>         Authors:<br/>         Emmanuel Chailleux<sup>1</sup> and Clemence Queffelec<sup>2</sup><br/>         Affiliations:<br/> <sup>1</sup> University Gustave Eiffel, Nantes, France<br/> <sup>2</sup> University of Nantes, Nantes, France</p>   | <p><b>Bio-polymer as a bitumen modifier</b><br/>         Authors:<br/>         Tabakovic, Amir<sup>1,2</sup>; Tamis, Jelmer<sup>3</sup>; van Vliet, Dave<sup>1</sup>; Suitela, Willem<sup>1</sup>; van Loosdrecht, Mark<sup>3</sup>; Leegwater, Greet<sup>1</sup><br/> <sup>1</sup> TNO, Department of Infrastructure &amp; Maritime, Structural Reliability Section, Stieltjesweg 1, 2628 CK, Delft, Netherlands.<br/> <sup>2</sup> Delft University of Technology, Faculty of Civil Engineering and Geosciences, Department of Materials, Mechanics, Management &amp; Design (3Md), Microlab, Stevinweg 1, 2628 CN, Delft, Netherlands.<br/> <sup>3</sup> Delft University of Technology, Faculty of Applied Sciences, Environmental Biology, Lorentzweg 1, 2628 CJ Delft, Netherlands.</p> |
| <b>10:40</b> | <p><b>Design and characterisation of recycled asphalt mixtures with biobinders</b><br/>         Authors:<br/>         Ana Jiménez del Barco Carrión<sup>a</sup><br/> <sup>a</sup>University of Granada– LabIC.ugr, Department of Construction Engineering and Engineering Projects, Avenida Severo Ochoa S/N, 18071 Granada, Spain</p>   | <p><b>Effect of various bio-based additives derived from tall oil on bitumen rheology</b><br/>         Authors:<br/>         Laurent Porot<sup>1</sup><br/> <sup>1</sup> Kraton Chemical BV</p>   |
| <b>11:00</b> | <p><b>Life Cycle Assessment of Bio-Recycled Asphalt Mixtures</b><br/>         Authors:<br/>         Davide Lo Presti<sup>b,h</sup>, Ana Jiménez del Barco Carrión<sup>a</sup>, Konstantinos Mantalovas<sup>b</sup>, Juliette Blanc<sup>c</sup>, Emmanuel Chailleux<sup>c</sup>, Pierre Horny<sup>c</sup>, Jean-Pascal Planche<sup>d</sup>, Laurent Porot<sup>e</sup>, Simon Pouget<sup>f</sup>, Christopher Williams<sup>g</sup>,<br/> <sup>a</sup>University of Granada– LabIC.ugr, Department of Construction Engineering and Engineering Projects, Avenida Severo Ochoa S/N, 18071 Granada, Spain<br/> <sup>b</sup>DIING - Department of Engineering, University of Palermo, Viale delle Scienze ed.8, Palermo 90128, Italy<br/> <sup>c</sup>LUNAM Université, IFSTTAR, Route de Bouaye CS4, 44341 Bouguenais Cedex, France</p> | <p><b>The EIFFAGE experience: industrial development of a bio-based range and feedback</b><br/>         Flavien Geisler<sup>1</sup>, Simon Pouget<sup>1</sup>, Julien Van Rompu<sup>1</sup>, Frederic Loup<sup>2</sup>, Florent Schrevel<sup>2</sup>, Maria Elena Hidalgo Pérez<sup>3</sup>, Romain Lictevoit<sup>3</sup><br/> <sup>1</sup>EIFFAGE Infrastructures, Research &amp; Innovation Department<br/> <sup>2</sup>EIFFAGE Infrastructures, Studies &amp; Research Center<br/> <sup>3</sup>EIFFAGE Infrastructures, Research &amp; Development Department</p>  |



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|              | <p><sup>d</sup>WESTERN RESEARCH INSTITUTE - 365 N 9th St, Laramie, WY 82072, USA</p> <p><sup>e</sup>KRATON - Transistorstraat 16, 1322 CE Almere, Netherlands</p> <p><sup>f</sup>EIFFAGE Infrastructures – Direction R&amp;D, 8 rue du Dauphiné CS74005, 69964 Corbas Cedex, France</p> <p><sup>g</sup>IOWA STATE UNIVERSITY – Department of Civil, Construction and Environmental Engineering, Iowa State University, USA Town Engineering Building, 394 Town Engineering, Ames, IA 50011, USA</p> <p><sup>h</sup>NTEC - University of Nottingham Faculty of Engineering, The University of Nottingham, NG7 2RD, United Kingdom</p> |   |
| <b>11:20</b> | <p><b>Biomaterials: An Opportunity for More Sustainable Bitumen Pavement Systems</b></p> <p>Authors:<br/>R. Chris Williams, Maxwell Staver, Ali Arabzadeh, Conglin Chen, Eric Cochran, Austin Hohmann, Michael Forrester, Baker Kuehl</p>  | <p><b>CHAPLIN collaboration for green roads: replacing bitumen by biobased alternatives</b></p> <p>Presenter: J.L. Groen, Program director Circular Biobased Delta.</p>         |
| <b>11:40</b> | <p><b>Multi-scale study of bio-binder mixtures as surface layer</b></p> <p>Authors:<br/>Kamilla Vasconcelos(a), Leidy V. Espinosa(a), Fernanda Gadler(a), Rafael V. Mota(a), Frederico V. Guatimosim(b), Ingrid Camargo(a), Rodrigo M. de V. Barros(b), Liedi L.B. Bernucci(a)</p> <p>(a) Polytechnic School of the University of São Paulo, Brazil<br/>(b) Copavel Consultoria de Engenharia Ltda., Brazil</p>  | <p><b>Bitumen beyond Oil: decentralized instant bio bitumen production</b></p> <p>Authors:<br/>Frank Albert</p> <p>Affiliation:<br/>ALBR3CHT Supply Concepts GmbH</p>           |
| <b>12:00</b> | <b>Lunch</b>   | <b>Lunch</b>  |
| <b>14:00</b> | <p><b>Pavement performance of asphalt mixture using bio-based binder</b></p> <p>Authors: Leni Leite (1), Luis Alberto Nascimento (2), Marcos Fritzen (1) and Margareth Cravo (2)</p> <p>Affiliations:<br/>(1) Federal University of Rio de Janeiro<br/>(2) Petrobras Research Center</p>   | <p><b>WORKSHOP. Discussion</b></p> <ul style="list-style-type: none"> <li>• Small group</li> <li>• Thematic discussion</li> </ul> <p>1 person per group presents at the end</p> |
| <b>14:20</b> | <b>Experience of the State of Ceará/Brazil on the Use of Biomaterials for Paving Applications</b>  |   |



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|              | <p>Authors:<br/>Gondim, Lilian<sup>1</sup>; Soares, Sandra<sup>2</sup>; Barroso, Suelly<sup>2</sup>; Brito, Mateus;<br/>Uchoa, Flavia<sup>2</sup>; Silva, Atlaslina<sup>2</sup><br/>Affiliation:<br/>1Federal University of Cariri, Av Ten. Raimundo Rocha 1639, Juazeiro do Norte-CE, Brazil, CEP 63048-080, lilian.gondim@ufca.edu.br<br/>2Federal University of Ceará, Ac. Público, 728 - Pici, Fortaleza - CE, Brazil, CEP 60020-181, sas@ufc.br, suelly@det.ufc.br, afj.uchoa@gmail.com, mateus.brito@det.ufc.br, atlaslina@det.ufc.br</p>  |  |
| <b>14:40</b> | <p><b>Investigation of the usage of Waste Incineration Fly Ash as Fine Aggregate in Asphalt Concrete</b><br/>Authors:<br/>Rouba A. Joumblat<sup>1</sup>, Zaher Al Basiouni Al Masri<sup>2</sup>, Joseph Absi<sup>3</sup>, Adel ElKordi<sup>4</sup><br/><sup>1</sup> PhD Candidate, Faculty of Engineering, Department of Civil and Environmental Engineering, Beirut Arab University, Beirut, Lebanon. r.joumblat@bau.edu.lb<br/><sup>2</sup> PhD Candidate, Faculty of Engineering and Architecture, Department of Civil and Environmental Engineering, American University of Beirut, Beirut, Lebanon. zsa14@mail.aub.edu<br/><sup>3</sup> Professor, Université de Limoges, IRCER, UMR-CNRS, 7315 Limoges, France. joseph.absi@unilim.fr<br/><sup>4</sup> Professor, Department of Civil and Environmental Engineering, Beirut Arab University, Beirut, Lebanon. a.elkordi@bau.edu.lb</p> |  |
| <b>15:00</b> | <p><b>Rejuvebit Project: trends in using bio-additives for a higher recycling rate of reclaimed asphalt in Flanders</b><br/>Authors:<br/><u>Wim Van den bergh (University of Antwerp)</u>, Geert Jacobs (University of Antwerp), Ben Moins (University of Antwerp), David Hernando (University of Antwerp), Karolien Couscheir (University of Antwerp), Stefan Vansteenkiste (Belgian Road Research Centre), Tine Tanghe (Belgian Road Research Centre), Ben Duerinckx (Belgian Road Research Centre).</p> <p><b>A comparative study on deformation characteristics and durability of asphalt concrete mixture containing 50 % RA and various rejuvenators</b></p>   | <p><b>Group presentations</b><br/><b>ROAD MAP</b><br/><b>RILEM group proposal?</b></p> |



**Authors:**

Jan Valentin (Ph.D.); Pavla Vackova (Ph.D.); Majda Belhaj (MSc.); Jiri Jindra; Liang He (Ph.D.)

Affiliations: Jan, Pavla, Majda, Jiri - Faculty of Civil Engineering, Czech Technical University in Prague; Liang, He - Chongqing Jiaotong University

**Bio-oil and lignin as valid solution for bio-binders**

**Authors:**

Elena Gaudenzi<sup>1</sup>, Fabrizio Cardone<sup>1</sup>, Xiaohu Lu<sup>2</sup>, Francesco Canestrari<sup>1</sup>

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**16:00**

**Closure of DAY1**

**CLOSURE**