



# ISCHP 24

**INTERNATIONAL SCIENTIFIC CONFERENCE  
ON HARDWOOD PROCESSING**

**30<sup>th</sup> SEPTEMBER TO 02<sup>nd</sup> OCTOBER**

**COIMBRA, PORTUGAL**



# WELCOME

Dear participants of the 8<sup>th</sup> edition of the International Scientific Conference on Hardwood Processing (ISCHP) – 2024, Coimbra - Portugal

Following Canada (2007), France (2009), the USA (2011), Italy (2013), Canada (2015), Finland (2017) and The Netherlands (2019), is with great honor that the University of Coimbra in Portugal, in collaboration with SerQ – Innovation and Competence Forest Centre, hosts this ISCHP 2024. After a 5-year pause, is now time to bring together experts, scientists, government-industry representatives, suppliers and customers around the world to discuss challenges and opportunities in hardwood processing, and share recent developments, methodologies, technologies and innovative works in this valuable area.

We thank you for your presence and contributions. You are the key to the success of this event.

Welcome everyone and have a great conference!

On behalf of the Organizing Committee,



# COIMBRA



VENUE

Student Hub - University of Coimbra



Google Maps



More Information



SITE

# ORGANIZING INSTITUTIONS



# ADDITIONAL INFORMATION

## • 29<sup>th</sup> of September 2024

17:30 - 20:00 | Loggia Restaurant

Registration and Welcome Reception



Google Maps



Social Programme UC - Guided visit to Baroque Library, Royal Palace and Saint Michel Chapel - Baroque Organ

## • 30<sup>th</sup> of September to 1<sup>st</sup> October 2024

Conference Venue - Student Hub

## • Lunch Break

Centro Cultural Dom Dinis



Google Maps



## • Conference Dinner

Hotel Quinta das Lágrimas, Coimbra



Google Maps



## • 2<sup>nd</sup> of October 2024

TECHNICAL TOUR

Sofalca and Ribeira da Foz Biodiversity Station

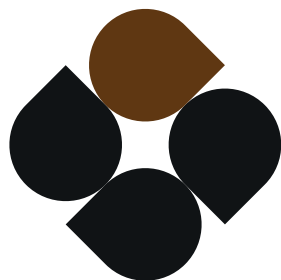
\*Comfortable shoes and clothing are recommended

CHECK EVENT MAP - LAST PAGE





**GOLD SPONSOR**



**SOFALCA**

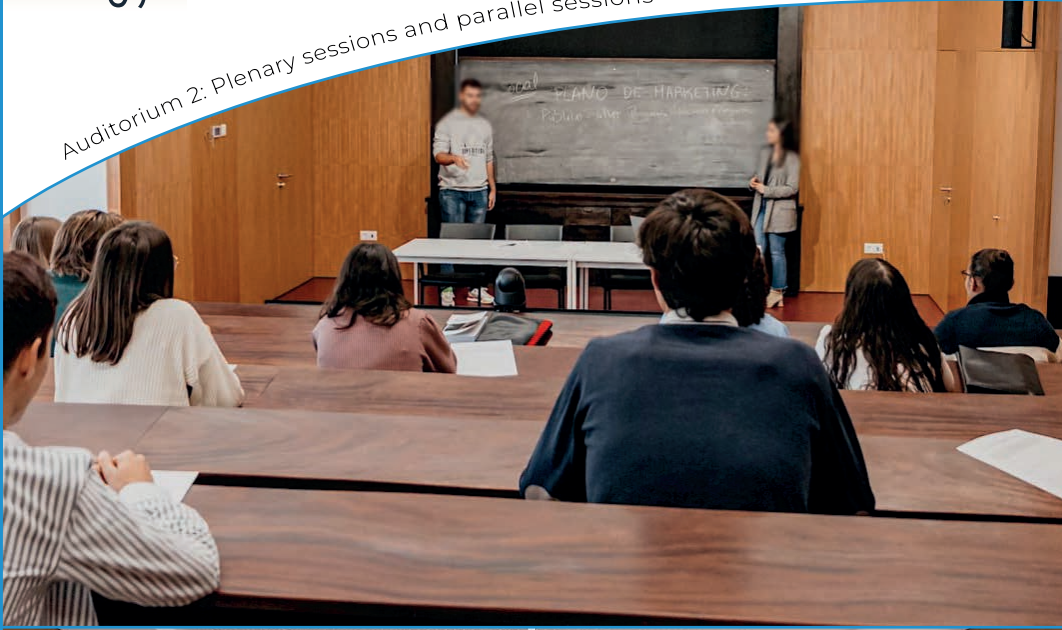
**SILVER SPONSORS**



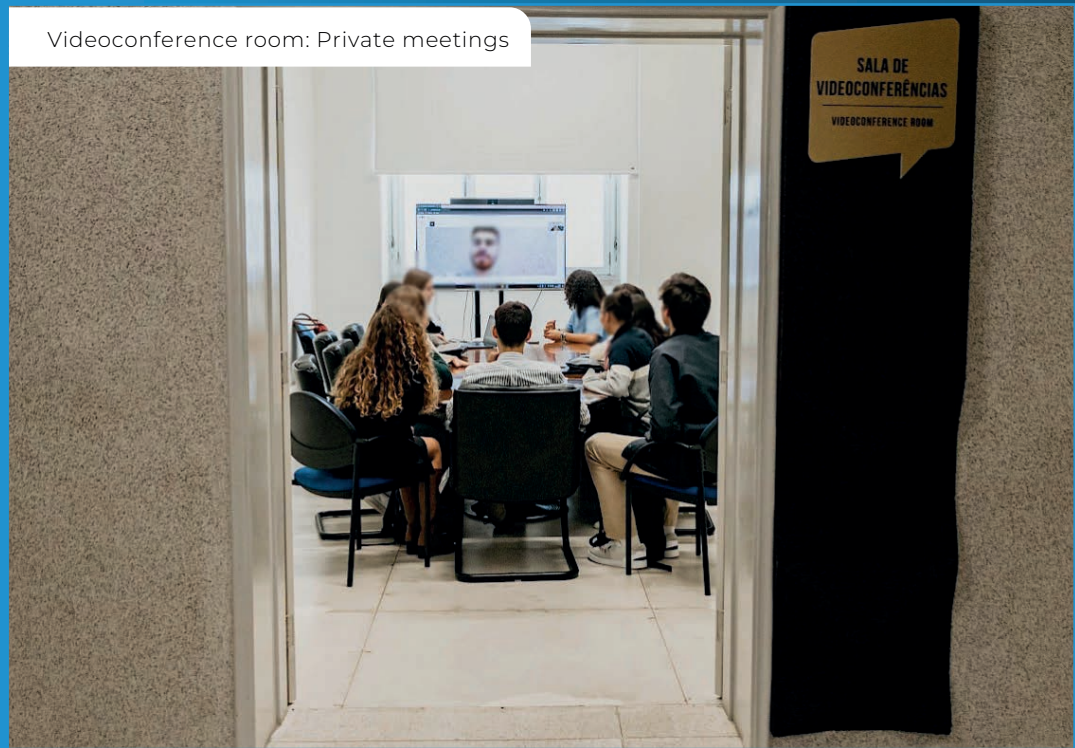
**BRONZE  
SPONSOR**



Auditorium 2: Plenary sessions and parallel sessions



Videoconference room: Private meetings



Design Thinking Lab: Parallel sessions

# PROGRAMME

30<sup>th</sup> of September 2024

08:15 Registration  
9:00 Opening Session  
9:30 **A decade review on hardwood composites and their research developments**  
**Pierre Blanchet** | Moderator: Wolfgang Gard

Auditorium 2

## PLENARY SESSION

10:15 Coffee-break



**Session I.1 - Species, Properties, Markets and Quality.**  
**Moderator: Roque R. Soalleiro**

Auditorium 2

10:45 Trends and Outlook for the Hardwood Log Market in South Korea  
**KiDong Kim**

11:00 Forest and Forest Products Sector Development Based on Hardwood Plantations in Vietnam  
**Nguyen Bao Ngoc**, Bui Duy Ngoc, Ha Tien Manh, Vu T Hong Tham, Nguyen Thanh Tung, Le Xuan Phuong, Henrik Heräjärvi, Veikko Möttönen and Martti Venäläinen

11:15 Use of Amazonian hardwood in timber structures, Brazil  
**Roberto Lecomte** and Sheila Beatriz

11:30 State of the art of the hardwood production in Europe and Spain and the challenges for a hardwoods-based sector in Galicia  
**Vanesa Baño**, Uwe Kies, Mercedes Rois, Francisco Pedras, Fernando Sanz and Anne Toppinen

11:45 Value Chain Analysis of Domestic Oak Wood Processing in the Republic of Korea  
**Yoon-Seong Chang** and Hee Han

12:00 Hardwoods in the United Kingdom – Considerations When Looking to Future Planting and Future Value Chains  
**Daniel Ridley-Ellis** and Marlene Cramer



**Session V - Hardwood non-structural applications, chemical and modification processes. Moderator: Meng Gong**

Design  
Thinking  
Lab

Assessment of fire retardants and treatment methods on the reaction to fire and bonding properties of veneers from aspen and silver birch  
**Percy Alao**, Adekunle Olusoji, Heikko Kallakas, Alar Just and Jaan Kers

A study on compliance with ISPM 15 of HT treatments applied to beech packaging materials  
**Cremonini C.**, **Ruffinatto F.**, Corso A. and Zanuttini R.

Utilization of cascade-processed willow fiber residues in insulation panels  
**Jenna Frantsi**, Karita Kinnunen, **Joona Lampela**, Jani Lehmonen, Elina Kettunen, Kristiina Lång, Risto Korpinen, Kalle Kaipainen, Petri Kilpeläinen and Tuula Jyske

Use of NIR spectroscopy and partial least squares regression for prediction of chemical properties of willow biomass  
**Bilel Bouaziz**, **Ahmed Koubaa**, Cyriac Mvolo and Sana Koubaa

Chemical and Thermogravimetric Characterization of Chestnut Tree Biomass Waste: Towards Sustainable Resource Utilization in the Tannin Industry  
**Jasmina Jusic**, Tommaso Giannoni, Florian Zikeli, Swati Tamantini, Valeria Pierpaoli, Marco Barbanera, Manuela Romagnoli  
Chemical Acceleration of Colour Change in Aspen and Birch Wood  
**Joona Lampela**, Markku Keinänen, Antti Haapala, Olusegun Akinyemi and Veikko Möttönen

12:15 Lunch



14:00 **Hardwoods in Engineering: Properties, grading, and applications**  
**Jan-Willem van de Kuilen** | Moderator: Alfredo M. P. G. Dias

## PLENARY SESSION

Auditorium 2

### Session III.1 - Hardwood Product Development Performance.

**Moderator: Brand Wessels**

Auditorium 2

14:45 Shear strength and stiffness of glued-laminated timber made from European ash (*Fraxinus excelsior* L.)

**Pedro Palma**, René Steiger, Thomas Strahm, and Ernst Gehri

15:00 Use of Trembling Aspen Lumber to Produce Cross-laminated Timber: Bending Performance

Dawei Wang, Mengyuan Zhang, **Meng Gong**, and Ying-Hei Chui

15:15 Technological Properties of Paulownia and mixed Poplar-Paulownia Plywood

**Michela Nocetti**, Michele Brunetti, Irene Criscuoli, Pasquale Murrone, Federico M. Stefanini and Giacomo Goli

15:30 Bending properties of LVL made by Eucalyptus globulus Labill. and its potential for hybrid glulam beams

**Carlos Martins** and Alfredo M. P.G. Dias

15:45 Estimation of damage accumulation of in-service azobé sheet piles

**Abhijith Kamath**, Michele Mirra, Geert Ravenshorst and Jan-Willem van de Kuilen

16:00 Coffee-break

### Session I.2 - Species, Properties, Markets and Quality.

**Moderator: Vanesa Baño**

Auditorium 2

16:30 Tracheid effect using 650 nm laser on three Malaysian tropical heavy hardwood species: balau, chengal, and merbau

**Tan Chiat Oon**, Shigenobu Ogata, Ng Siew Cheok, Yap Hwa Jen, Mohd Nor Zamri Mat Amin, Zuriani Usop, Mohd 'Akashah Fauthan, Khairuddin bin Mahalil, Liew Shaer Jin and Soo Jin Xue

16:45 Marking oak, chestnut and birch trees for thinning in Galician native broadleaf forests (NW Spain)

Xabier Bruña García, Francisco Pedras Saavedra, Gonzalo Piñeiro Veiras, Mercedes Rois Díaz, Marta Seijo Figueroa, Hugo Rodríguez García, Carlos Rodríguez González, **Roque Rodríguez Soalleiro**

17:00 Physical and morphological characterization of clones of eucalyptus wood (*Eucalyptus camaldulensis* Dehnh.) from seaside windbreaks in Tarquinia (Central Italy)

**Swati Tamantini**, Alessandra Peruzzo, Sara Bergamasco, Jasmina Jusic, Oluwasegun Peter Akinfolahan, Luca Scarnati and Manuela Romagnoli

17:15 Fast growing Eucalyptus logs for engineered wood products: Variation in end-splitting and dynamic MOE

Vladislava Muselíková, Bruno Balboni, Justin Erasmus, Michele Brunetti, Michela Nocetti and **C. Brand Wessels**

17:30

19:30 Conference Dinner

### Session II.1 - Hardwood Processing.

**Moderator: Daniel Ridley-Ellis**

Design  
Thinking  
Lab

Evaluation of bonding shear strength of commercial adhesives on Canadian hardwoods

**João Vítor Felipe Silva**, Antoine Cogulet and Pierre Blanchet

Optimizing Plywood Strength: Evaluating the Impact of Wood Densification on Load-Carrying Capacity and Material Efficiency Using Low-Quality Hardwoods

**Tolgay Akkurt**, Heikko Kallakas, Alexander Scharf, Anti Rohumaa and Jaan Kers

Feasibility of using eucalyptus wood and castor oil adhesive to produce OSB panels

**Estefani Sugahara**, Andre M. A. Dias, Edson C. Botelho, Cristiane I. Campos and Alfredo M. P. G. Dias

A species independent strength grading approach for hardwood lamellas

**Andriy Kovryga**, Andreas Rais, Martin Bacher, Ani Khloian Sarnaghi and Jan-Willem van de Kuilen

Assessment of *Populus tremuloides* (Michx) quality aspect and mechanical characteristics for glulam production

Oscar Legrais, **João Vítor Felipe Silva**, Antoine Cogulet, Pierre Blanchet and Clément Boudaud

### Session IV.1 - Hardwood connections, modeling and standards.

**Moderator: João Negrão**

Design  
Thinking  
Lab

The use of shank-containing screws to provide the adhesion pressure needed during CLT manufacturing using young Eucalyptus wood

**Bruno Balboni**, Jesse Favis, Johannes van Schalkwyk, Michele Brunetti, Michela Nocetti and C. Brand Wessels

Withdrawal strength of screws perpendicular to the grain in tropical hardwoods

Geert Ravenshorst, Robert Nijkamp, Peter de Vries, Carmen Sandhaas and **Jan-Willem van de Kuilen**

Steel-Timber Dowel-Type Connections in Beech LVL – Experimental Investigations and Design Proposal

**Lea Buchholz** and Ulrike Kuhlmann

Irish birch dowels - Production and material characterisation for engineered wood products

David Gil-Moreno, Liam Butler, Peter Devenney, Roohollah Mohammadi Pirooz, **Song Ge** and Patrick J. McGetrick

Assessing Mechanical Properties and Gluing Performance of Albizia glaberrima Wood

Aiuba Suleimana, **Jorge M. Branco** and Aires Camões

# PROGRAMME

1<sup>st</sup> of October 2024

08:30 Registration



## Session III.2 - Hardwood Product Development Performance. Moderator: Pedro Palma

Auditorium 2

09:00 Mechanical-physical properties of steam bent timber  
**Jan-Willem van de Kuilen**, B. Koppenens, W.F. Gard and V. Antonelli

09:15 Mechanical characterization of homogeneous and hybrid beech-silver fir glue-laminated timber beams made with short supply chain timber  
**Martina Sciomenta**, Alfredo Peditto, Michela Nocetti, Michele Brunetti, Manuela Romagnoli, Massimo Fragiaco and Giuseppe Scarascia Mugnozza

09:30 Mechanical properties of sweet chestnut sawn wood and glulam performance  
Carlos Martins, Cláudio Ferreira, **Sandra R. S. Monteiro** and Alfredo M. P.G. Dias

09:45 Mechanical Properties of strip-like laminations made from hardwood  
**Simon Lux**, Johannes Konnerth and Andreas Neumüller

10:00 Experimental assessment of glulam beams made by Spanish beech  
**Carlos Martins**, Cláudio Ferreira, Mario Azaña, Gonzalo Cabrera, Vanesa Baño and Alfredo M. P. G. Dias

10:15 Coffee-break

10:45 **Metamorphosis from the cork oak tree to the future, already in the present.**  
**Paulo Estrada** | Moderator: Sofia Knapic

11:30 **Machine Strength Grading with machine-controlled and output-controlled settings.**  
**Pieter Rozema** | Moderator: To be defined

12:00 Lunch



## Session II.2 - Hardwood Processing. Moderator: To be defined

Design  
Thinking  
Lab

Characterization of brittleheart in tropical hardwoods and its influence on strength properties  
**Wolfgang Gard**, Hanna Kuisch and Jan-Willem van de Kuilen

Effect of surface preparation methods on tensile shear strength of adhesively bonded joints using polyurethane adhesive  
Naumovski Luka, **Capuder Martin**, Azinović Boris and Sandak Jakub

Microwave Drying Process of Portuguese Eucalyptus Wood: The Effects in the Preservative Retention and Mechanical Properties  
**Fernando Mascarenhas**, Alfredo M. P.G. Dias, André Christoforo and Rogério Simões

Investigation of VOC Emissions from Urea-Treated Maple during Thermal Treatment Using Particle Sensors  
**Daniel Cordes**, Christoph Munk and Alexander Pfriem

Verification of Strength and Adhesive Performance of Glued Laminated Timber Hardwood and Softwood Composite from Nagano Prefecture, Japan  
**Akira Saito**, Hiroto Suesada, Yoshihiro Hosoo and Kenta Yamaguchi

Auditorium 2

## PLENARY SESSION



14:00 **Structural assessment and intervention in historic buildings with hardwood species. Tiago Ilharco** | Moderator: Michela Nocetti

**Session I.3 - Species, Properties, Markets and Quality.**  
**Moderator: Sofia Knapic**

Auditorium 2

14:45 Linking tree shape with wood quality – a prediction of wood density from tree crown parameters in the forest

**Tockner Andreas**, Gollob Christoph, Kraßnitzer Ralf, Ritter Tim, Wimmer Rupert and Nothdurft Arne

15:00 Sustainable quality of timber and climate change.  
Case study of New Aquitaine and the Spanish Basque Country

**Devignes Cannelle**, Le Normand Régis and Barlet Aline

15:15 Influence of fibre and macrostructural properties on hardwood toughness: branch versus stem

**Tobias Nenning**, Johannes Konnerth, Wolfgang Gindl-Altmutter, Michael Grabner, Christian Hansmann, Lukas Eder, Sabine Bodner and Maximilian Pramreiter

15:30 Closure session

16:00 Coffee-break

**Session IV.2 - Hardwood connections, modeling and standards.**  
**Moderator: Sandra R. S. Monteiro**

Design  
Thinking  
Lab

Elasto-mechanical properties of black locust laminated veneer lumber

**Hirschmüller Sebastian** and Samuel Blumer

Estimation of the partial compression performance of Japanese hardwoods perpendicular to the grain

**Hiroto Suesada**

Elastic constants for finite element modeling of beech and poplar

Gonzalo Cabrera, Gonzalo Moltini and **Vanessa Baño**

## PLENARY SESSION

Auditorium 2

## POSTERS

Field Evaluation of Termite Resistance of Tropical Hardwood Kempas (Koompassia malaccensis) Treated with New Generation of Biobased Solutions

Daouia Messaoudi, Andrew H.H. Wong and Alexandre Fossier

Comparative study on technological properties of some non-native hardwood in Mediterranean area

Antonio Zumbo , Salvatore F. Papandrea, Maria F. Cataldo and Andrea R. Proto

Acoustic properties of thermally treated and furfurylated European hardwood species

Christoph Munk , Raphael Biewer, Jérémie Damay, Michael Jousserand, Philippe Gérardin and Alexander Pfriem

Harvesting oak and birch trees in thinning of native Galician broadleaved forests with forestry machines

Oscar González-Prieto, Francisco Pedras Saavedra, Gonzalo Piñeiro Veiras and Mercedes Rois Díaz

Physico-chemical and morphological characterization of hybrid of Paulownia wood (Cotevisa 2®) from Corinaldo, Marche (Central Italy)

Swati Tamantini, Oluwasegun Peter Akinfolahan, Angela Balzano, Maks Merela, Mara Sarlatto, Segoloni E., Pierpaoli V. and Manuela Romagnoli

Assessment of Wood Drying Behavior in Kiln, for 14 Forest Species

Maria Emília Silva and José Luís Lousada

## TECHNICAL TOUR

2<sup>nd</sup> of October 2024

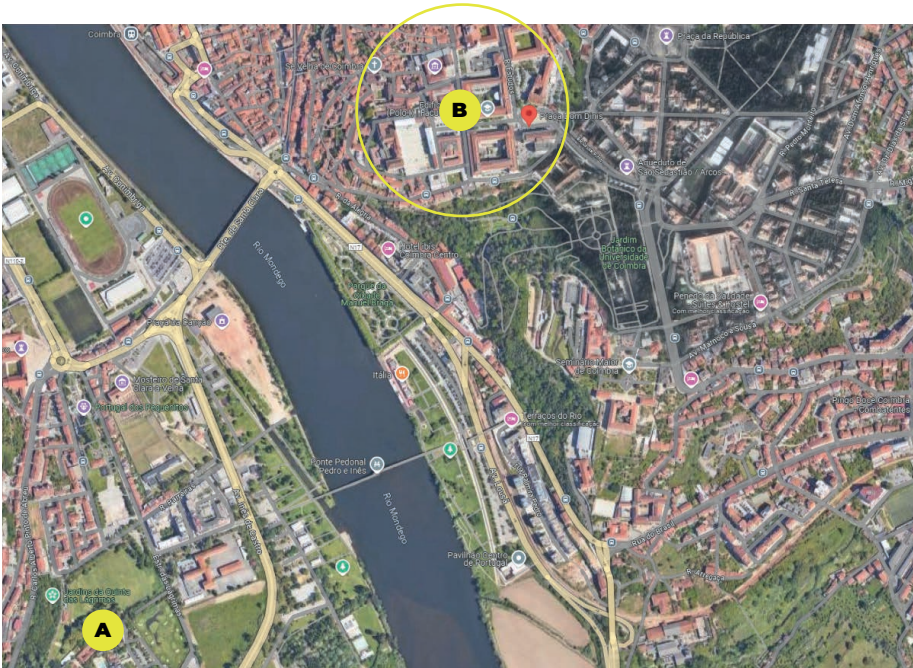
\*The Organizing Committee highly recommends the use of comfortable shoes and clothing.

08:15 Departure from Coimbra  
10:00 Arrival at Sofalca  
13:00 Lunch in Abrantes  
15:00 Visit to Biodiversity Station  
from Ribeira da Foz

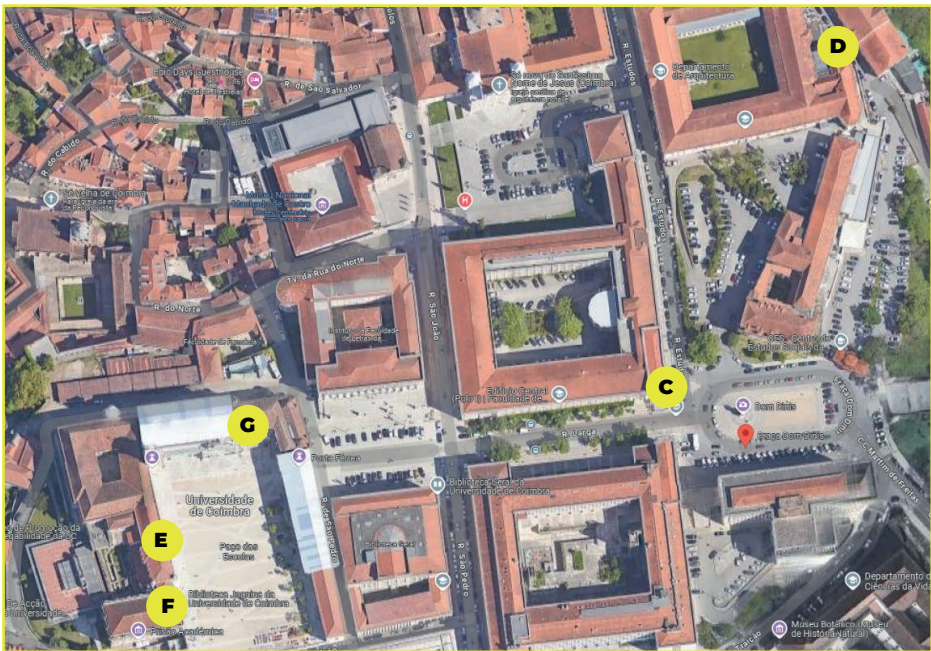
16:30 / 17:00 Departure from  
Biodiversity Station  
18:30 / 19:00 Arrival in Coimbra

# EVENT LOCATION ON MAP

COIMBRA OVERVIEW



APPROXIMATE MAP OF THE CONFERENCE VENUE



A

Quinta das Lágrimas Hotel

B

Conference Venue

Google Maps

Google Maps

C

Student Hub

D

Lunch

E

Saint Michael's Chapel

F

Baroque Library

G

Royal Palace



# ISCHP 24

INTERNATIONAL SCIENTIFIC CONFERENCE  
ON HARDWOOD PROCESSING

