



Waste biorefinery technologies for accelerating sustainable energy processes

WIRE COST Action 1st Training School

“Waste biorefineries: feedstock, conversion technologies, products and applications”

15-19th July, Lisbon & Portalegre, Portugal

Locations & Instructions

Day 1

NOVA University of Lisboa, School of Science and Technology:

The NOVA School of Science and Technology (NOVA FCT) is one of the three largest and most prestigious schools of Engineering and Sciences in Portugal. It is located 15 minutes away from Lisbon, is renowned for its excellence in research, for the quality of its courses and for the large employability of its graduates (graduates, masters, doctors).

NOVA FCT, with about 8500 students, it has one of the best university campuses and is distinguished by a culture of excellent teacher-student relationship and an intense academic life with many different cultural and sport activities.

All courses are accredited by the A3ES (Agency for Assessment and Accreditation of Higher Education) and all Engineering courses are recognized by the Order of Engineers, FEANI (Federation of Professional Engineers that unites national engineering associations from 33 European Higher Education Area (EHEA) countries) and EUR-ACE (European Accredited Engineer).

NOVA FCT is structured in 13 Departments and 16 Research Centers, offering 117 study cycles (19 Bachelor's, 11 Integrated Master's, 49 master's and 32 PhDs).

Its scientific production, resulting from the publication of many articles in international scientific journals of great demand and quality, gives it wide international recognition (the value of the scientific production index - SciVal Citation Impact - is 1.35, NOVA FCT is 35% above the world average). This performance allows the Faculty to integrate the main technological university networks, such as the CESAER network and to participate in consortiums with European and US universities, namely MIT, CMU, and the University of Texas.

The participation in 9 COLABs and the 17 ERC scholarships obtained by NOVA FCT researchers (the largest concentration of these laboratories and scholarships in Portuguese Universities), demonstrates how the NOVA School of Science and Technology is oriented towards the future and based on vanguard international research.



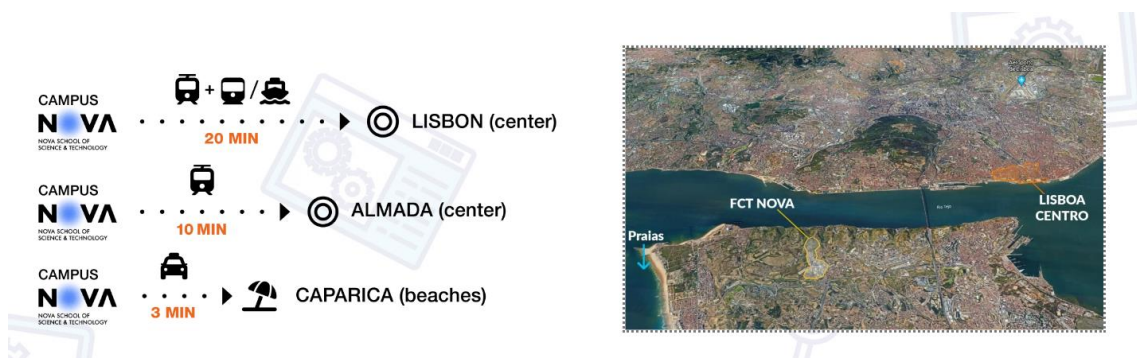
Waste biorefinery technologies for accelerating sustainable energy processes



How to get to NOVA School of Science and Technology:

The NOVA School of Science and Technology *campus* is located at Monte de Caparica, in the municipality of Almada. This *campus* is the largest in Europe, housing modern school, laboratory, administrative and social buildings, as well as green spaces.

The campus benefits from the public transport network, which includes combined services of bus (bus), train (train), boat and light rail (terminal station “Universidade”) which is located next to one of NOVA School of Science and Technology’s entrances.



1. From Lisbon (Humberto Delgado Airport):

By Metro (subway): The Lisbon airport has an underground station (metro) with a direct line to the city centre. The Red Line (Aeroporto – S. Sebastião) takes you to the downtown in about 20 minutes. The Metro network will allow you to move around the city at ease. To arrive at NOVA School of Science and



Waste biorefinery technologies for accelerating sustainable energy processes

Technology we advise you to exchange routes at Alameda (swapping from Red to Green Line), towards Cais do Sodré, where you can find the “Cais do Sodré” Ferry Station. Here you can take a ferryboat to “Cacilhas”. Once in Cacilhas you take a tram (MTS) to “Universidade”, hopping off on its terminus (located near one of the campus entrances).

By Shuttle: With frequent departures from the airport, this bus provides a link between the main city points, the Sete Rios bus terminal, the Entrecampos railway terminal, Cais do Sodré and the two terminals at the Lisbon Airport (1 and 2). AEROBUS 1: from the Aeroporto to Cais do Sodré, with stops at: Entrecampos, Campo Pequeno, Saldanha, Picoas, Marquês, Av. Liberdade, Restauradores, Rossio and Praça do Comércio. More information here.

By Taxi: There are always plenty of taxis at the Arrivals and Departures Halls. All the taxis have meters, a ride to NOVA School of Science and Technology costs approximately €20, depending on the traffic. During weekends, nights, and holidays there is a 20% surcharge.

By Bus: Several bus lines stop at the airport arrivals terminal, taking you to different parts of the city. However, please note that the maximum baggage size allowed in these buses is 50x40x20cm. If your baggage exceeds this size, you must take the airport’s specific buses (Aerobus and Airport Shuttle). More information here and here. Please be advised that most of the routes provided here are only for Lisbon. From Lisbon you can take the Buses 3710 (Sete Rios - Costa da Caparica, with exit at Monte da Caparica IC20 Casas Velhas) or 3711 (Sete Rios - Monte da Caparica FCT Rotunda). New routes may be available soon.

2. From Lisbon (Downtown):

By Car: Follow the directions to “A2 Sul”. Cross the “25 de Abril” bridge towards south (“Sul”), take the first exit after the bridge, entering the expressway to Caparica (IC20), follow the sign “Universidade”.

By Ferry: In the “Cais do Sodré” Ferry Station, you can take a ferryboat to “Cacilhas”. Once in Cacilhas, you take a tram to “Universidade”, hopping off on its terminus (located near one of the campus entrances).

By Bus: From Lisbon you can take the Buses 3710 (Sete Rios - Costa da Caparica, with exit at Monte da Caparica IC20 Casas Velhas) or 3711 (Sete Rios-Monte da Caparica FCT Rotunda). New routes may be available soon.

By Taxi: There are always plenty of taxis in the city. All the taxis have meters, a ride to FCT NOVA costs approximately €20, depending on the traffic. During weekends, nights, and holidays there is a 20% surcharge.

Useful links (timetables and public transportation):

- Metro (Subway) - [MTS \(Almada\)](#), [Lisbon](#)
- Train - [Fertagus](#), [CP](#)
- Buses - [Carris Metropolitana](#), [Carris](#)
- Boats - [Transtejo](#)
- Lisbon Airport- [ANA](#)



Waste biorefinery technologies for accelerating sustainable energy processes

Address:

Largo da Torre, Campus de Caparica, Faculdade de Ciências e Tecnologia
2829-516 Caparica



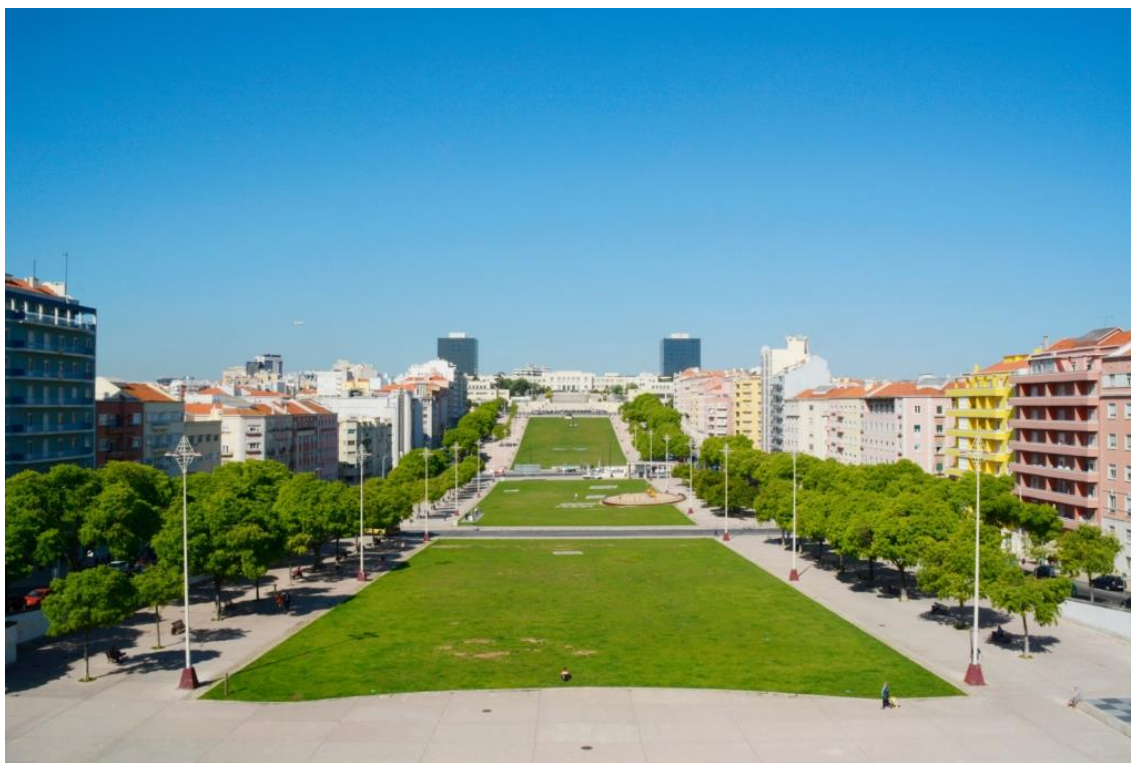
Waste biorefinery technologies for accelerating sustainable energy processes

Day 2 & Day 3

Instituto Superior Técnico

Instituto Superior Técnico belongs to Universidade de Lisboa and aims to contribute to the development of society, promoting and sharing excellence in higher education in the fields of Architecture, Engineering, Science and Technology. Técnico offers Bachelor, Master, and PhD programs, lifelong training, and develops Research, Development, and Innovation (RD&I) activities, which are essential to provide an education based on the top international standards.

The IST Alameda campus was built under the direction of Duarte Pacheco and was concluded in 1937 by Porfírio Pardal Monteiro, who created the first autonomous campus of the Portuguese university system. Located in Lisbon, the Alameda campus provides privileged access to the city's main points of interest. The public transport network allows quick travel to all points of the city. The different areas on campus allow students, researchers, faculty, and staff to develop extracurricular activities in a real university atmosphere.



How to get to Instituto Superior Técnico – Alameda Campus:

1) From the airport: From Lisbon Airport (Portela) to IST Alameda campus is an approximate 10-minute drive. The airport is very close to the city center — it is located 7 km from the center — and there are different alternatives to get there, namely by Metro, by city bus, or by taxi. If you choose the Metro to go from the airport straight to IST, you have the red line (linha vermelha) and you should exit at Alameda or Saldanha station. It takes around 15 to 20 minutes and costs 1.5€ plus 0.5€ for the “viva viagem” rechargeable card.



Waste biorefinery technologies for accelerating sustainable energy processes

2) By taxi or similar services: Taxis are more flexible and allow you to arrive at IST Alameda from any point in the city, but of course, the tariff also increases according to the distance, traffic, and time of day. The trip from the Airport to IST Alameda costs around 10€. It is possible to buy “taxi vouchers” at the airport from 20 to 25€. You can also use Uber in Portugal.

3) By bus: The whole city of Lisbon is covered by an urban transport network with convenient timetables and frequent buses. The following buses stop near the IST Alameda campus:

- Av. Rovisco Pais/Av. António José de Almeida (side entrances): 720, 742, 767
- Alameda: 708 (bike bus), 717, 718, 720, 735, 767; night bus: 206, 208
- Saldanha/Arco do Cego: 713, 716, 720, 726, 727, 736, 738, 742, 744, 767, 783; night bus: 207

For further information, visit the Carris bus company website (<https://www.carris.pt/en/>).

4) By Metro (subway):

- Saldanha Metro station: Yellow Line (Linha amarela) and Red Line (Linha vermelha)
- Alameda Metro station: Green Line (Linha verde) and Red Line (Linha vermelha)

For further information, visit the Lisbon Metro website (<https://www.metrolisboa.pt/en/>)

Address:

Av. Rovisco Pais 1, 1049-001 LISBOA

Laboratório Nacional de Energia e Geologia (LNEG)

LNEG, under the motto “Building a cleaner, future” has, as Mission, to promote and carry out research, demonstration and knowledge transfer actions, technical and technological assistance, and laboratory support for companies, in the domains of Energy and Geology (Decree-Law nr. 129/2014 of August 29). Its Vision is to be a reference institution capable of contributing with excellent solutions for a decarbonized economy. The Values followed by LNEG focus on Excellence, Commitment, People, and Innovation.

LNEG, Energy Research Laboratory focus is activity in the development of the Renewable Energy and is Integration in the Energy System and the Economy, driving solutions and support for the Energy Transition in Portugal. As a National Research Laboratory, we are committed in supporting the Policies of our Government, to achieve the goal of 80% of Renewables in the Electricity and 47% in Total Energy consumption by 2030.

LNEG activity covers the energy resources, the renewables technologies as also the energy efficiency and the end use such as Energy in Buildings and Communities, Smart cities to achieve a Sustainable Energy System.

LNEG carried out R&D Projects with national and international partners as also Technical assistant to the Industry to support the sustainable development of the Portuguese economy.

LNEG’s focus areas contribute towards the transition to sustainable energy systems:

- Solar Energy – heat (without and with concentration) and electricity (PV and CSP)



Waste biorefinery technologies for accelerating sustainable energy processes

- Wind and Ocean Energy
- Energy in the Built Environment
- Smart Cities
- Energy System Integration
- Bioenergy (Biorefineries, Biofuels, Biomass)
- Circular Economy
- Biomass for Industry
- Hydrogen
- Materials for Energy



How to get to LNEG:

- By bus: 703 778 55B 747
- By Train: Linha de SINTRA
- By Metro (subwat): Yellow line, Blue line, Green line

Address:

Estrada do Paço do Lumiar, 22
1649-038 Lisboa
Portugal

About Lisbon:

<https://tecnico.ulisboa.pt/en/campus-life/living-at-tecnico/get-to-know-lisbon/>



Waste biorefinery technologies for accelerating sustainable energy processes

Day 4 & Day 5

Portalegre Polytechnic University (PPU):

Portalegre Polytechnic University (PPU) is a higher education institution that includes four schools, involved in teaching, training, research and other activities in their respective scientific, pedagogic, technical, and artistic scope. It offers first cycle courses in Biofuel Technologies Production, Informatics Engineering, Agrarian Engineering and Management, and offers specialized training programs and Master programs in similar areas. PPU was one of the first Portuguese institutions to have a master's degree in the areas of energy and environment with specific curricular units for hydrogen, namely the "Hydrogen and Fuel Cells" in the MSc course in Environmental Valorization Technologies and Energy Production. PPU has relevant research experience, particularly on renewable gases, biochar production, characterization, applications, biomass processing, and overall thermochemical technologies for biomass and waste valorization. Through its research center VALORIZA (www.valoriza.ipportalegre.pt), PPU has conducted extensive research on gasification (syngas, hydrogen), pyrolysis, biochars, soil characterization, leveraging advanced methodologies and well-equipped laboratories. Furthermore, PPU researchers have demonstrated expertise in the use various feedstocks (biomass, wastes) for application in thermochemical technologies, as well as a diversified background in areas such as chemical engineering, catalysis, bioenergy, mechanical engineering, waste management and waste-to-energy. These expertise are further complemented by PPU's bioenergy lab which features equipment including XRF, FT-IR, BET, GC-MS, and TGA, facilitating comprehensive research and development in sample characterization which is crucial for VALORIZA's lines of research. PPU also has an industrial lab that houses key equipment such as a 100 kg/h bubbling fluidized bed gasifier, a 20 kg/h fixed bed gasifier, SOFC, electrolyzer, biodigesters, and a 300 kg/h pelletizer, further enhancing its capacity for research and development. PPU's extensive involvement in various European projects further enhances its capacity to contribute significantly to the training of young researchers. Projects like HYFUELUP (101084148) demonstrate PPU's commitment to decarbonization efforts by developing efficient biomethane production pathways through thermochemical technologies and renewable hydrogen integration; project PYRAGRAF (101114608), which focuses on decentralized pyrolytic conversion of agriculture and forestry wastes towards local circular value chains and sustainability; or I3-4-BIOFERTILIZERS (101161143) which underscores its commitment to promoting interregional cooperation in sustainable agriculture and bioeconomy sectors.



Waste biorefinery technologies for accelerating sustainable energy processes



About Portalegre:

The Municipality of Portalegre is in the North of Alentejo, in the heart of the Serra de S. Mamede Natural Park. It is made up of seven parishes, one urban (Sé and São Lourenço) and six rural (Alagoa, Alegrete, Fortios, Reguengo and São Julião, Ribeira de Nisa and Carreiras and Urra). It has an area of 44713.65 ha and around 26 thousand inhabitants.

The city, with around 16 thousand inhabitants, developed mainly from the 16th century onwards, when the seat of Bishopric was elevated to the category of City, which, together with the economic progress



Waste biorefinery technologies for accelerating sustainable energy processes

resulting from agriculture, commerce and from industry, led to the existence of noble and bourgeois families who had residences built with a certain grandeur. For this reason, Portalegre has one of the best sets of sunny houses in the country.

The city has a strong industrial tradition. The manufacture of woolen cloth dates to the Middle Ages, but experienced notable development from the 19th century onwards. XVIII and, in the following, with the founding of the Real Fábrica de Lanifícios, on the initiative of the Marquês de Pombal. In the 19th century, the Robinson Factory emerged, dedicated to the preparation and transformation of cork, which is an integral part of Portalegre's memory, and which has a valuable collection of industrial archeology. In 1947, the Tapestry Manufacture appeared, which, due to the originality and artistic value of its work, quickly became the "ex-libris" of the city.





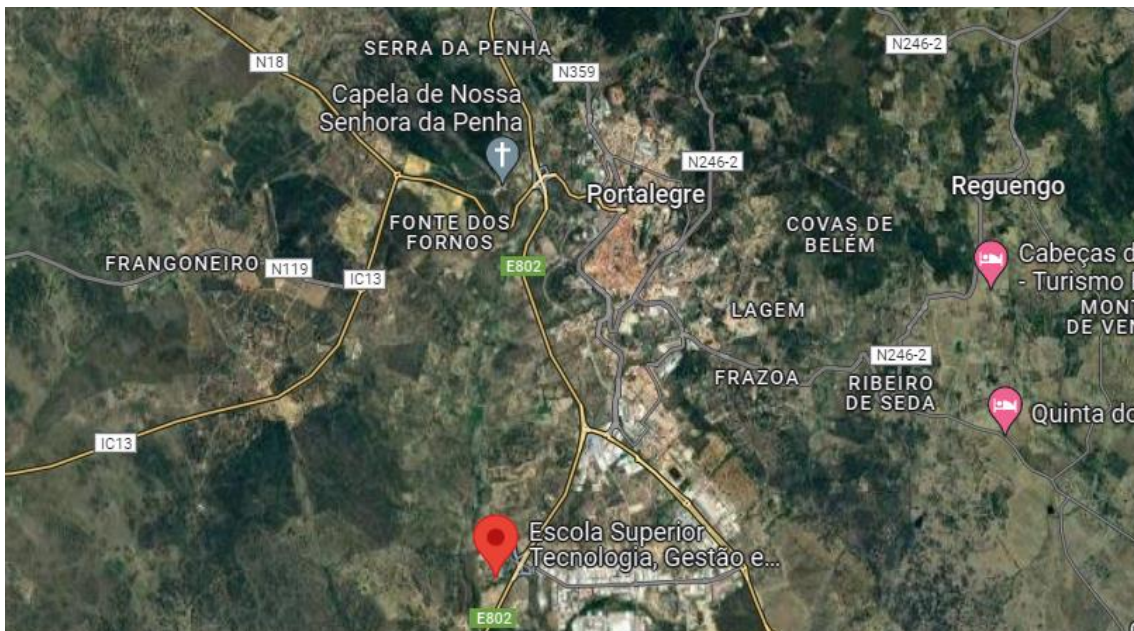
Waste biorefinery technologies for accelerating sustainable energy processes





Waste biorefinery technologies for accelerating sustainable energy processes

How to get to Escola Superior de Tecnologia, Gestão e Design – IPPortalegre:



To go from Portalegre to Campus Politécnico there are several bus routes. We suggest bus nº 2 (Carreira 2) since it has an extensive timetable. Please follow the bus service link to check the schedule (http://www.cm-portalegre.pt/images/Horario_urbano_a_partir_19_de_abril_de_2022.pdf), or see the picture below.

CARREIRA 2

Portalegre	Tarro	Lousa	Novo	R. 1.º de Maio	Sommoselva	P. da República	Rib. do Branco	Assenta	R. de Balsem	R. Eng. Cipriano	Chousa Mourisca	Z. Industrial	Campus PPT	Campus IPT	Z. Industrial	R. Eng. Cipriano	Chousa Mourisca	R. de Balsem	Assenta	Rib. do Branco	P. da República	Sommoselva	Rovito	Lousa	Novo	Tarro	Portalegre			
7.30	7.32	7.35	7.36	7.38	7.40	7.41	7.43	7.44	7.45	-	7.47	7.48	7.49	-	-	-	7.59	8.00	8.06	8.11	8.12	8.14	8.16	8.17	8.19	8.21	-			
8.00	8.02	8.05	8.06	8.08	8.10	8.11	8.13	8.14	8.18	-	8.21	8.22	8.23	-	-	-	9.19	9.20	9.23	9.25	9.26	9.27	9.29	9.31	9.32	9.33	9.35			
8.30	-	8.35	8.36	8.37	-	-	8.40	8.41	8.45	-	8.48	8.49	8.50	-	-	-	9.15	9.18	9.20	9.23	9.25	9.26	9.27	9.29	9.31	9.32	9.33			
9.00	9.02	9.05	9.06	9.07	9.08	9.09	9.10	9.11	9.15	-	9.18	9.19	9.20	-	-	-	10.33	-	10.34	10.35	10.38	10.40	10.41	10.42	10.44	-	10.46	10.47	10.50	
10.00	10.02	-	10.03	10.05	10.07	10.08	10.10	10.11	10.15	-	10.18	10.19	10.20	-	-	-	12.03	12.06	12.08	12.09	12.10	12.13	12.15	12.16	12.17	12.19	12.21	12.22	12.23	12.25
11.00	11.02	-	11.03	11.05	11.07	11.08	11.10	11.11	11.15	-	11.18	11.19	11.20	-	-	-	12.33	12.36	12.38	12.39	12.40	12.43	12.45	12.46	12.47	12.49	12.51	12.52	12.53	12.55
12.35	12.38	12.40	12.41	12.42	12.43	12.44	12.46	12.47	12.51	-	12.54	12.55	12.56	-	-	-	13.03	13.06	-	13.07	13.08	13.13	13.15	13.16	13.17	13.19	13.21	13.22	13.23	13.25
13.30	13.33	13.35	13.36	13.37	13.38	13.39	13.41	13.42	13.46	13.47	13.48	13.49	13.50	-	-	-	14.05	14.08	-	14.09	14.10	14.13	14.15	14.16	14.17	14.19	14.21	14.22	14.23	14.25
14.30	14.33	14.35	14.36	14.37	14.38	14.39	14.41	14.42	14.46	-	14.48	14.49	14.50	-	-	-	15.03	15.05	-	15.07	15.08	15.13	15.15	15.16	15.17	15.19	-	15.21	15.22	15.25
15.30	15.33	-	15.34	15.36	15.38	15.39	15.41	15.42	15.46	-	15.49	15.50	15.51	-	-	-	16.30	16.32	-	16.34	16.35	16.40	16.42	16.43	16.44	16.46	16.48	16.50	16.51	16.52
16.00	16.03	16.05	16.06	16.07	16.08	16.09	16.11	16.12	16.16	-	16.19	16.20	16.21	-	-	-	16.30	16.32	-	16.34	16.35	16.40	16.42	16.43	16.44	16.46	16.48	16.50	16.51	16.52
-	-	-	16.30	16.32	16.33	16.34	16.36	16.37	16.40	-	16.43	16.45	16.46	-	-	-	16.05	16.07	-	16.09	16.10	16.15	16.17	16.18	16.19	16.21	-	16.23	-	-
17.00	17.03	17.05	17.06	17.07	17.08	17.09	17.11	17.12	17.16	-	17.18	17.20	17.21	-	-	-	17.03	17.06	17.08	17.09	17.10	17.13	17.14	17.15	17.17	17.19	17.21	17.22	17.23	17.25
17.30	17.33	17.35	17.36	17.37	17.38	17.39	17.41	17.42	17.46	-	17.49	17.50	17.51	-	-	-	17.33	17.36	-	17.37	17.38	17.43	17.45	17.45	17.47	17.49	-	17.51	17.52	17.55
18.00	18.03	18.05	18.06	18.07	18.08	18.09	18.11	18.12	18.16	-	18.19	18.20	18.21	-	-	-	18.05	18.07	18.10	18.11	18.12	18.15	18.16	18.17	18.19	18.21	-	18.23	18.24	18.27
19.05	19.08	-	19.09	19.11	19.13	19.14	19.16	19.17	19.21	-	19.21	19.25	19.26	-	-	-	18.05	18.07	18.10	18.11	18.12	18.15	18.16	18.17	18.19	18.21	-	18.23	18.24	18.27
21.05	21.08	-	21.09	21.11	21.13	21.14	21.16	21.17	21.21	-	21.24	21.25	-	-	-	-	20.10	20.12	-	20.14	20.15	20.18	20.19	20.20	20.22	20.24	-	20.26	20.27	20.30
22.30	22.38	-	22.39	22.41	22.43	22.44	22.46	22.47	22.50	-	22.52	-	-	-	-	-	22.15	22.17	-	22.18	22.19	22.20	22.21	22.22	22.24	22.26	-	22.28	22.29	22.32

→ To Campus Politécnico
← From Campus Politécnico

For the Training School, a bus will be available everyday (8.00h) to take the trainees from the center of Portalegre (Praça do Rossio) to the location of the event (Campus Politécnico).



Waste biorefinery technologies for accelerating sustainable energy processes

Address:

Campus Politécnico 10
7300-555 Portalegre

Accommodation suggestions

Lisbon:

- Residencial Fonte Luminosa
- Hotel AS Lisboa 3*
- Luzeiros Suite (Av. República) 3*
- Hotel Roma 3*
- Alif Campo Pequeno 3*
- Hotel Exe Saldanha 3*
- Holiday Inn 4*
- Turim Alameda (Av. Rovisco Pais) 4*

Portalegre:

The region offers a wide variety of accommodation options, from hotels, to hostels, local accommodation units (self-catering), or Bed and Breakfast. Most of these are announced on booking websites, like booking.com. For a greater proximity to the places where the Training School takes place, we suggest that you choose accommodation in:

- Casa do Arco Portalegre***
- Casa Dom Manoel***
- Casa do Doutor***
- Casa do Pátio***
- Dona Maria***
- Estalagem da Liberdade***
- Hotel José Régio****
- Mansão Alto Alentejo**



Waste biorefinery technologies for accelerating sustainable energy processes

- Rossio Hotel****
- Solar das Avencas***
- Pátio do Marquês***

Once you have booked your accommodation, please let us know via wire20127@gmail.com. Also, please let us know if you need any help or further recommendations.

We also inform you that there is no UBER service in Portalegre, so if you need a transportation service, you can request a taxi through the following numbers:

Praça de Táxis do Rossio: 00351 245 202 375

Praça de Táxis da Rua de Elvas: 00351 245 201 380

Praça de Táxis da Avenida da Liberdade: 00351 245 404 694

Praça de Táxis da Avenida Movimento das Forças Armadas: 00351 245 203 842

Praça de Táxis de Assentos: 00351 245 208 668

Transportation Lisbon-Portalegre-Lisbon

Transportation from Lisbon to Portalegre **will be provided via bus, on the 3rd day of the Training School (17th July 2024)**. The bus will be located at Estação do Oriente and departing at 16.00h. It will arrive at Portalegre, approximately at 19.00h and will leave the trainees at Praça do Rossio (center of Portalegre). Return to Lisbon will be assured also via bus on the 20th of July 2024, departing at 8.00h, from Praça do Rossio, and arriving at Lisbon Airport, approximately at 11.00h.

If you do not wish to use this bus, you have the following alternatives for Lisbon-Portalegre:

- The train station in Portalegre is located in the outskirts of the town. You will have to get a bus right outside the station to travel to the centre. Please, visit www.cp.pt (national train company website) for timetables and for further information.
- Buses leave from two different locations: from Terminal Rodoviário (main bus terminal, located close to the Jardim Zoológico underground station) and from Oriente train station. From the former, buses are more frequent; the best and cheapest way to get there is to get the underground, red line, from the airport to S. Sebastião station and then change to the blue line to Jardim Zoológico (bound to Amadora or Colégio Militar/Luz); then follow the directions to Terminal Rodoviário (located outside the station); the bus ticket costs about 15€. Please, visit www.rede-expressos.pt (national bus company website) for timetables and for further information. To get from the airport to the Oriente, please follow the Metro directions above. For information on timetables and prices on buses to Portalegre from Oriente, please check at: <http://www.rodalentejo.pt>
- By car (If you rent a car, we advise you to pick one with via verde system), the quickest way to get to Portalegre is to use the A23 (North) motorway or the A6 (South) motorway. To follow the A23 motorway, leave Lisbon towards Norte/Porto by the A1 motorway. After about 100 km, exit onto the A23, towards Castelo Branco/Torres Novas/Abrantes. Exit at exit 15, towards Portalegre/Nisa. If you choose the A6, you must first follow A12/Sul/ Ponte Vasco da Gama, then exit towards A2, bound to Algarve/Évora until the A6 exit towards Espanha/Évora. Exit at Estremoz and continue on the IP2 until Portalegre.



Waste biorefinery technologies for accelerating sustainable energy processes

Committees

Local Organizing Committee

Paulo Brito
Catarina Nobre
Roberta Panizio
Bruna Rijo
Cecilia Pedrero
Diogo Santos
Margarida Gonçalves

International Committee (WIRE Core Group)

Paulo Brito
Mara de Joannon
Fabian Mauss
Corinna Maria Grottola
Marta Trninic
Eduardo Robles
Diogo Santos
Catarina Nobre