



**International Symposium on  
Pavements for Carbon Neutral  
and Digitalized Roads**

**ISPACAD  
2023**

FINAL PROGRAM

# ISPACAD2023

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*ISPACAD2023 is supported by CIRCOPAV Project (funded by European Union's Horizon Europe research and innovation programme under the Marie Skłodowska-Curie Grant Agreement No 101072820).*



# ISPACAD 2023

# WELCOME

The International Symposium on Pavements for Carbon Neutral and Digitalized Roads (ISPACAD2023) is organised jointly by LabIC.UGR and Consejería de Fomento, Articulación del Territorio y Vivienda de la Junta de Andalucía.

ISPACAD2023 will be hosted for the first time in Spain on 1st March at the Laboratory of Construction Engineering of the University of Granada (LabIC.UGR) and will bring together academia, industry and public organisms, providing a unique opportunity for engineers and researchers to learn about the most advanced developments to achieve carbon neutral and digitalized roads. Some of the most prestigious professionals in the sector will speak about the key aspects concerning the technologies and strategies to be followed, as well as successful experiences already carried out in different countries such as France, Germany, Italy, Spain, UK or USA. In addition, CIRCO-PAV European project will be presented; a network focused on the development of connected pavements based on circular economy which is integrated by eight different universities and eight different companies, from eight different countries in three continents.

Finally, attendees who work on Carbon Neutral and Digitalized Roads will have the opportunity to present their research projects in a “short communications” session. For those attendees interested in doing PhD studies there will be a workshop on “Tips to succeed in your PhD project”.

Looking forward to meeting you all in Granada.

**Prof. M<sup>a</sup> Carmen Rubio-Gámez, Prof. Fernando Moreno-Navarro & Prof. Hervé Di Benedetto**

Chairs of ISPACAD 2023





# ISPACAD2023



## ISPACAD 2023 COMMITTEES

### Organizing Committee

**Prof. M<sup>a</sup> Carmen Rubio-Gámez (Chair)**

LabIC.UGR, Universidad de Granada, Spain

**Prof. Fernando Moreno-Navarro (Chair)**

LabIC.UGR, Universidad de Granada, Spain

**Prof. Hervé Di Benedetto (Co-Chair)**

Emeritus Professor ENTPE University of Lyon

### Local Organizing Committee (LabIC.UGR)

**Miguel del Sol Sánchez**

**Gema García Travé**

**Raúl Tauste Martínez**

**Jesús Martín García**

**Ana Jiménez del Barco Carrión**

**Ascensión Medina Martínez**



# VENUE

ISPACAD 2023 will be held at E.T.S. Ingenieros de Caminos, Canales y Puertos (Faculty of Civil Engineering) of the University of Granada.

Salon de Actos, Floor -2.

Address: Avda. Severo Ochoa, s/n, 18071, Granada (Spain)

Web: <https://etsiccp.ugr.es/>

Google Maps Location: <https://goo.gl/maps/UnAV72NVSQnRNJWc8>





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# PROGRAM

## 8:00-8:45 h. · Welcome & Registration

Registration will take place from 8:00 to 8:45 in the hall on floor -2 of the Civil Engineering Faculty building, where the “symposium bag” can also be collected.

## 8:45-9:30 h. · Opening Session

**D<sup>a</sup>. Pilar Aranda Ramírez.** Rectora Magnífica de la Universidad de Granada.

**D<sup>a</sup>. Mónica López Alonso.** Directora de la ETS de Ingenieros de Caminos, Canales y Puertos de la Universidad de Granada.

**D<sup>a</sup>. María Francisca Carazo Villalonga.** Consejera de Fomento, Infraestructuras y Ordenación del Territorio de la Junta de Andalucía.

**D. Xavier Flores García.** Secretario General de Infraestructuras, Ministerio de Transportes, Movilidad y Agenda Urbana.

**Prof. M<sup>a</sup> Carmen Rubio Gámez.** Directora LabIC.UGR, Chair ISPA-CAD2023.

## 9:30-11:00 h. · Session I: Carbon Neutral and Digitalised Roads

Chair: **Prof. Hervé Di Benedetto** (Emeritus Professor ENTPE University of Lyon)

### “CIRCOPAV Project”

Prof. M<sup>a</sup> Carmen Rubio-Gámez, Director of Laboratory of Construction Engineering of the University of Granada (LabIC.UGR), University of Granada, Spain

### “Digitized Roads: Recent Advances and Future Directions”

Prof. Bill Buttlar, Director of Missouri Center for Transportation Innovation, University of Missouri, USA



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## **“Sustainable and Resilient Pavements under a Changing Climate”**

Prof. Jo Sias, Director of the UNH Center for Infrastructure Resilience to Climate, University of New Hampshire, USA

### **11:00-11:30 h. · Coffee Break**

Coffee break will be held in the hall on floor -3 of the Civil Engineering Faculty building, offered by the catering “Ruta del Veleta”.

### **11:30-13:00 h. · Session II: European Experiences**

Chair: **Prof. Francisco Gámiz Pérez** (Council of the Research Centre for Information and Communications Technologies CITIC-UGR, University of Granada, Spain)

#### **“The experience on carbon neutral and digitalized roads in UK”**

Prof. Gordon Airey, President of European Asphalt Technology Association (EATA) and Director of Nottingham Transportation Engineering Centre (NTEC), University of Nottingham, UK

#### **“The German experience on carbon neutral and digitalized roads in Germany”**

Prof. Michael Wistuba, Director of Braunschweig Pavement Engineering Centre, Technical University of Braunschweig, Germany

#### **“The experience on carbon neutral and digitalized roads in France”**

Dr. Simon Pouget, Research and Innovation Director, Eiffage Infrastructures, France

#### **“Contributions to carbon neutral and digitalized roads in Italy”**

Prof. Gabriele Tebaldi, Professor in Pavement Engineering, Università di Parma, Italy

**“The experience on carbon neutral and digitalized roads in Spain”**

Ministerio de Transportes, Movilidad y Agenda Urbana, Spain

**13:00-14:00 h. · Session III: MASAI Roads**

Chair: **D. Juan José Potti**, President of EAPA (European Asphalt Pavement Association)

**“MASAI: a strategy for the future of the Andalusian road network”**

D. Enrique Catalina Carmona, Director General de Infraestructuras, Junta de Andalucía, Spain

**“MASAI in road construction and rehabilitation projects”**

D. Alejandro Jiménez-Espada González (Subdirector de la Dirección General de Infraestructuras, Junta de Andalucía, Spain)

**“MASAI knowledge transfer: from research to implementation”**

Prof. Fernando Moreno Navarro, Subdirector del Laboratorio de Ingeniería de la Construcción de la Universidad de Granada (LabIC. UGR), Universidad de Granada, Spain

**“MASAI, the industry point of view”**

D. Vicente Pérez Mena. Asphalt Technical Director, CEPESA, Spain.

**14:00-15:30 h. · Lunch**

Lunch will be held in the hall on floor -3 of the Civil Engineering Faculty building, offered by the catering “Ruta del Veleta”.



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## 15:30 – 17:00 h. · Session IV: Short Presentations on Carbon Neutral and Digitalized Roads

Chair: **Prof. Miguel Del Sol Sánchez** (Associate Professor, Faculty of Civil Engineering, LabIC.UGR, University of Granada)

- **Life Cycle Assessment to cut down greenhouse gas emissions and increase carbon sinks to lessen the impact from climate change.** Presenter: Rodríguez Alloza, A. (SPAIN).
- **Small strain thermomechanical behaviour of pavement materials and structures: LVE characterization using wave propagation and advanced fatigue analysis.** Presenter: Sauzeat, C.; Mangiafico, S. (FRANCE).
- **Asphalt plant technologies for the manufacturing of sustainable asphalt mixtures.** Presenter: Uguet Canal, N. (SPAIN).
- **Understanding life cycle carbon footprint of asphalt pavement.** Presenter: Porot, L. (FRANCE).
- **Cellulose fiber additives for the manufacture of sustainable bituminous mixtures.** Presenter: Nuñez, R. (SPAIN).
- **Evaluation of Road Pavements Sustainability using Life Cycle Sustainability Assessment (LCSA) as methodology and Building Information Modeling (BIM) for data.** Presenter: Buttitta, G. (ITALY).
- **Materiales Ecológicos para mezclas Asfálticas.** Presenter: Sanz Coll, M. (SPAIN).
- **Influence of ageing and adhesion on properties of foaming asphalt mixtures with reused materials.** Presenter: Alsarayreh, D. (JORDANIA).
- **Sustainable pavements for climate change mitigation in cities.** Presenter: García Rabadán, V. (SPAIN).



- **Infraestructuras regenerativas: más allá de la sostenibilidad.**  
Presenter: Martín-Portugués, C. (SPAIN).
- **Bio-Recycling of asphalt mxtures at decreased temperatrues.**  
Presenter: Jimenez del Barco, A. (SPAIN).
- **Dry process rubberized asphalt using ECR technology.** Pre-  
senter: De León, L. (SPAIN).

### **17:00-17:30 h. · Coffee Break**

Coffee break will be held in the hall on floor -3 of the Civil Engineering Faculty building, offered by the catering “Ruta del Veleta”.

### **17:30- 18:15 h. · Session V WORKSHOP “Tips to succeed in your PhD project”**

This session has been specially designed for PhD students from CIRCOPAV and other Doctoral Programs. Eminent professors from different universities will give advice about the most effective ways of achieving PhD success. In this session, the following topics will be addressed:

- **“How to succeed with your PhD”**
- **“How to succeed in industry making the most of your PhD”**
- **“How to succeed after your PhD in an academic career at University”**

**Prof. Hervé Di Benedetto**, Emeritus Professor ENTPE University of Lyon, France

**Prof. Manfred Partl**, Partl Road Research Consulting Adjunct Professor (ret), Dr Sc. techn., Switzerland

**Prof. Davide Lo Presti**, Associate Professor of Pavement Engineering, Università degli Studi di Palermo, Italy

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**18:15-18:30 h. · Closing Session**

**Prof. M<sup>a</sup> Carmen Rubio Gámez.** Chair ISPACAD2023.

**Prof. Fernando Moreno Navarro.** Chair ISPACAD2023.

**Prof. Hervé Di Benedetto.** Chair ISPACAD2023.

**20:00-23:00 h. · Gala Dinner**

ISPACAD 2023 Gala Dinner will be held in “Palacio de Quinta Alegre”.

Address: Av. de Cervantes, 27, 18008 Granada.

<https://goo.gl/maps/BP6ooUdnYD31gioz9>



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Granada, **March, 1st** 2023