CURRICULUM VITAE

Patrícia de Carvalho Baptista

March 2023

Short biography

Dr. Patrícia Baptista received the Chemistry degree in 2006 and the Ph.D. degree in Sustainable Energy Systems within the MIT Portugal Program in 2011 from Instituto Superior Técnico, University of Lisbon, Portugal. She is currently a Principal Researcher at IN+ Center for Innovation, Technology and Policy Research. Her main research topics have been on the **transition to low-carbon systems, with special focus on the energy and environmental impacts of transports, by combining real world monitoring and numerical tools**. In more detail, these activities have focused on vehicle performance optimization and design, life-cycle assessment of energy carriers, technologies and mobility services, user behavior characterization and spatial analysis of urban infrastructure.

Patrícia has **coordinated or participated in several R&D projects** involving fleet life-cycle impacts, on-road monitoring of alternative technologies (namely, electric mobility), urban logistics and development of simulation models for mobility assessment. The most relevant European projects have focused on last mile clustering (FP7 DOROTHY), the use of cleaner technologies (FP7 FR-EVUE) and the use of alternative energy sources such as natural gas in the transportation sector (TEN-T LNG_PT). At the national level, the topics covered on projects have been on new services for smart cities (SUSCITY, C-TECH, STRETS4ALL), air quality impacts from road transport (ExpoLis), development of new vehicle concepts (PAC) and assessment of the impacts of batteries (Baterias2030).

Patrícia has consistently demonstrated a **high research potential, with the objective of consolidating a university teaching career**. On the ***scientific component***, Patrícia has published **61** peer-reviewed papers in international Q1-Q2 journals, along with **9** book chapters and **48** conference papers. She has also participated in **14** competitive scientific projects. On the ***teaching component***, Patrícia has successfully supervised **47** M.Sc. and **4** Ph.D. students and participated in undergraduate courses (**4** semesters), in M.Sc. (**10** semesters) and Ph.D. level courses (**5** semesters). Regarding ***knowledge transfer***, she has engaged with a wide range of stakeholders, including business and industry stakeholders, through **4** services projects and **16** industrial consultancy projects, reinforcing the importance of performing cutting-edge R&D activities with relevance and application in real world. As for ***management activities***, Patrícia has participated in **39** examination boards, was the scientific coordinator of **6** fellowships, and participated in the organization of **10** scientific events.

Table 1 summarizes the main indicators regarding Patricia's activities.

Table 1 – Summary of indicators

Indicators		Period	
		Last 5 years	Total
Scientific	Book chapters	**3**	**9**
	Peer-reviewed articles in international journals (Q1+Q2)	**44**	**64**
	Peer-reviewed articles in international journals (Others)	**5**	**14**
	Papers published in international conferences proceedings	**13**	**48**
	Conference presentations	**13**	**61**
	Invited communications	**17**	**26**
	Coordination and participation in research projects	**6**	**14**
	Awards and honors	**6**	**6**
Teaching	Courses (number of semesters)	**7**	**19**
	M.Sc. student supervision	**29**	**47**
	Ph.D. student supervision	**4**	**5**
	Pedagogical material	**0**	**1**
Knowledge transfer	Rendering of services	**1**	**4**
	Rendering of consulting	**0**	**16**
Management activities	Academic degrees' examination boards	**31**	**39**
	Scientific coordination of fellowships	**2**	**6**
	Organization of national and international scientific events	**3**	**11**

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1. Personal information

First name(s) / Surname(s): Patrícia de Carvalho Baptista

E-mail: patricia.baptista@tecnico.ulisboa.pt

Personal webpage: http://patriciacbaptista.weebly.com/

Nationality: Portuguese

Date of birth: 18/10/1983

Gender: Female

Address: Rua Vitor Hugo, 9, 5 Dto, 1000-293 Lisboa, Portugal

Public profiles:

- **ResearcherID**: A-5356-2012;
- **Scopus Author ID**: 16202135300
- **ORCID**: http://orcid.org/0000-0003-1559-9151
- **IST**: https://fenix.tecnico.ulisboa.pt/homepage/ist151313
- **LinkedIn**: pt.linkedin.com/in/patriciacbaptista
- **Google Scholar**: https://scholar.google.com/citations?hl=en&user=KZyZRP0AAAAJ

1.1. Academic degrees

Date: 01/10/2007 → 04/11/2011

Title of qualification awarded: **Ph.D. in Sustainable Energy Systems** (Pass with Merit)

Principal subjects / occupational skills covered:

- Ph.D. Thesis: "Evaluation of the impacts the introduction of alternative fuelled vehicles in the road transportation sector".
- Skills covered: life-cycle assessment and modelling applied to the road transportation sector either in terms of alternative vehicle technologies or alternative energy pathways; and energy and environmental impacts of alternative vehicle technologies and energy pathways at country's level.

Supervisors:

- Prof. Tiago Farias and Dr. Carla Silva (IDMEC - Instituto Superior Técnico, Technical University of Lisbon, Portugal)
- Prof. John Heywood (Sloan Automotive Laboratory, Massachusetts Institute of Technology)

Name and type of organization providing education and training: MIT Portugal - Instituto Superior Técnico, Av. Rovisco Pais 1, 1049-001 Lisboa (Portugal)

Date: **20/12/2006 → 31/07/2007**

Title of qualification awarded: **M.Sc. in Chemistry**
Principal subjects / occupational skills covered:

- Development of new analytical methods for the prediction of several biodiesel (oils, glycerine and blendings) quality parameters using MIR (Mid-Infrared) and NIR (Near-Infrared) Spectroscopy.

Name and type of organization providing education and training: Instituto Superior Técnico, Technical University of Lisbon, Portugal, Av. Rovisco Pais 1, 1049-001 Lisboa (Portugal)
Level in national or international classification: 16/20, ISCED 5

Date: **10/09/2001 → 19/12/2006**

Title of qualification awarded: **Bachelor's in Chemistry**
Principal subjects / occupational skills covered:

- Thesis: "Development of new analytical methods for the prediction of several biodiesel quality parameters using NIR Spectroscopy"
- Skills covered: Chemometrics, Spectroscopy, Environmental Chemistry, Analytical Chemistry, Supramolecular Chemistry and Materials' Chemistry

Name and type of organization providing education and training: Instituto Superior Técnico, Technical University of Lisbon, Portugal, Av. Rovisco Pais 1, 1049-001 Lisboa (Portugal)
Level in national or international classification: 16/20, ISCED 5

1.2. Professional experience

Date: **08/2022→ …**

Occupation or position held: **Assistant Professor at Instituto Superior Técnico**
Main activities and responsibilities: Teaching and research activities at the Department of Mechanical Engineering of Instituto Superior Técnico

Date: **11/2021→ 07/2022**

Occupation or position held: **Invited Assistant Professor at Instituto Superior Técnico**
Main activities and responsibilities: Collaborate teaching activities of the Department of Mechanical Engineering of Instituto Superior Técnico

Date: **06/2019→07/2022**

Occupation or position held: **Principal Researcher at IN+ Center for Innovation, Technology and Policy Research,** through Individual Call to Scientific Employment Stimulus, Fundação para a Ciência e Tecnologia
Main activities and responsibilities: Her research interests include the transition to low-carbon systems, with special focus on the quantification of energy and environmental impacts of transports by combining real world monitoring and numerical tools, addressing topics such as: vehicle performance optimization and design, life-cycle assessment of energy carriers, technologies and mobility services, user behavior characterization and spatial analysis of urban infrastructure.
Name and address of employer: IN+ Center for Innovation, Technology and Policy Research, Instituto Superior Técnico, Av. Rovisco Pais, 1, 1049-001 Lisboa (Portugal)

Date:
10/2016→05/2019

Occupation or position held: **Assistant Researcher at IN+ Center for Innovation, Technology and Policy Research**
Main activities and responsibilities: Her main research interests range from alternative energy sources as a way of promoting resource efficiency, sustainable energy conversion technologies, with special focus on biogas and biomethane, and the use of ICT to promote behavioral change and to foster the use of urban analytics for improved mobility design.
Name and address of employer: IN+ Center for Innovation, Technology and Policy Research, Instituto Superior Técnico, Av. Rovisco Pais, 1, 1049-001 Lisboa (Portugal)

Date:
05/11/2011→ 30/09/2016

Occupation or position held: **LAETA/IDMEC-IST post-doctoral researcher**
Main activities and responsibilities: Her main research interests focus on energy efficiency in the transportation sector, in more detail in the shift and adaptation to more sustainable energy conversion technologies, namely electric mobility; information and communication technologies as a trigger for user behavioral change; and innovative mobility solutions through the deployment/usage of more efficient energy conversions technologies and/or information and communication technologies. These areas are complemented with real on-road monitoring activities, as well as numerical models to perform a full life-cycle analysis.
Name and address of employer: DTEA - Transports, Energy and Environment (http://dtea.ist.utl.pt/), Instituto de Engenharia Mecânica – Pólo IST (http://www.idmec.ist.utl.pt/), Instituto Superior Técnico, Av. Rovisco Pais, 1 - Pav. de Mecânica I, 2º andar, 1049-001 Lisboa (Portugal)

Date:
15/03/2016 → 30/04/2016

Occupation or position held: **Visiting researcher at Carnegie Mellon University**
Main activities and responsibilities: Performing research on the assessment energy policies, focusing on energy planning and electric mobility at the Engineering and Public Policy department (https://www.cmu.edu/epp/).
Name and address of employer: Carnegie Mellon University, USA, 5000 Forbes Ave, Pittsburgh, PA 15213, United States

Date:
06/2014→ 09/2014

Occupation or position held: **Consultant for the European Commission, Directorate-General Joint Research Centre**
Main activities and responsibilities: Development of representative mobility basket-of-products (road, rail and air transport) for EU27 as well as the level of service provided; quantification of life-cycle impacts according to the ILCD methodology
Name and address of employer: European Commission, Joint Research Center, 21027 Ispra (VA), Italy

Date:
2013→ 2014

Occupation or position held: **Consultant for EDP Valor**
Main activities and responsibilities: Development of energy and environment audit to the fleets of EDP
Name and address of employer: EDP Valor, through contract with Livedrive

Date: 10/2011 → 12/2011

Occupation or position held: **IDMEC Research Fellow for the i2d Project**
Main activities and responsibilities: Development of feedback methodologies on driver behavior
Name and address of employer: IDMEC, through i2d Project

***Date:* 01/02/2009 → 30/07/2009**

Occupation or position held: **Visiting student at Massachusetts Institute of Technology**
Main activities and responsibilities: Ph.D. student and involvement in research projects at the Sloan Automotive Laboratory (http://web.mit.edu/sloan-auto-lab/).
Name and address of employer: MIT, 77 Massachusetts Ave, Cambridge, MA 02139, United States

***Date:* 01/10/2007 → 04/11/2011**

Occupation or position held: **MIT Portugal and Doctoral Fellow (http://www.mitportugal.org/) and DTEA-IDMEC doctoral student (http://dtea.ist.utl.pt/)**
Main activities and responsibilities: Ph.D. student and involvement in research projects.
Name and address of employer: DTEA - Transports, Energy and Environment (http://dtea.ist.utl.pt/), Instituto de Engenharia Mecânica – Pólo IST (http://www.idmec.ist.utl.pt/), Instituto Superior Técnico, Av. Rovisco Pais, 1 - Pav. de Mecânica I, 2º andar, 1049-001 Lisboa (Portugal)

***Date:* 10/09/2005 → 19/12/2006**

Occupation or position held: **Trainee**
Main activities and responsibilities: Experience in biodiesel synthesis and its optimization, as well as in the purification of biodiesel; Implementation of classical analytical methods for biodiesel present in the European Standard 14214; Development of new analytical methods for the prediction of several biodiesel quality parameters (chemical and physical) using NIR (Near Infrared) Spectroscopy.
Name and address of employer: **IBEROL** - Sociedade Ibérica de Biocombustíveis e Oleaginosas, SA and Centre of Chemical Processes of Instituto Superior Técnico (Portugal)

1.3. Grants

G 1 Portuguese National Science Foundation **Ph.D. scholarship** reference SFRH/BD/35191/2007, October 2007 to September 2011.

G 2 **Post-Doctoral scholarship** in the i2d Project of IDMEC, October 2011 to December 2011.

G 3 Portuguese National Science Foundation **Post-Doctoral scholarship** reference SFRH/BPD/79684/2011, January 2012 – September 2016.

G 4 Portuguese National Science Foundation **Principal Researcher Contract** SFRH/BPD/79684/2011, June 2019 – … (CEECIND/02589/2017).

1.4. Awards and Honors (AH)

AH 1 **Global Mobi Awards PRIO ('Cities' award)** for **IDEA** - Shared and efficient use of public roads, 2021. IDEA proposes an innovative and disruptive management of the use of parking spaces in urban areas. The project proposes a new shared and flexible concept of the public road, making its use more efficient, safer and bringing benefits to air quality. In addition to the reduced cost of implementation, the concept presents very effective results and a huge potential for replication.

AH 2 **L'Oréal Portugal Medals of Honor for Women in Science**: Patrícia Baptista developed the concept of an assessment tool that vulnerable users can use to choose the more accessible and sustainable routes, in a project entitled: "Assessing multi-modal urban mobility: energy, environmental and health perspectives", February 2017, Fundação para a Ciência e a Tecnologia, L'Oréal Portugal, Comissão Nacional da UNESCO

AH 3 **Honorable Mention** in "Prémios Científicos ULisboa/Santander Universidades", in Energy and Environment Area, 2018.

AH 4 **Best poster presentation** in 16º Grupo de Estudos em Transportes, Penela, 7-8 Janeiro, 2019, "Capacity-sharing in logistics solutions: A new pathway towards sustainability".

AH 5 One of the **100 Portuguese women scientists** featured in the "**Ciência Viva**" Book "**Mulheres na Ciência**", edited in 2019.

AH 6 **Honorable Mention** in "Prémios Científicos ULisboa/CGD", in Energy and Environment Area, 2019.

AH 7 **Honorable Mention** in "Prémios Científicos ULisboa/CGD", in Energy and Environment Area, 2022.

1.5. Personal skills and competences

Languages:

	Understanding				Speaking				Writing	
	Listening		Reading		Spoken interaction		Spoken production			
English	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user
French	B2	Independent user	B2	Independent user	B1	Independent user	B1	Independent user	B2	Independent user

(*) *Common European Framework of Reference (CEF) level*

Certificates:

- **First Certificate in English** – University of Cambridge, Local Examinations Syndicate – International Examinations
- **Certificate of Proficiency in English** – University of Cambridge, Local Examinations Syndicate – International Examinations
- **Diplômes d'Études en Langue Française D.E.L.F. 1er et 2eme Degrés**, Ministère de l'Éducation Nationale, Republique Française

Social skills and competences

- Good ability to adapt to multicultural environments due to participation in international projects and experience abroad;
- Good communication skills gained through presentations in international conferences;
- Team spirit due to participation in several projects.

Computer skills and competences

- Good command of Microsoft Office tools (Word, Excel, PowerPoint and Access);
- Knowledge at programming level of MATLAB, Phyton, Mathematica and Visual Basic.
- User proficiency in Tableau, QGIS and ArcGIS.
- User proficiency in SPSS and SAS.

Other skills and competences

- Driving license(s): B

Maternity leave interruption of activities

- November 2017 to March 2018
- April 2020 to September 2020

2. Scientific activities

The scientific indicators associated to the R&D activities developed are presented in detail next, focusing not only in scientific publications, but in other indicators such as participation in projects, coordination of fellowships, reviewing activities, etc.

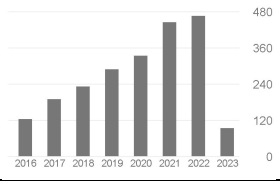
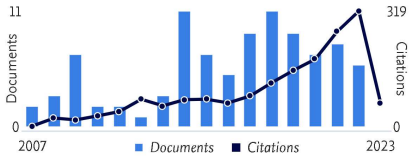
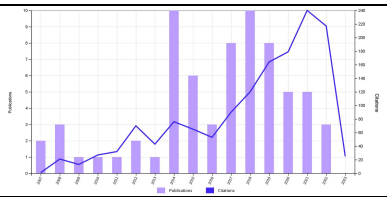
2.1. Scientific publications

The detailed scientific publications summary is presented in Table 2 followed by an overview of the citation metrics in March 2023, presented in Table 3.

Table 2 – Summary of scientific publications

Scientific publications		Number of publications	
		Last 5 years	Total
Peer-reviewed articles in international journals	Q1-Q2	44	64
	Others	5	14
International book chapters		3	9
Other documents		4	13
Conference papers		13	48
Invited communications		17	26
Conference presentations		13	61
Posters		3	21
Thesis		-	3

Table 3 – Overview of the citation metrics

Index database	Total number of citations	h-index	Citations trend
Google Scholar [GS]	2871	**31**	
Scopus [S]	1649	**25**	
ISI Web of Knowledge [ISI]	1436	**24**	

2.1.1. *Peer-reviewed articles in international journals*

The peer-reviewed articles in international journals are presented next. The journal impact factor or Citescore for each journal and paper citations according to Scopus are presented. The author ORCID ID is 0000-0002-7532-3993; the author Scopus Author ID is 9249548800.

International Journals - Q1 and Q2

P 1	J Espadinha, P Baptista, D Neves, Assessing P2P energy markets contribution for 2050 decarbonization goals, Sustainable Cities and Society, 104495, 2023.	Q1 IF2020:**10.696** Citations:**0**
P 2	AF Reis, P Baptista, F Moura, How to promote the environmental sustainability of shared e-scooters: A life-cycle analysis based on a case study from Lisbon, Portugal, Journal of Urban Mobility 3, 100044, 2023.	Q1 IF2020:**9.297** Citations:**0**
P 3	Diana Neves, Patrícia Baptista, Ricardo Gomes, Sónia Cunha, Mexitli Sandoval-Reyes, Diana Vieira Fernandes, Catarina Rolim, Carlos A Silva, MetaExplorer: Collaborative development of urban metabolism platform for decision making support, Energy Strategy Reviews 45, 101041, 2023.	Q1 IF2020:**10.01** Citations:**0**
P 4	D Watling, P Baptista, G Duarte, J Gao, H Chen, Systematic Method for Developing Reference Driving Cycles Appropriate to Electric L-Category Vehicles, Energies 15 (9), 3466, 2022.	Q1 IF2020:**9.297** Citations:**0**
P 5	S. Sagaria, G. Duarte, D. Neves, P. Baptista, Photovoltaic integrated electric vehicles: assessment of synergies between solar energy, vehicle types and usage patterns, Journal of Cleaner Production, 18 March 2022, 131402, 2022.	Q1 IF2020:**9.297** Citations:**0**
P 6	Zamir Mera, Roberto Varella, Patrícia Baptista, Gonçalo Duarte, Freddy Rosero, Including engine data for energy and pollutants assessment into the vehicle specific power methodology, Applied Energy, Volume 311, 118690, 2022.	Q1 IF2020:**9.746** Citations:**0**
P 7	TB da Silva, P Baptista, CAS Silva, L Santos, Assessment of decarbonization alternatives for passenger transportation in Rio de Janeiro, Brazil, Transportation Research Part D: Transport and Environment, Volume 103, 103161, 2022.	Q1 IF2020:**5.495** Citations:**0**
P 8	A Giordano, HS Matthews, P Baptista, P Fischbeck, Impacts of topography and weather barriers on commercial cargo bicycle energy using urban delivery crowdsourced cycling data, Sustainable Cities and Society 76, 103326, 2022.	Q1 IF2020:**7.587** Citations:**0**
P 9	G Duarte, A Silva, P Baptista, Assessment of wireless charging impacts based on real-world driving patterns: Case study in Lisbon, Portugal, Sustainable Cities and Society 71, 102952, 2021.	Q1 IF2020:**7.587** Citations:**2**
P 10	Diana Neves, Patrícia Baptista, João M Pires, Sustainable and inclusive energy solutions in refugee camps: developing a modelling approach for energy demand and alternative	Q1 IF2020:**9.297** Citations:**6**

	renewable power supply, Journal of Cleaner Production, Volume 298, 20 May 2021, 126745.	
P 11	Rolim, C.C.; Baptista, P. Sharing Lisboa: A Digital Social Market to Promote Sustainable and Energy Efficient Behaviours. Climate, 2021, 9, 34.	Q2 Citescore:**3.9** Citations:**1**
P 12	Brais Franco, R Costa Neto, P Baptista, Assessment of offloading pathways for wind-powered offshore hydrogen production: Energy and economic analysis, Applied Energy, Volume 286, 15 March 2021, 116553, 2021.	Q1 IF2020:**9.746** Citations:**9**
P 13	S Sagaria, R Costa Neto, P Baptista, Assessing the performance of vehicles powered by battery, fuel cell and ultra-capacitor: Application to light-duty vehicles and buses, Energy Conversion and Management, Volume 229, 113767, 2021.	Q1 IF2020:**9.709** Citations:**8**
P 14	S Sagaria, R Costa Neto, P Baptista, Modelling approach for assessing influential factors for EV energy performance, Sustainable Energy Technologies and Assessments, 44, 100984, 2021.	Q1 IF2020:**5.353** Citations:**5**
P 15	Tatiana Bruce da Silva, Patrícia Baptista, Carlos A. Santos Silva, Luan Santos, Climate Change Mitigation Policies in the Transportation Sector in Rio de Janeiro, Brazil, Environments, 7(11), 99, 2020.	Q1 Citescore:**4.1** Citations:**1**
P 16	Marina Almeida-Silva, Nuno Canha, Filipa Vogado, PC Baptista, AV Faria, T Faria, JT Coutinho, C Alves, SM Almeida, Assessment of particulate matter levels and sources in a street canyon at Loures, Portugal–A case study of the REMEDIO project, Atmospheric Pollution Research, 11, 1857-1869, 2020.	Q1 IF2020:**4.352** Citations:**2**
P 17	FA Diawuo, M Sakah, SR du Can, PC Baptista, CA Silva, Assessment of multiple-based demand response actions for peak residential electricity reduction in Ghana, Sustainable Cities and Society, 102235, 2020.	Q1 IF2020:**7.587** Citations:**10**
P 18	FA Diawuo, IJ Scott, PC Baptista, CA Silva, Assessing the costs of contributing to climate change targets in sub-Saharan Africa: The case of the Ghanaian electricity system, Energy for Sustainable Development 57, 32-47, 2020.	Q1 IF2020:**5.223** Citations:**6**
P 19	G Lorenzi, P Baptista, B Venezia, C Silva, M Santarelli, Use of waste vegetable oil for hydrotreated vegetable oil production with high-temperature electrolysis as hydrogen source, Fuel 278, 117991, 2020.	Q1 IF2020:**6.609** Citations:**2**
P 20	RA Varella, JP Ribau, PC Baptista, L Sousa, GO Duarte, Novel approach for connecting real driving emissions to the European vehicle laboratorial certification test procedure, Environmental Science and Pollution Research, 1-20, 2019.	Q2 IF2020:**4.223** Citations:**6**
P 21	MV Faria, GO Duarte, RA Varella, TL Farias, PC Baptista, How do road grade, road type and driving aggressiveness impact vehicle fuel consumption? Assessing potential fuel savings in	Q1 IF2020:**5.495** Citations:**17**

	Lisbon, Portugal, Transportation Research Part D: Transport and Environment 72, 148-161, 2019.	
P 22	FA Diawuo, M Sakah, A Pina, PC Baptista, CA Silva, Disaggregation and characterization of residential electricity use: Analysis for Ghana, Sustainable Cities and Society 48, 101586, 2019.	Q1 IF2020:**7.587** Citations:**14**
P 23	Madalena Lopes, Patrícia Baptista, Elizabeth Duarte, António L. N. Moreira, Enhanced biogas production from anaerobic co-digestion of pig slurry and horse manure with mechanical pre-treatment, Environmental Technology, 40 (10), 1289-1297, 2019.	Q2 IF2020:**3.247** Citations:**7**
P 24	Roberto A Varella, Marta V Faria, Pablo Mendoza-Villafuerte, Patrícia C Baptista, Luis Sousa, Gonçalo O Duarte, Assessing the influence of boundary conditions, driving behavior and data analysis methods on real driving CO2 and NOx emissions, Science of The Total Environment, 658, 879-894, 2019.	Q1 IF2020:**7.587** Citations:**35**
P 25	MV Faria, GO Duarte, RA Varella, TL Farias, PC Baptista, Driving for decarbonization: Assessing the energy, environmental, and economic benefits of less aggressive driving in Lisbon, Portugal, Energy Research & Social Science 47, 113-127, 2019.	Q1 IF2020:**6.834** Citations:**8**
P 26	M Faria, G Duarte, P Baptista, Assessing electric mobility feasibility based on naturalistic driving data, Journal of Cleaner Production, Volume 206, 1 January 2019, Pages 646-660.	Q1 IF2020:**9.297** Citations:**6**
P 27	E Costa, J Seixas, P Baptista, G Costa, T Turrentine, CO_2 emissions and mitigation policies for urban road transportation: Sao Paulo versus Shanghai, Urbe. Revista Brasileira de Gestão Urbana 10, 143-158, 2018.	Q2 SJR2020: **0.29** Citations:**5**
P 28	Sandra Melo, Joaquim Macedo, Patrícia Baptista, Capacity-sharing in logistics solutions: A new pathway towards sustainability, Transport Policy, 2018.	Q1 IF2020:**4.674** Citations:**31**
P 29	M Faria, C Rolim, G Duarte, T Farias, P Baptista, Assessing energy consumption impacts of traffic shifts based on real-world driving data, Transportation Research Part D: Transport and Environment 62, 489-507, 2018.	Q1 IF2020:**5.495** Citations:**6**
P 30	FA Diawuo, A Pina, PC Baptista, CA Silva, Energy efficiency deployment: A pathway to sustainable electrification in Ghana, Journal of Cleaner Production 186, 544-557, 2018.	Q1 IF2020:**9.297** Citations:**11**
P 31	G Lorenzi, P Baptista, Promotion of renewable energy sources in the Portuguese transport sector: A scenario analysis, Journal of Cleaner Production 186, 918-932, 2018.	Q1 IF2020:**9.297** Citations:**24**
P 32	M Faria, R Varella, G Duarte, T Farias, P Baptista, Engine cold start analysis using naturalistic driving data: City level impacts on local pollutants emissions and energy consumption, Science of The Total Environment 630, 544–559, 2018.	Q1 IF2020:**7.587** Citations:**34**
P 33	Diana Neves, Patrícia Baptista, Matilde Simões, Carlos A. Silva, José Rui Figueira, Designing a municipal sustainable energy strategy using multi-criteria decision analysis, Journal of Cleaner Production, Volume 176, 1 March 2018, Pages 251-260.	Q1 IF2020:**9.297** Citations:**29**

International Journals - Q1 and Q2

P 34	F Paulino, A Pina, P Baptista, Evaluation of Alternatives for the Passenger Road Transport Sector in Europe: A Life-Cycle Assessment Approach, Environments 5 (2), 21, 2018.	Q1 Citescore:**4.1** Citations:**6**
P 35	Catarina Rolim, Patrícia Baptista, Comparing drivers' self-perception on driving behaviour changes with real world driving performance data, Travel Behaviour and Society, 11, 86–92, 2018.	Q1 IF2020:**4.983** Citations:**3**
P 36	Evaldo Costa, Arthur Paiva, Júlia Seixas, Gustavo Costa, Patrícia Baptista, Brian Ó Gallachóir, Spatial Planning of Electric Vehicle Infrastructure for Belo Horizonte, Brazil, Journal of Advanced Transportation, 2018.	Q1 IF2020:**2.419** Citations:**4**
P 37	MV Faria, PC Baptista, TL Farias, JMS Pereira, Assessing the impacts of driving environment on driving behavior patterns, Transportation, 1-27, 2018.	Q1 IF2020:**5.192** Citations:**8**
P 38	C Rolim, P Baptista, G Duarte, T Farias, J Pereira, Real-time feedback impacts on eco-driving behavior and influential variables in fuel consumption in a Lisbon urban bus operator, IEEE Transactions on Intelligent Transportation Systems 18 (11), 3061-3071, 2017.	Q1 IF2020:**6.492** Citations:**16**
P 39	S Melo, J Macedo, P Baptista, Guiding cities to pursue a smart mobility paradigm: An example from vehicle routing guidance and its traffic and operational effects, Research in transportation economics 65, 24-33, 2017.	Q1 IF2020:**2.627** Citations:**23**
P 40	Varella, R., Duarte, G., Baptista, P., Sousa, L. et al., "Analysis of the influence of outdoor temperature in vehicle cold-start operation following EU Real Driving Emission test procedure" SAE Technical Paper 2017-24-0140, 2017.	Q2 SJR2020: **0.3** Citations:**11**
P 41	Melo, S., Baptista, P., Evaluating the impacts of using cargo cycles on urban logistics: integrating traffic, environmental and operational boundaries, European Transport Research Review, 2017.	Q1 IF2020:**2.415** Citations:**65**
P 42	C Rolim, P Baptista, G Duarte, T Farias, J Pereira, Impacts of real-time feedback on driving behaviour: a case-study of bus passenger drivers, European Journal of Transport and Infrastructure Research, 17 (3), 346-359, 2017.	Q2 SJR2020: **0.53** Citations:**3**
P 43	Marta V. Faria, Gonçalo O. Duarte, Patrícia C. Baptista, Tiago L. Farias, Scenario Based Analysis of Traffic Related PM2.5 Concentration: Lisbon Case Study, Environmental Science and Pollution Research, Volume 24, Issue 13, pp 12026–12037, 2017.	Q2 IF2020:**4.223** Citations:**11**
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CP 45 J. A. Peças Lopes, F. J. Soares, P. M. Rocha Almeida, P. C. Baptista, C. M. Silva and T. L. Farias, QUANTIFICATION OF TECHNICAL IMPACTS AND ENVIRONMENTAL BENEFITS OF ELECTRIC VEHICLES INTEGRATION ON ELECTRICITY GRIDS, 8th

International Symposium on Advanced Electromechanical Motion Systems, Lille France, 1 - 3 July 2009.

CP 46 Patrícia Baptista, Carla Silva, Tiago Farias, FULL LIFE CYCLE ANALYSIS OF ELECTRIC VEHICLES AND MARKET PENETRATION SCENARIOS, 24th International Battery, Hybrid and Fuel-cell Electric Vehicle Symposium and Exhibition, 13-16 May 2009.

CP 47 Gonçalo Gonçalves, João Bravo, Patrícia Baptista, Carla Silva, Tiago Farias, MONITORING AND SIMULATION OF FUEL CELL ELECTRIC VEHICLES, 24th International Battery, Hybrid and Fuel-cell Electric Vehicle Symposium and Exhibition, 13-16 May 2009.

CP 48 Patrícia Baptista, Mário Tomás, Carla Silva, HYBRID PLUG-IN FUEL CELL VEHICLES MARKET PENETRATION SCENARIOS, HYPOTHESIS VIII: HYdrogen POwer - THeoretical and Engineering Solutions - International Symposium, Lisbon - Portugal, 1 – 3 April 2009.

2.1.5. Invited communications (IC)

IC 1 Lecture on "Análise de Sustentabilidade Ambiental de diferentes fontes energéticas", UC-Bioenergias Renováveis e Processos de Conversão, **Instituto Superior de Agronomia**, December 2021.

IC 2 Invited speaker in **DGEG** seminar on Mobility and energy transition" on the topic of "Energy and environmental sustainability for freight transport", July 2021.

IC 3 Invited speaker in **ANTRAM** Webinar on the topic of "Energy and environmental sustainability for freight transport", May 2021.

IC 4 Invited Speaker in **FEUP's** Engineering and Public Policies seminar on the topic of "Technological perspective on the creation of value to society by engineering", May 2021.

IC 5 Seminar on "A modeling and experimental approach for decarbonizing the transport sector", Mechanical Engineering Department Seminars 2021, **IST**, 11 March 2021.

IC 6 Lecture on "Análise de Sustentabilidade Ambiental de diferentes fontes energéticas", UC-Bioenergias Renováveis e Processos de Conversão, **Instituto Superior de Agronomia**, November 2020.

IC 7 Lecture on "Análise de Sustentabilidade Ambiental de diferentes fontes energéticas", UC-Bioenergias Renováveis e Processos de Conversão, **Instituto Superior de Agronomia**, December 2019.

IC 8 Invited Speaker at "RIDER Project Seminar - Sharing mobility and environment: outlining benefits and drawbacks" on "From user acceptance to impacts of shared mobility", **University of Palermo**, 21st October 2019.

IC 9 Invited Speaker at "Innovation sessions @ **Ceiia**" on "Contribution of research towards alternative mobility options", Porto 4th October 2019.

IC 10 Invited Speaker at "SEEEP/SESE Summer School 2019" on "Energy and environmental impacts of alternative mobility options", Lisbon 22-24 July 2019.

IC 11 Lecture on "Análise de Sustentabilidade Ambiental (ASA) incluindo perspectiva de ciclo de vida de diferentes fontes energéticas", UC-Bioenergias Renováveis e Processos de Conversão, **Instituto Superior de Agronomia**, 19 October 2018.

IC 12 Invited speaker at Conference on ""Energia e Transportes no Espaço Lusófono"" organized by **Sociedade de Debate da Universidade de Lisboa** (SDUL), 19 April 2018.

IC 13 Participation as co-moderator of "Youth Council" on Warm-up for **Lisbon Mobi Summit**, 26 January 2018.

IC 14 Lecture on "Análise técnico/económica de fontes energéticas e papel da regulamentação na sua promoção", UC-Bioenergias Renováveis e Processos de Conversão 2017, **Instituto Superior de Agronomia**, 13 December 2017.

IC 15 Lecture on "Análise de Sustentabilidade Ambiental (ASA) incluindo perspectiva de ciclo de vida de diferentes fontes energéticas", UC-Bioenergias Renováveis e Processos de Conversão 2017, **Instituto Superior de Agronomia**, 27 September 2017.

IC 16 Seminar on "The role of research in changing the road transport paradigm", Mechanical Engineering Department Seminars 2017, **IST**, 20 June 2017.

IC 17 Seminar on "Challenges on the transport sector: which alternatives?", Renewable Energy and Environment Seminars 2017, **ISEC**, 31 May 2017.

IC 18 Lecture on "Gestão operacional da mobilidade em ambiente urbano", Workshop Programa de Investigação 2016, **Brisa Inovação**, 3 November 2016.

IC 19 Seminar on "The quantification of energy and environmental impacts of the introduction of alternative technologies on the Lisbon municipality fleet", **Lisboa Enova** Ponto de Encontro, Lisbon, Portugal, 26th January 2016.

IC 20 Seminar on "The state of the art of the use of LNG in Portugal", Final event of the LNG_PT project, Lisbon, Portugal, 11th December 2015.

IC 21 Invited lecturer on the Renewable Energies Post-Graduate Seminar, **Instituto Superior de Engenharia de Lisboa**, Portugal, 25th June 2015.

IC 22 Invited lecturer on Urban Logistics Monitoring in the FREVUE European Project Lisbon Meeting, Lisbon, Portugal, 14th May 2015.

IC 23 Invited lecturer on Sustainable mobility: alternatives for the road transport sector, DEGGE Seminars, **Faculdade de Ciências**, Universidade de Lisboa, 19th March 2015.

IC 24 Invited lecturer at the 2nd **Armand Peugeot Chair Conference** 2014, "From on-road monitoring to the quantification of energy and environmental impacts of car-sharing systems: case-study in Lisbon, Portugal", 18-19 December 2014.

IC 25 Patrícia C. Baptista, Research on Electric Mobility, Workshop on Electric Mobility, Instituto Superior Técnico, 7 December 2012.

IC 26 Patrícia Baptista, Carla Silva, Tiago Farias, ENVIRONMENTAL IMPACTS OF ELECTRIC VEHICLES IN THE PORTUGUESE ROAD TRANSPORTATION SECTOR, CIÊNCIA 2010 - **Encontro com a Ciência em Portugal**, Centro de Congressos de Lisboa, 4-7 de Julho de 2010.

2.1.6. Conference presentations (CPres)

CPres 1 Diana Neves / Patricia Baptista / Pedro Rosa, Development of an assessment tool for improving energy communities' deployment, World Sustainable Energy Days 2022, Wels/Austria, April 2022.

CPres 2 Patrícia Baptista, Helena Monteiro, Maria Gonçalves, Fernanda Margarido, António Moreira, Portugal Autocluster for the future, 18th Meeting of the Transports Study Group, Porto, 4th March 2022.

CPres 3 Ana Filipa Reis; Filipe Moura; Patrícia Baptista. Evaluating the environmental impacts of electric scooter sharing systems using life cycle analysis, Velo-city 2021, Lisboa, 6-9 September, 2021 Lisboa.

CPres 4 Diawuo F.A, De la Rue du Can S., Baptista, P.C., Silva, C.A., 2019. Assessing the impact of demand response on peak demand in a developing country: The case of Ghana. Proceedings of 2nd International Conference on the Sustainable Energy and Environmental Development. October 16-18, 2019, Krakow, Poland.

CPres 5 Patrícia Baptista, Marta Faria, Gonçalo Duarte, Connecting electrification with eco-driving: using real-world driving data for assessing potential energy savings, 32nd Electric Vehicle Symposium (EVS32), Lyon, France, May 19 - 22, 2019, 11th-14th May 2019, Lyon, France.

CPres 6 Patrícia Baptista, Marta Faria, Gonçalo Duarte, Using naturalistic driving data to evaluate speed limit reductions: energy, environmental and safety assessment, 31st ICTCT Conference "On the track of future urban mobility: safety, human factors and technology", Porto, Portugal, 25 – 26 October 2018.

CPres 7 Marta Faria, Patricia Baptista, Tiago Farias, Using naturalistic driving data to model crash risk at a city, 31st ICTCT Conference "On the track of future urban mobility: safety, human factors and technology", Porto, Portugal, 25 – 26 October 2018.

CPres 8 Marta Faria, Gonçalo Duarte, Roberto Varella, Tiago Farias, Patricia Baptista, Assessing Aggressive Driving Effects on Pollutant Emissions and Energy Consumption: City Level Analysis, 5th European Conference on Behaviour and Energy Efficiency, Zurich, Switzerland, 5-7 September 2018.

CPres 9 Felix Diawuo, André Pina, Patricia C Baptista, Carlos A Silva, "Urbanisation" or "Ruralisation": The dilemma of future residential electricity consumption in Ghana, 12th SDEWES - Conference on Sustainable Development of Energy, Water and Environment Systems, October 4 - 8 2017, Dubrovnik, Croatia.

CPres 10 Evaldo Costa, Arthur Paiva, Júlia Seixas, Patrícia Baptista, Gustavo Costa, Brian Ó Gallachóir, The best locations for charging infrastructure of electric vehicles in Belo Horizonte, Brazil, Proceedings of the Irish Transport Research Network (ITRN2017) annual conference, 28th-29th August, Dublin, Ireland.

CPres 11 Marta Faria, Patrícia Baptista and Tiago Farias, Identifying driving behaviour patterns and its impacts in energy efficiency, EWGT 2017 Budapest | EURO Working Group on Transportation, Budapest, 4-6 September, 2017.

CPres 12 Sandra Melo, Joaquim Macedo, Patricia Baptista, Capacity-sharing in logistics solutions: one way towards sustainability, 14th NECTAR International Conference: Transport in a networked society, Madrid, Spain, May 31, 2017 — June 2, 2017

CPres 13 Marta Faria, Tiago Farias, Patricia Baptista, Driving behavior patterns: impacts in emissions and safety performance, 14th NECTAR International Conference: Transport in a networked society, Madrid, Spain, May 31, 2017 — June 2, 2017.

CPres 14 Patrícia Baptista, Sandra Melo, Using on-road monitoring data to characterize mobility and assess new solutions, 14° Encontro Anual do Grupo de Estudos em Transportes, Fátima, Portugal, 20-21 Fevereiro 2017.

CPres 15 Diana Neves, Carlos A. Silva, Patrícia Baptista, Matilde Simões, José Rui Figueira, Development of a sustainable energy strategy using a multi-criteria analysis: the case study of Odemira municipality, 84th Meeting of Euro Working Group on Multicriteria Decision Aiding, September 22nd - 24th, 2016.

CPres 16 André Silva, Gonçalo Duarte, Patrícia Baptista, Quantifying the potential of eco-driving based on real world data, Behave2016 - 4th European Conference on Behaviour and Energy Efficiency, 8 - 9 September 2016, University of Coimbra, Portugal.

CPres 17 Catarina Rolim, Patrícia Baptista, Comparing driver self-evaluation with real world driving performance: an analysis of the influence of driver feedback, Behave2016 - 4th European Conference on Behaviour and Energy Efficiency, 8 - 9 September 2016, University of Coimbra, Portugal.

CPres 18 Sandra Melo, Patricia Baptista, Evaluating the impacts of cycle logistics on supplier operational performance and the transport network capacity, NECTAR Joint Cluster

2 and Cluster 3 International Workshop, "The role of planning towards sustainable urban mobility", 17–18 May 2016, Brno, Czech Republic.

CPres 19 Tiago Costa, Gonçalo Duarte, Sandra Melo, Patrícia Baptista, The role of integrated mobility management towards the concept of smart cities, International Conference on Engineering – Engineering for Society 2015, 2-4 December 2015, Covilhã, Portugal.

CPres 20 Ezequiel Carvalho, Jorge Sousa, André Pina, Patrícia Baptista, The renewable energy share that supplies the EV recharging: the case study of Portugal, 10th Conference on Sustainable Development of Energy, Water and Environment Systems, September 27 - October 3, 2015, Dubrovnik, Croatia.

CPres 21 Sandra Melo, Ricardo Coimbra, Patrícia Baptista, "Impacts of vehicle technology shift and downsizing in urban logistics: application if Lisbon, Portugal", URBE - URban freight and BEhavior change, Roma Tre University, Rome, Italy, 1-2 October 2015.

CPres 22 Catarina Rolim, Gonçalo Duarte, Patricia Baptista, Tiago Farias, Impacts of feedback and ICT on driving behavior, energy consumption and pollutants emissions: a case-study of bus passenger drivers, 14th International Conference on Travel Behaviour Research (IATBR), London, 19 July 2015 – 23 July 2015.

CPres 23 Cristiano Rodrigues, Mário Martins, Filipa Amorim, Patrícia Baptista, André Pina, Analyzing the impacts of electric vehicles in the electricity generation sectors in Europe, 2nd International Conference on Energy and Environment: bringing together Engineering and Economics, Guimarães, Portugal, 18-19 June, 2015.

CPres 24 André Pina, Filipa Amorim, Patrícia Baptista, Assessing the impact of electricity interconnections to achieve the EU targets for CO_2 emissions reduction, 12th International Conference on the European Energy Market - EEM15, May 20-22, 2015, Lisbon, Portugal.

CPres 25 Mário Martins, Catarina Rolim, Patrícia Baptista and André Pina, Towards the electrification of the transportation sector: energy and environmental impacts in Portugal and Belgium, Energy for Sustainability 2015 - Sustainable Cities: Designing for People and the Planet, Coimbra, 14-15 May, 2015.

CPres 26 Gonçalo Duarte, Catarina Rolim, Patrícia Baptista, Real world application of EV in urban logistics: case study in Lisbon, Portugal, City Logistics and Sustainable Freight Transport Workshop, Algarve, April 16-17, 2015.

CPres 27 P. Baptista, G. Duarte, G. Gonçalves, C. Rolim, ICT for mobility pattern and driver behaviour characterization: trial case-study in the city of Lisbon, Portugal, VPPC 2014 - IEEE Vehicle Power and Propulsion Conference, October 27-30, 2014.

CPres 28 G. Duarte, C. Rolim, P. Baptista, Research in energy in transports: from large scale mobility pattern and driver behavior characterization to alternative vehicle technologies, Energy at IST Conference, 12th September 2014.

CPres 29 P. Baptista, J. Tavares, G. Gonçalves, Energy and environmental impacts of potential application of fully or partially electric propulsion vehicles: application to Lisbon and São Miguel, Portugal, 17th Meeting of the European Working Group on Transportation, Seville, Spain, 2-4 July 2014.

CPres 30 C. Rolim, P. Baptista, G. Duarte, T. Farias, Y. Shiftan, Quantification of the impacts of eco-driving training and real-time feedback on urban buses drivers' behaviour: a Lisbon case study, Portugal, 17th Meeting of the European Working Group on Transportation, Seville, Spain, 2-4 July 2014.

CPres 31 G. Duarte, A. Rosca, G. Gonçalves, P. Baptista, T. Farias, Test cycles for electric vehicles based on real world driving, FISITA 2010 World Automotive Congress, Maastricht, The Netherlands 2-6 June 2014.

CPres 32 M. Mendes, G. Duarte, P. Baptista, Influence of electric bicycle usage on biker effort: on-road monitoring application in Lisbon, Portugal, PhyCS 2014 – International Conference on Physiological Computing Systems, 7-9 January 2014, Lisbon, Portugal.

CPres 33 P. Baptista, G. Duarte, G. Gonçalves, T. Farias, Evaluation of low power electric vehicles in demanding urban conditions: an application to Lisbon, EVS-27 - The 27th World Battery, Hybrid and Fuel Cell Electric Vehicle Symposium & Exhibition, Barcelona, Spain, Nov. 17-20, 2013.

CPres 34 C. Rolim, P. Baptista, O. Rodrigues, T. Farias, Lisbon's EV adopters: motivation, utilization patterns and environmental impacts, EVS-27 - The 27th World Battery, Hybrid and Fuel Cell Electric Vehicle Symposium & Exhibition, Barcelona, Spain, Nov. 17-20, 2013.

CPres 35 P. Baptista, S. Melo, C. Rolim, Energy, environmental and mobility impacts of car-sharing systems. Empirical results from Lisbon, Portugal, 16th Meeting of the European Working Group on Transportation, Porto, 4-6 September 2013.

CPres 36 S. Melo, P. Baptista, A. Costa, T. Farias, Comparing the use of small sized electric vehicles with diesel vans on city logistics, 16th Meeting of the European Working Group on Transportation, Porto, 4-6 September 2013.

CPres 37 C. Rolim, P. Baptista, G. Duarte, T. Farias, Impacts of on-board devices and training on Light Duty Vehicle Driving Behavior, 16th Meeting of the European Working Group on Transportation, Porto, 4-6 September 2013.

CPres 38 Patrícia Baptista, Gonçalo Duarte, Magno Mendes, Catarina Rolim, Tiago Farias, Scenarios for electric bicycle use: from on-road monitoring to possible impacts of large introduction, NECTAR Conference on Dynamics of Global and Local Networks, São Miguel Island, Azores (Portugal), 16-18 June 2013.

CPres 39 Catarina Rolim, Patrícia Baptista, Gonçalo Duarte, Tiago Farias, Yoram Shiftan, Impacts of on-board devices and training in urban passengers bus drivers – application to a case study, NECTAR Conference on Dynamics of Global and Local Networks, São Miguel Island, Azores (Portugal), 16-18 June 2013.

CPres 40 Melo, S., Baptista, P., Costa, Á, Farias, T. Using electric commercial vehicles for urban logistics and city distribution: in what conditions can it succeed?. NECTAR Conference St. Miguel, Azores, 16-18 June 2013.

CPres 41 Melo, S., Baptista, P. Small sized electric mobility solutions in urban mobility. 10° Encontro do Grupo de Estudos em Transportes, Alcobaça, 3 - 4 January 2013.

CPres 42 Patrícia C. Baptista, Inês L. Azevedo, Tiago L. Farias, ICT solutions in transportation systems: estimating the benefits and environmental impacts in the Lisbon region, 15th Meeting of the European Working Group on Transportation, Paris, 10-12 September 2012.

CPres 43 Patrícia Baptista, Tiago Farias, Energy, environmental and economic impact evaluation of the massification of ICT solutions in urban mobility, 9° Encontro Anual do Grupo de Estudos em Transportes, Tomar, Portugal, 5th to 6th January 2012.

CPres 44 Patrícia Baptista, Carla Silva, Tiago Farias, Evaluation of the impacts the introduction of alternative fuelled vehicles in the road transportation sector, 8° Encontro Anual do Grupo de Estudos em Transportes, Ílhavo, Portugal, 6 and 7th January 2011.

CPres 45 Patricia Baptista, João Ribau, João Bravo, Carla Silva, Paul Adcock, Ashley Kells, FUEL CELL HYBRID TAXI WELL-TO-WHEEL LIFE-CYCLE ANALYSIS, EVS-25 - The 25th World Battery, Hybrid and Fuel Cell Electric Vehicle Symposium & Exhibition, Shenzhen, China, Nov. 5-9, 2010.

CPres 46 Patrícia Baptista, Carla Silva, Tiago Farias, IMPACTS OF ALTERNATIVE VEHICLE TECHNOLOGIES AND ENERGY SOURCES IN THE PORTUGUESE ROAD TRANSPORTATION SECTOR, 12th World Congress on Transport Research (WCTR), 11-15 July 2010, Lisbon.

CPres 47 Patrícia Baptista, Carla Silva, Tiago Farias, IMPACTS IN THE PORTUGUESE LIGHT-DUTY ROAD TRANSPORTATION SECTOR OF INCREASING MARKET ELECTRIFICATION SCENARIOS, FISITA 2010 World Automotive Congress – Automobiles and Sustainable Mobility, Budapest, 30 May – 4 June 2010.

CPres 48 A. F. Ferreira, P. Baptista and C. Silva. BIO-HYDROGEN PATHWAYS FOR THE PORTUGUESE ROAD TRANSPORTATION SECTOR, FISITA 2010 World Automotive Congress – Automobiles and Sustainable Mobility, Budapest, 30 May – 4 June 2010.

CPres 49 Ana Filipa Ferreira, Patrícia Baptista and Carla Silva. ANALYSIS OF ENERGY CONSUMPTION AND CO_2 EMISSIONS OF THE LIFE CYCLE OF BIOHYDROGEN APPLIED TO THE PORTUGUESE ROAD TRANSPORTATION SECTOR. WHEC - World Hydrogen Energy Conference, May 16 - 21, 2010, Essen, Germany.

CPres 50 Patrícia Baptista, Carla Silva, Tiago Farias, ENERGY AND CO_2 EMISSIONS SCENARIOS OF INTRODUCING NEW VEHICLE TECHNOLOGIES IN THE PORTUGUESE FLEET, International Advanced Mobility Forum, Geneva International Motor Show, Geneva, 9 - 10 March 2010.

CPres 51 C. Camus, P. Baptista, C. Silva and T. Farias. STRATEGIC MARKETING PLAN FOR BATTERY ELECTRIC VEHICLES. THE PORTUGUESE CASE, International Advanced Mobility Forum, Geneva International Motor Show, Geneva, 9 - 10 March 2010.

CPres 52 Carla Silva, Patrícia Baptista, CENÁRIOS PARA O SECTOR DOS TRANSPORTES NO HORIZONTE 2010-2050, ENERGIA 2020, Faculdade de Ciências, Lisboa, 8 de Fevereiro 2010.

CPres 53 Patrícia Baptista, Carla Silva, Tiago Farias, SCENARIOS OF INTRODUCING NEW VEHICLE AND FUEL TECHNOLOGIES IN THE PORTUGUESE ROAD TRANSPORTATION SECTOR, 7° Encontro Anual do Grupo de Estudos em Transportes, Nazaré, Portugal, 4th to 5th January 2010.

CPres 54 Patrícia Baptista, Carla Silva, Tiago Farias, IMPACT OF THE INTRODUCTION OF NEW VEHICLE TECHNOLOGIES IN THE PORTUGUESE ROAD TRANSPORTATION SECTOR, 1st Transatlantic NECTAR Conference 2009, Arlington, Virginia USA, 18-20 June, 2009.

CPres 55 Patrícia Baptista, Cristina Camus, Carla Silva, Tiago Farias, IMPACT OF THE INTRODUCTION OF ELECTRIC BASED VEHICLES IN SÃO MIGUEL ISLAND, Second International Engineering Systems Symposium, The Emerging Field of Engineering Systems: Achievements and Challenges, June 15-17, 2009 at Massachusetts Institute of Technology.

CPres 56 Patrícia Baptista, Cristina Camus, Carla Silva, Tiago Farias, IMPACT OF THE INTRODUCTION OF ELECTRIC BASED VEHICLES IN SÃO MIGUEL ISLAND, 10th International Conference on Energy for a Clean Environment, Lisbon Portugal, 7 - 10 July 2009.

CPres 57 J. A. Peças Lopes, F. J. Soares, P. M. Rocha Almeida, P. C. Baptista, C. M. Silva and T. L. Farias, QUANTIFICATION OF TECHNICAL IMPACTS AND ENVIRONMENTAL BENEFITS OF ELECTRIC VEHICLES INTEGRATION ON ELECTRICITY GRIDS, 8th International Symposium on Advanced Electromechanical Motion Systems, Lille France, 1 - 3 July 2009.

CPres 58 Patrícia Baptista, Carla Silva, Tiago Farias, FULL LIFE CYCLE ANALYSIS OF ELECTRIC VEHICLES AND MARKET PENETRATION SCENARIOS, 24th International Battery, Hybrid and Fuel-cell Electric Vehicle Symposium and Exhibition, 13-16 May 2009.

CPres 59 Patrícia Baptista, Mário Tomás, Carla Silva, HYBRID PLUG-IN FUEL CELL VEHICLES MARKET PENETRATION SCENARIOS, HYPOTHESIS VIII: HYdrogen POwer - THeoretical and Engineering Solutions - International Symposium, Lisbon - Portugal, 1 – 3 April 2009.

CPres 60 Patrícia Baptista, Cristina Camus, Carla Silva, Tiago Farias, IMPACT OF THE INTRODUCTION OF ELECTRIC VEHICLES IN THE ISLAND OF SÃO MIGUEL, 6° Encontro Anual do Grupo de Estudos em Transportes, Mira, Portugal, 5th to 6th April 2009.

CPres 61 Pedro Felizardo, Patrícia Baptista, João Bordado, M. Joana Neiva Correia, RECOVERY OF METHANOL FROM THE METHYL-ESTERS AND GLYCEROL PHASES OBTAINED IN BIODIESEL PRODUCTION, 2nd International Congress of Energy and Environment Engineering and Management (IICIIEM2007).

2.1.7. Posters (Post)

Post 1 Sandra Melo, Joaquim Macedo, Patrícia Baptista, Capacity-sharing in logistics solutions: A new pathway towards sustainability, 16° Grupo de Estudos em Transportes, Penela, 7-8 Janeiro, 2019.

Post 2 M. Almeida-Silva, P. Baptista, N. Canha, T. Faria, J. Lage, A.V. Faria, G. Duarte, C. Alves, and S.M. Almeida, Air quality in a street canyon: particles and traffic composition, European Aerosol Conference 2017, Zürich, Switzerland, August 27th – September 1st 2017.

Post 3 Madalena Lopes, Patrícia Baptista, Elizabeth Duarte, António Moreira, Assessment of biogas production pathways: application to Portugal; 25th European Biomass Conference and Exhibition (EUBCE 2017), Stockholm, 12-15 June, 2017.

Post 4 Patrícia Baptista, Catarina Rolim, Gonçalo Duarte, Assessment of electric mobility adequacy and energy requirements based on real world data, EVS29 Symposium, Montréal, Québec, Canada, June 19-22, 2016.

Post 5 Marta Faria, Patrícia Baptista, Tiago Farias, The role of electric vehicles in low emission zones: potential impacts for the city of Lisbon, Portugal, EVS29 Symposium, Montréal, Québec, Canada, June 19-22, 2016.

Post 6 Ezequiel Carvalho, Jorge Sousa, André Pina, Patrícia Baptista, The renewable energy share that supplies the EV recharging: the case study of Portugal, 10th Conference

	on Sustainable Development of Energy, Water and Environment Systems, September 27 - October 3, 2015, Dubrovnik, Croatia.
Post 7	Marta V. Faria, Gonçalo O. Duarte, Patrícia C. Baptista, Tiago L. Farias, Scenario Based Analysis of Traffic Related PM2.5 Concentration: Lisbon Case Study, 7th International Workshop on Biomonitoring of Atmospheric Pollution (BIOMAP 7), Lisbon, Portugal, June 14th to 19th 2015.
Post 8	Patricia Baptista, Sandra Melo, Amilcar Arantes, Dorothy: towards sustainability in urban logistics, Grupo de Estudos em Transportes, 5-6 January 2015, Tomar, Portugal.
Post 9	G. Pereira, P. Baptista, A. Pina, C. Rolim, G. Duarte, C. Silva, Fast charging electrical bicycles using the existing electric car charge network, Energy Night, Lisbon, May 2012.
Post 10	Patrícia Baptista, Carla Silva, Tiago Farias, ENVIRONMENTAL IMPACTS OF ELECTRIC VEHICLES IN THE PORTUGUESE ROAD TRANSPORTATION SECTOR, CIÊNCIA 2010 - Encontro com a Ciência em Portugal, Centro de Congressos de Lisboa, 4-7 de Julho de 2010.
Post 11	Patrícia Baptista, Carla Silva, Tiago Farias, EVALUATION OF THE IMPACT OF NEW ENERGY SOURCES AND VEHICLE TECHNOLOGIES IN THE PORTUGUESE ROAD TRANSPORT SECTOR, Young European Arena Research YEAR 2010, Finalist on the YEAR Competition on Pillar Future Visions of Transport, Brussels, June 2010.
Post 12	Patrícia Baptista, Carla Silva, Tiago Farias, ENERGY AND CO2 EMISSIONS SCENARIOS OF INTRODUCING NEW VEHICLE TECHNOLOGIES IN THE PORTUGUESE FLEET, International Advanced Mobility Forum, Geneva International Motor Show, Geneva, 9 - 10 March 2010.
Post 13	Patrícia Baptista, Carla Silva, Tiago Farias, EVALUATION OF THE IMPACT OF NEW VEHICLE AND FUEL TECHNOLOGIES IN THE PORTUGUESE ROAD TRANSPORTATION SECTOR, First Annual MIT-Portugal Program Conference: Engineering for Better Jobs, July 07 2009.
Post 14	Patrícia Baptista, Cristina Camus, Carla Silva, Tiago Farias, IMPACT OF THE INTRODUCTION OF ELECTRIC VEHICLES IN THE ISLAND OF SÃO MIGUEL, Second Transatlantic Renewable Energy Conference (TREC09), Angra do Heroísmo, Azores, 2nd-4th April 2009.
Post 15	Cristina Camus, Patrícia Baptista, Carla Silva, Tiago Farias, IMPACT ON ELECTRICITY LOAD PROFILES OF THE INTRODUCTION OF ELECTRIC VEHICLES IN THE ISLAND OF SÃO MIGUEL, 2nd Transatlantic Renewable Energy Conference (TREC09), Angra do Heroísmo, Azores, 2nd-4th April 2009.
Post 16	Patrícia Baptista, Carla Silva, Tiago Farias, BIODIESEL FUEL PATHWAYS FOR THE PORTUGUESE ROAD TRANSPORT SECTOR, Smart Energy Strategies Conference 2008, Zurich – Switzerland, 8-10 September 2008.
Post 17	Pedro Felizardo, Patrícia Baptista, José C. Menezes, M. Joana Neiva Correia, USING NIR SPECTROSCOPY TO MONITER BIODIESEL FUEL QUALITY, Bioenergy, Guimarães, 2008.
Post 18	Pedro Felizardo, Patrícia Baptista, José C. Menezes, M. Joana Neiva Correia, PREDICTING THE IODINE NUMBER AND THE COLD FILTER PLUGGING POINT OF BIODIESEL BY NEAR INFRARED SPECTROSCOPY, Euroanalysis XIV Antwerp September 2007.

Post 19 Pedro Felizardo, Patrícia Baptista, M. Joana Neiva Correia, João Bordado, Ana Paula Soares Dias, BIODIESEL FROM SOYBEAN OIL BY METHANOLYSIS OVER POTASSIUM MODIFIED MgO, Europacat-VIII, Finland, August 2007.

Post 20 Pedro Felizardo, Patrícia Baptista, José C. Menezes, M. Joana Neiva Correia, THE PREDICTION OF FATTY ACID METHYL ESTERS COMPOSITION OF BIODIESEL BY NEAR INFRARED SPECTROSCOPY, 6º Encontro da Divisão de Química Analítica (Analitica'07) Lisboa.

Post 21 Pedro Felizardo, Patrícia Baptista, José C. Menezes, M. Joana Neiva Correia, PREDICTING METHANOL AND WATER CONTENT IN BIODIESEL BY NEAR INFRARED SPECTROSCOPY, 10th International Conference on Chemometrics in Analytical Chemistry.

2.1.8. Thesis (T)

T 1 PhD thesis: Patricia Baptista, Evaluation of the impacts the introduction of alternative fuelled vehicles in the road transportation sector, Instituto Superior Técnico, Lisboa, Portugal, 2011.

T 2 M.Sc. thesis: Patricia Baptista, Use of NIR and MIR Spectroscopies for analytical characterization of biodiesel, Instituto Superior Técnico, Lisboa, Portugal, 2007

T 3 Bachelor's thesis: Patricia Baptista, Development of new analytical methods for the prediction of several biodiesel quality parameters using NIR Spectroscopy, Instituto Superior Técnico, Lisboa, Portugal, 2006.

2.2. Coordination and Participation in Research Projects

Table 4 presents an overview of the participation in projects, followed by a more detailed description of each project.

Table 4 – Summary of participation in projects

Type of Project	Number of Projects	
	Last 5 years	Total
International R&D Projects	1	4
National R&D Projects	5	8
Privately funded projects	-	2
Total	6	14

International R&D Projects (IRDP)

IRDP 1 *Year:* 2016-2018

Project title: **REgenerating mixed-use MED urban communities congested by traffic through Innovative low carbon mobility sOlutions - REMEDIO (Interreg Mediterranean)**

Project description: The goal of the Project is to fasten the implementation of low-carbon mobility solutions in mediterranean cities where the process is at an early stage, starting from urban hot spots characterized by traffic congestion in high-density areas surrounding the city centers
Role in Project: Participation in the IST technical team

IRDP 2 *Year:* 2014-2015

Project title: LNG_PT - Fast tracking the deployment of a European low carbon transport system: the Portuguese Roadmap for LNG in TEN-T corridors (2013-PT-92081-S)

Project description: The goal of the Project is to set out a national policy framework for LNG in road transport to accelerate the uptake of LNG as an alternative fuel for freight transport in the context of the TEN-T network corridors, and in line with the proposal of Directive on the deployment of alternative fuels infrastructure.
Partners: ADENE and IST
Role in Project: Coordination of IST technical team for the state of the art on use of LNG for road freight transport and energy and environmental scenario analysis
Funding: IST ≈30 k€; Total ≈150 k€, funded by the trans-European transport network.

IRDP 3 *Year:* 2014-2015

Project title: FR-EVUE Freight Electric Vehicles in Urban Europe

Project description: The project will demonstrate solutions to the barriers currently inhibiting uptake of EVs in the sector and includes leading European researchers who will design and then implement a common pan-European assessment framework to understand the impacts of these solutions.
Role in Project: Coordination of IDMEC technical team of EV monitoring in urban logistics in the city of Lisbon, sub-contracted for this purpose
Funding: IDMEC ≈6 k€

IRDP 4 *Year:* 2013-2016

Project title: ***DOROTHY - Development of research and planning for sustainable urban logistics including electromobility services for the implementation of an energy-efficient transport system in Europe (319918)***

Project description: The European Project DOROTHY has the mission to enhance the distribution process of urban goods by reducing the number of vehicles and enhancing environmental standards, with a final objective of improving the quality of life in European cities.
Role in Project: Coordination of IST technical team
Funding: IST ≈50 k€; Total ≈196 k€, funded by FP7

National R&D Projects (NRDP)

NRDP 1 *Year:* 2022-2024

Project title: STREETS4ALL - Dynamic and equitable Reallocation of Urban Street Space (PTDC/ECI-TRA/3120/2021)

Project description: STREETS4ALL proposes an Equitable and Dynamic Allocation of Urban Street Space to accommodate the future multi-modal and multi-functional street' uses. We will investigate street design solutions that can adapt its function and use equitably for all modes over time, during predetermined time lengths (e.g., an hour, few hours, or days) and at pre-timed periods (e.g., peak or off-peak hour, day or night time).
Partners: IST, Universidade de Coimbra
Role in Project: Coordination of task 6 on STREETS4ALL solutions energy and environmental impacts and acceptance
Funding: IST ≈142 k€; Total ≈ 208k€

NRDP 2 *Year:* 2020-2023

Project title: Portugal AutoCluster for the future

Project description: "PAC – Portugal AutoCluster for the Future" ("PAC") Project is a mobilizing project led by Simoldes – Plásticos, S.A. and closely aligned with Mobinov Cluster | Cluster Automóvel de Portugal's action plan. Through a set of activities with a high knowledge content, the PAC Project aims to address technological challenges specifically identified in the national automotive sector, which may leverage the competitiveness level of the entities operating within the automotive sector in Portugal and their position (and prominent) in an worldwide context.
Partners: Controlar, Critical Manufacturing, ERT, Microplásticos, Sakthi, SLM, TMG. Parceiros não empresariais: CCG, CEiiA, CENTI, CITEVE, INEGI, INESC TEC, IPN, IPL, ISQ, IST, MOBINOV e Universidade de Aveiro.
Role in Project: Coordination of the IST technical team in PPS1
Funding: IST ≈130 k€; Total ≈ 2.400k€

NRDP 3 *Year:* 2020-2023

Project title: BATERIAS 2030 – Batteries as a central element of urban sustainability

Project description: The project's vision includes the development of the batteries of the future and introduce these technological developments in applied solutions in the urban environment, responding to the challenges of decarbonisation and of sustainable energy communities.
Partners: DST Solar, Bysteel FS, WATT-IS, Innovation Point, EFACEC, Addvolt, CMP, CHARGE2C, Visblue, INL, FEUP, IST, CENTIVC, CeNTI, LNEG, CEIIA, INESC TEC, INESC-MN, UNIVERSIDADE DO MINHO, Omniflow, 3DRIVERS, ZEEV, Amnis Pura
Role in Project: Participation in IST technical team
Funding: IST ≈545 k€; Total ≈9.800 k€

National R&D Projects (NRDP)

NRDP 4 *Year:* 2020-2023

Project title: C-TECH

Project description: C-Tech aims at researching, developing and pilot-scale a digital smart city platform for urban modelling and planning which, based on a three-dimensional representation of the city and its combination with multiple data from different data sources will allow to simulate different scenarios regarding energy-efficiency of buildings, green structures' creation and urban mobility energy efficiency, empowering local authorities to identify and tackle specific environmental issues, overcome the global challenge of decreasing urban carbon footprint and fostering the transition to a net-zero ecosystem.
Partners: NOS, Ceiia, IST, NOVA, Lisboa E-Nova, MIT
Role in Project: Participation in IST technical team for WP6
Funding: IST ≈631 k€; Total ≈2.400 k€

NRDP 5 *Year:* 2018-2021

Project title: ExpoLis: Assessment of human exposure to air pollution to change the way people move in cities (FCT project LISBOA-01-0145-FEDER-032088)

Project description: ExpoLis aims to develop an air quality exposure sensing system, composed by a network of sensor nodes, and deploy it on public transportation (buses) to obtain the real-time air pollution distribution in urban areas. The implementation of the ExpoLis system will be conducted in Lisbon to demonstrate its applicability to assess the exposure to air pollutants in different commuting modes, to support urban planning policies, environment scientists and transport companies by generating massive air pollution data sets and to provide a health-optimal routing service to the population.
Partners: IST, ISCTE
Role in Project: Participation on IST technical team
Funding: IST ≈100 k€; Total ≈200 k€

NRDP 6 *Year:* 2015-2017

Project title: SusCity: Urban data driven models for creative and resourceful urban transitions (FCT project reference MITP-TB/C S/0026/2013)

Project description: SusCity focuses on developing and integrating new tools and services to promote urban resource efficiency with minimum environmental impacts while contributing to promote economic development and preserving actual levels of reliability. SusCity takes an integrated and application-oriented research approach by focusing on urban interventions in Lisbon, at the "Parque das Nações" testbed.
Partners: IST, IDMEC, University of Coimbra, INESC TEC, Faculdade de Ciências, University of Minho, LNEG
Role in Project: Coordination of Tasks 4.1, 4.2 and 4.3 activities
Funding: IDMEC ≈100 k€; Total ≈1.250 k€

National R&D Projects (NRDP)

NRDP 7 *Year:* 2009-2011

Project title:* *MOBI-MPP - Assessment and Development of Integrated Systems for Electric Vehicles

Project description: The Portuguese government is committed to promote the development of sustainable vehicles as part of a strategy to accomplish new paradigms of mobility. This gives the opportunity to the MIT-Portugal Program to develop research activities in relevant technological areas.
Partners: Minho University, FEUP, IST
Role in Project: Participation in the IDMEC research activities
Funding: IDMEC N/A; Total ≈340 k€

NRDP 8 *Year:* 2009-2011

Project title:* *Power demand estimation and power system impacts resulting of fleet penetration of electric/plug-in vehicles

Project description: This research project aims at deriving a forecast/backcast fleet model to estimate the impact in global energy consumption, CO_2 emission and power system grid resulting from the penetration of alternative vehicle technologies in the road vehicle fleet.
Partners: IDMEC, IST and INESC-Porto
Role in Project: Participation in the IDMEC research activities
Funding: IDMEC ≈76 k€; Total ≈196 k€

Privately funded projects (PFP)

PFP 1 *Year:* 2013

Project title: The Use Of Small Sized Mobility Solutions As A Cleaner Mobility Option: The Last Mile Problem

Project description: Organization of event to discuss topics associated to last mile delivery such as the use of electric mobility and cargo-bikes
Partners: IDMEC and University Transportation Research Center - New York
Role in Project: Participation in the IDMEC team
Funding: IDMEC ≈5 k€; Total ≈20 k€, funded by New York State Energy Research and Development Authority

PFP 2 *Year:* 2011-2013

Project title: i2d - intelligence to drive Project

Project description: Technological development of on-board monitoring device and application in demo tests
Partners: IDMEC, ITDS and FAI
Role in Project: Participation in the IDMEC technical team
Funding: IDMEC ≈50 k€, funded by Portuguese Innovation Support Fund (FAI)

2.3. Reviewing and evaluation activities

2.3.1. Reviewing activities in international journals

Regular revision of papers for international peer-reviewed journals namely:

- Accident Analysis and Prevention (http://www.journals.elsevier.com/accident-analysis-and-prevention/)
- Challenges (http://www.mdpi.com/journal/challenges)
- Energy (https://www.journals.elsevier.com/energy)
- Energies (http://www.mdpi.com/journal/energies)
- Energy Strategy Reviews (http://www.journals.elsevier.com/energy-strategy-reviews/)
- International Journal of Hydrogen Energy (http://www.journals.elsevier.com/international-journal-of-hydrogen-energy/)
- International Journal of Sustainable Transportation (http://www.tandfonline.com/toc/ujst20/current)
- Journal of Near Infrared Spectroscopy (http://www.impublications.com/content/journal-near-infrared-spectroscopy)
- Journal of Power Sources (http://www.journals.elsevier.com/journal-of-power-sources/)
- Journal of Transportation Technologies (http://www.scirp.org/journal/jtts/)
- Sustainability (http://www.mdpi.com/journal/sustainability)
- Sustainable Energy, Grids and Networks (http://www.journals.elsevier.com/sustainable-energy-grids-and-networks/)
- Transport Policy (http://www.journals.elsevier.com/transport-policy/)
- Transportation Research Part A (http://www.journals.elsevier.com/transportation-research-part-a-policy-and-practice/)
- Transportation Research Part D (http://www.journals.elsevier.com/transportation-research-part-d-transport-and-environment/)

2.3.2. Reviewing activities for international conferences

- Revision of 4 conference papers for Transport Research Arena Conference Lisbon 2022, 14 - 17 November 2022
- Revision of 3 conference papers for EVS35 Symposium Oslo, Norway, June 11 – 15th, 2022

- Revision of 2 conference papers for EVS34 Symposium Nanjing, China, June 25 – 28th, 2021
- Revision of 7 conference papers for EVS33 Symposium Portland, USA, June 14-17, 2020
- Revision of 8 conference papers for EVS32 Symposium Lyon, France, May 19-22, 2019
- Revision of 1 conference papers for EURO Working Group on Transportation Meeting (EWGT), Budapest, 4-6 September 2017
- Revision of 9 conference papers for EVS30 Symposium Stuttgart, Germany, October 9 - 11, 2017
- Revision of 3 conference papers for the 17th Meeting of the European Working Group on Transportation 2014
- Revision of 9 conference papers for the 16th Euro Working Group on Transportation 2013

2.3.3. Other reviewing activities

- Revision of 1 book proposal for ELSEVIER on "Electric Vehicles for Smart Cities and Communities: Challenges and Future Trends", August 2017
- Revision of 2 deliverable of the Drawdown Project as part of the External Review Process, September-December 2021.

2.3.4.Evaluation of proposals

- Evaluation of 1 project proposal for the WILL International Chairs (2023)
- Evaluation of 1 Post-doctoral project for the European Science Foundation (2020)
- Member of the evaluation jury of the Doctoral Scholarships of ULisboa 2018, in the area of Environment and Energy (2018)

2.4. Participation in research networks

- Founding member of RIEMOB, Red Iberoamericana de Investigación en Electro-Movilidad (2020-…)
- Member of the Portuguese Mobility and Transportation Research Group
- Member of NECTAR - Network on European Communications and Transport Activities Research

2.5. Member of Research Units

- Integrated Member of LARSYS – Laboratório de Robótica e Sistemas de Engenharia (from October 2016 to present) as an Integrated Researcher.
- Integrated Member of LAETA - Associated Laboratory for Energy, Transports and Aeronautics in January 2012 to September 2016 as a post-doctoral researcher.
- Member of LAETA - Associated Laboratory for Energy, Transports and Aeronautics from 2009 – 2010 as a PhD student.

3. Teaching

3.1. *Teaching activities*

Teaching has been an important component along with R&D activities, in order to pass on technical knowledge and instill strong work ethics on engineering students. Table 5 presents a summary of the teaching activities performed.

Table 5 – Summary of teaching activities

Course		Number of semesters
Undergraduate	Energy Management, LEGI, IST	1
	Management of Energy Systems, LEGI, IST	3
	Thermodynamics II	1
M.Sc.	Energy and Sustainability, MEMEC, IST	2
	Industrial Ecology, MEMEC, IST	1
	Energy in Transports, MEMEC, IST	1
	Energy in transports and sustainable mobility, EGER, ISEL	7
	Management operations in public road passenger transport, FEUP	1
Ph.D.	Energy Management, SES PhD, IST	2
	Energy in Transports, SES PhD, IST	3
Total		19

Undergraduate

Spring Semester 2014/2015	**Energy Management, Industrial Engineering and Management (LEGI),** Instituto Superior Técnico *Main responsibilities:* Lecturer on Energy use in transports and legislation, alternative energy pathways and technologies for the transportation sector, fleet energy audits and life-cycle analysis applications in transports. Total of 8 hours.
Spring Semester 2015/2016 Spring Semester 2016/2017 Spring Semester 2018/2019	**Management of Energy Systems, in Industrial Engineering and Management (LEGI), Instituto Superior Técnico** *Main responsibilities:* Lecturer on Energy use in transports and legislation, alternative energy pathways and technologies for the transportation sector, fleet energy audits and life-cycle analysis applications in transports. Total of 8 hours.

M.Sc.

Fall Semester 2021/2022	Energy and Sustainability, MEMEC, IST *Main responsibilities:* Lecturer on energy use in transports, dynamics and overall energy use, alternative mobility strategies, and case studies towards net zero mobility strategies. Total of 16 hours.
Fall Semester 2012/2013	Energy in Transports, MEMEC, IST **Energy in Transports within Mechanical and Environmental Engineering M.Sc. degree,** Instituto Superior Técnico *Main responsibilities:* Lecturer of alternative energy pathways and technologies for the transportation sector, fleet energy audits and life-cycle analysis applications in transports, including laboratorial classes
Spring Semester 2021/2022 Spring Semester 2020/2021 Spring Semester 2019/2020 Spring Semester 2018/2019 Spring Semester 2017/2018 Fall Semester 2016/2017 Fall Semester 2015/2016	**Energy in transports and sustainable mobility, Pós-graduação em engenharia e gestão de energias renováveis (EGER), Instituto Superior de Engenharia de Lisboa** *Main responsibilities:* Course responsible. Concepts on sustainable mobility and different concept for energy efficiency. Methodologies to estimate energy consumption and pollutants emissions. Total of 28 hours.
July 2014	Management operations in public road passenger transport, FEUP **Management operations in public road passenger transport,** Faculdade de Engenharia da Universidade do Porto *Main responsibilities:* Lecturer on Energy Efficiency on public road passenger transport

Ph.D.

Spring Semester 2014/2015 Spring Semester 2015/2016	**Energy Management, within the Sustainable Energy Systems Ph.D., MIT Portugal Program, Instituto Superior Técnico** *Main responsibilities:* Lecturer on Energy systems and energy prices, energy demand management, monitoring and energy businesses, Portuguese Energy Balance, Primary, Final and Useful Energy, Energy flow Diagrams (Sankey Diagrams), Methodologies to compute primary Energy, Energy use in transports and legislation.
1. Fall Semester 2011/2012 2. Fall Semester 2012/2013 3. Fall Semester 2013/2014	Energy in Transports, SES PhD, IST **Energy in Transports, Sustainable Energy Systems Ph.D., MIT Portugal Program**, Instituto Superior Técnico *Main responsibilities:* Lecturer of alternative energy pathways and technologies for the transportation sector, fleet energy audits and life-cycle analysis applications in transports, including laboratorial classes

3.2. Supervision of students

Table 6 presents the number of students that were supervised or co-supervised by the researcher, followed by the title and institution of all the supervising activities.

Table 6 – Summary of supervision of students

Degree	Number of students	
	Concluded	On-going
Ph.D.	5	1
M.Sc.	47	11
Final work	3	-
Total	**55**	**12**

3.2.1. Ph.D.

Concluded

PhD 1 ***Student:*** **Marta Faria**

Dates: October 2015 – December 2018

Title: Assessing the influences between driving environment and driving performance

Institution: Instituto Superior Técnico, University of Lisbon, Portugal

Area: Ph.D. in Transportation Systems

Role: Co-supervisor

PhD 2 ***Student:*** **Catarina Rolim**

Dates: January 2012 – February 2016

Title: Impacts of adopting on board ICT and training on driving behavior, safety, energy and environment: application to light duty vehicles and buses
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: Ph.D. in Sustainable Energy Systems
Role: Co-supervisor

PhD 3 ***Student:*** **Felix Amankwah Diawuo**

Dates: May 2018 – May 2020

Title: Methodological approach for the design of sustainable electrification in developing countries through demand side management: The case study of Ghana
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: Ph.D. in Sustainable Energy Systems
Role: Co-supervisor

PhD 4 ***Student:*** **Alessandro Giordano**

Dates: February 2017 – March 2020

Title: Environmental and economic prospects of battery delivery vans in support of European Commission 2030 City Logistics Goal
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: Ph.D. in Engineering and Public Policy, CMU Portugal Program
Role: Co-supervisor

PhD 5 ***Student:*** **Tatiana Bruce da Silva**
Dates: September 2019 – November 2022

Title: Assessing pathways for climate change mitigation of the road passenger transportation sector in Rio de Janeiro, Brazil, using a hybrid energy systems-general equilibrium economic model approach
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: Ph.D. in Sustainable Energy Systems
Role: Co-supervisor

On-going

PhD 6 ***Student:*** **Carolina Correia**
Dates: January 2021 – …

Title: Assessment of individual daily exposure to traffic related air pollutants
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: Ph.D. in Environmental Engineering
Role: Co-supervisor

3.2.2. M.Sc.

Concluded

MSc 1 ***Student:*** **Luís Martinho**
Dates: February 2021 – October 2021

Title: Assessing potential demand for H_2 in the industry sector
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 2 ***Student:*** **Jeremy Diacre**
Dates: August 2021 – October 2021

Title: Determinants for the energy, environmental and cost impacts of mobility patterns in the Lisbon Metro Area
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Energy Engineering and Management
Role: Co-supervisor

MSc 3 ***Student:*** **João Espadinha**
Dates: February 2021 – October 2021

Title: Assessing the value proposition of P2P energy markets for decarbonizing the economy by 2050
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 4 ***Student:*** **Pedro Rosa**
Dates: February 2021 – October 2021

Title: Self-consumption optimization: a comparison between different energy communities' configurations
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 5 ***Student:*** **João Nunes**
Dates: February 2021 – October 2021

Title: Evaluation of the energy and environmental performance of alternative vehicle technologies through representative speed profiles
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 6 ***Student:*** **Carolina Belga**
Dates: January 2020 – July 2021

Title: Multimodal emission factors for different distances from urban travel
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Energy Management Engineering
Role: Co-Supervisor

MSc 7 ***Student:*** **Francisco Belmar**
Dates: September 2020 – July 2021

Title: Design and modelling of renewable energy communities as tool for low-carbon energy systems
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 8 ***Student:*** **Rafael Afonso**
Dates: September 2020 – July 2021

Title: Sustainability Assessment in Road Vehicles
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 9 ***Student:*** **David Martins**
Dates: September 2020 – July 2021

Title: Impacts of EV transition in municipal fleet
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 10 ***Student:*** **João Marques**
Dates: February 2020 – July 2021

Title: Estudo de soluções zero emissões numa empresa de distribuição postal
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 11 ***Student:*** **Inês Fernandes**
Dates: February 2020 – December 2020

Title: Evaluation of energy efficiency measures in a fleet of urban public transport
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 12 ***Student:*** **Maria Teresa Ramalho**

Dates: February 2020 – December 2020

Title: Impacte energético e económico de medidas de eficiência energética numa frota de veículos pesados de mercadorias
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 13 ***Student:*** **Hugo Ferreira**

Dates: February 2019 – July 2020

Title: Engine and motor operation management in PHEV
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 14 ***Student:*** **Ana Filipa Reis**
Dates: February 2019 – July 2020

Title: Life-cycle assessment of e-scooters for urban mobility
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Civil Engineering
Role: Co-Supervisor

MSc 15 ***Student:*** **Shemin Sagaria**
Dates: October 2019 – July 2020

Title: Powertrain simulation and design according to different vehicle segments
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Energy Management Engineering
Role: Co-Supervisor

MSc 16 ***Student:*** **Hélder Machado**
Dates: October 2019 – July 2020

Title: ***Energy optimization of vehicle fleet in public company***
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Energy Management Engineering
Role: Co-Supervisor

MSc 17 ***Student:*** **Brais Franco**
Dates: January 2020 – September 2020

Title: Analyzing the competitiveness of offshore hydrogen offloading systems
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Energy Management Engineering
Role: Co-Supervisor

MSc 18 ***Student:*** **Andrea Santopaolo**
Dates: February 2019 – October 2019

Title: Sustainable development: The real case study of the Koinonia Community
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Energy Management Engineering
Role: Co-Supervisor

MSc 19 ***Student:*** **Joana Vicente**
Dates: February 2019 – December 2019

Title: Consumer Adoption of Next Generation (CASE) Vehicles
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Environmental Engineering
Role: Co-Supervisor

MSc 20 ***Student:*** **Daniel Runa**
Dates: February 2018 – June 2019

Title: Valorização energética do biogás produzido em ETARs do Grupo Águas de Portugal
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 21 ***Student:*** **Pedro Santana**
Dates: February 2018 – June 2019

Title: Thermal Performance Evaluation of Electric Vehicles
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 22 ***Student:*** **Bernardo Leiria**
Dates: March 2018 – November 2018

Title: Energy Assessment of Bus Allocation to Specific Routes
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 23 ***Student:*** **Grzegorz Zamojski**
Dates: March 2017 – June 2018

Title: Domestic crude oil extraction, as a pathway to sustainable low carbon economy
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Energy Management Engineering
Role: Co-supervisor

MSc 24 ***Student:*** **Mário Pelicano**
Dates: February 2017 – June 2018

Title: Promoting energy efficiency in an automotive industrial unit
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 25 ***Student:*** **Hugo Fernandes**
Dates: February 2017 – June 2018

Title: Evaluation of real world performance of electric bus
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 26 ***Student:*** **Tiago Malhão**
Dates: September 2016 – November 2017

Title: Assessment of the influence of external factors on energy consumption and emissions of light duty vehicles
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 27 ***Student:*** **André Ferreira**
Dates: February 2017 – December 2017

Title: Energy efficiency measures in agro-industrial factory
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 28 ***Student:*** **Hélder Lima Ferreira**
Dates: October 2014 – December 2017

Title: Urban logistics applications using electric mobility
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 29 ***Student:*** **Madalena Lopes**
Dates: September 2016 – June 2017

Title: Anaerobic co-digestion of horse manure and pig slurry for biogas production
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 30 ***Student:*** **Pedro Preto**
Dates: February 2016 – November 2016

Title: Development of energy efficiency measures for the Lisbon municipality fleet
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 31 ***Student:*** **João Saraiva**
Dates: February 2016 – June 2017

Title: Development of energy efficiency measures for a heavy-duty cargo fleet
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 32 ***Student:*** **Raquel Castanheira**
Dates: September 2016 – June 2017

Title: Assessment of energy intensity trends in Portuguese municipalities
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 33 ***Student:*** **Miguel Santiago**
Dates: February 2016 – November 2016

Title: Assessment of potential applications for electric mobility
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 34 ***Student:*** **Ruben Guerra**
Dates: February 2016 – November 2016

Title: Impacts of alternative vehicle technologies in European countries
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 35 ***Student:*** **Rui Fiuza**
Dates: February 2016 – November 2016

Title: Assessing energy efficiency measures in bus fleet
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 36 ***Student:*** **Filipe Paulino**
Dates: June 2015 – July 2016

Title: Life cycle analysis of the EU transportation sector
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 37 ***Student:*** **Cristiano Rodrigues**
Dates: February 2015 – July 2016

Title: Assessment of policies to promote alternative energy sources in the electricity generation sector
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 38 ***Student:*** **Hugo Martins**
Dates: February 2015 – July 2016

Title: Definition and evaluation of representative driving cycles of real world conditions in different urban contexts
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 39 ***Student:*** **Rafael Reis**
Dates: February 2015 – July 2016

Title: Impacts of eco-driving and energy efficiency measures for heavy-duty freight fleet
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 40 ***Student:*** **Patrícia Ribeiro**
Dates: October 2014 – June 2015

Title: Evaluation of the vehicle dynamics, energy and environmental impacts of traffic calming measures
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Environmental Engineering
Role: Supervisor

MSc 41 ***Student:*** **Mário Martins**
Dates: February 2014 – June 2015

Title: Energy and environmental impacts assessment of electric vehicles in different EU countries
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

MSc 42 ***Student:*** **Eduardo Mendonça**
Dates: March 2013 - June 2014

Title: ICT in the transportation sector: potential market, impact quantification, implementation scenarios in the Lisbon region
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Environmental Engineering
Role: Supervisor

MSc 43 ***Student:*** **Magno André Nunes Mendes**
Dates: March 2013 – October 2013

Title: Experimental evaluation of conventional and electric bicycles and motorcycles in urban context
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 44 ***Student:*** **José Tavares**
Dates: March 2013 – October 2013

Title: Application potential and energy and environmental impacts of EV and PHEV in São Miguel
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Supervisor

MSc 45 ***Student:*** **Maria Rosário Crujo**
Dates: March 2011 – October 2011

Title: Refueling/recharging infrastructure life-cycle assessment
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Environmental Engineering
Role: Co-supervisor

MSc 46 ***Student:*** **Manuel Valente**
Dates: October 2010 – October 2011

Title: Cost-benefit analysis of alternative technologies
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Industrial Engineering and Management
Role: Co-supervisor

MSc 47 ***Student:*** **Manuel Branco Nery Nina**
Dates: March 2010 – October 2010

Title: Introduction of Electric Vehicles in Portugal - A Cost-benefit Analysis
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-supervisor

On-going

MSc 48 ***Student:*** **João Martins**
Dates: September 2020 – …

Title: Assessing the impacts of hydrogen in the Portuguese energy system
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 49 ***Student:*** **José Simões**
Dates: September 2020 – …

Title: A Modelling and Assessing Energy performance and Influential Factors of Cargo Ships and Power By Gas turbines or Fuel cells
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 50 ***Student:*** **Pedro Murta**
Dates: September 2020 – …

Title: Avaliação energética, ambiental e económica de frota municipal
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in **Industrial Engineering and Management**
Role: Supervisor

MSc 51 ***Student:*** **José Magalhães**
Dates: September 2020 – …

Title: Integrated evaluation of thermal performance in electric propulsion systems
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Aero spatial Engineering
Role: Co-supervisor

MSc 52 ***Student: José Maria Carvalho***
Dates: February 2022 – …

Title: Evaluation of wireless charging systems from the point of view of energy transfer in electric mobility
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 53 ***Student: Manuel Bonito***
Dates: February 2022 – …

Title: Assessment of the most influential variables in the definition of energy communities in Portugal
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 54 ***Student: Miguel Piçarra***
Dates: February 2022 – …

Title: Assessment of environmental impacts of electric vehicle in alternative material, use and end-of-life scenarios using life cycle analysis
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 55 ***Student: Beatriz Carrasco***
Dates: February 2022 – …

Title: Energy impacts of alternative scenarios for adopting electric mobility and shift modal at building scale
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 56 ***Student: Henrique Durão***
Dates: February 2022 – …

Title: Assessing potential decarbonization pathways for the aviation sector
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 57 ***Student: Pedro Lima***
Dates: February 2022 – …

Title: Analysis of the impact on building and mobility energy consumption from vacant building rehabilitation in Lisbon
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

MSc 58 ***Student: Luís Azevedo***
Dates: February 2022 – …

Title: Assessment of a hybrid propulsion system for airport operations
Institution: Instituto Superior Técnico, University of Lisbon, Portugal
Area: M.Sc. thesis in Mechanical Engineering
Role: Co-Supervisor

3.2.3. Post-graduation final work (FW)

Concluded

FW 1 ***Student:*** **Everton Rebelo**

Dates: May 2021 – September 2021

Title: Portugal 2050 and the Road Transport Sector
Institution: Instituto de Engenharia de Lisboa, Portugal
Area: Post-graduation in renewable energies
Role: Supervisor

FW 2 ***Student:*** **Ekaterina Nagarova**

Dates: May 2021 – September 2021

Title: Comparison of total cost of ownership for alternative vehicle technologies in different vehicle segments
Institution: Instituto de Engenharia de Lisboa, Portugal
Area: Post-graduation in renewable energies
Role: Supervisor

FW 3 ***Student:*** **Pedro Matos**

Dates: July 2016 – September 2016

Title: Introduction of Renewable Energies in Lisbon's Logistics Sector
Institution: Instituto de Engenharia de Lisboa, Portugal
Area: Post-graduation in renewable energies
Role: Supervisor

3.2.4. Supervision of awarded students (SAS)

SAS 1 Ana Filipa Reis, Life-cycle assessment of e-scooters for urban mobility, Prémio ULisboa-redeMOV 2021 in the best MSc Work category.

SAS 2 Hélder Machado, *Energy optimization of vehicle fleet in public company, 1st prize in GALP21 Internship Program 2021.*

SAS 3 *Rafael Reis, Impacts of eco-driving and energy efficiency measures for heavy-duty freight fleet, 2nd prize in GALP21 Internship Program 2016.*

3.3. Establishment and strengthening of infrastructures of experimental and/or computational nature to support teaching

As a team member of the Center for Innovation, Technology and Policy Research (IST), the researcher has been playing a leading role in establishing and strengthening of experimental and computational nature that can support teaching as part of laboratory classes or group projects in several *Environment and Energy* Curricular Units, as well as enabling the development of M.Sc. thesis. As example, from the supervised dissertations presented in section 3.2, 22 were based on an experimental approach, while 29 were

focused on the development of simulation models. A more detailed description of these activities is presented next:

Experimental

- Collection and use of cell-phone data for the characterization of mobility patterns (task in collaboration with Ceiia as part of the C-Tech Project).
- Expansion of vehicle monitoring laboratory to alternative vehicle technologies, in particular to electric mobility, with the inclusion of light-duty vehicles, quadricycles, scooters and bicycles. The expansion to fuel cell vehicle is being currently developed.

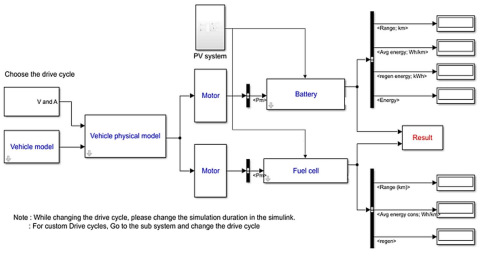




- Large scale monitoring of vehicles using on-board monitoring devices in the Lisbon area and implementation of feedback demonstration projects.
- Expansion of driver monitoring laboratory to include physiological responses such as heart rate and stress signals.
- Laboratorial assessment of renewable energy sources (e.g. biogas, hydrogen) production and consumption (task in collaboration with Prof. Elisabeth Duarte from ISA)

Numerical

- Development of vehicle micro-simulation model of vehicle energy performance considering conventional and alternative vehicle technologies. This model has been developed in a modular approach to incorporate different capacities (e.g. vehicle integrate photovoltaics, dynamic recharging capacity).
- Development of journey planner on top of Google Maps or Open Street Maps, to evaluate more efficient routes, the impact of eco-driving techniques, and of using different vehicle technologies. This journey planner connects with the previous model.



SimaPro
GREET LIFE-CYCLE MODEL
OSeMOSYS Open Source Energy Modelling System
FASTSim
copert 5

- Benchmark of developed models with FASTSim: Future Automotive Systems Technology Simulator, and with COPERT which can be used in teaching environment (either as laboratorial classes or for the development of group projects).

- Acquisition of SIMAPRO license, for evaluating the impacts of products. These activities have focused mainly on alternative materials for incorporation in vehicle components, integrated vehicle assessment focused on alternative vehicles technologies, evaluation of different battery chemistries and end-of-life scenarios. These capacities are the used in several Energy and Environment curricular units.
- Development of energy planning models at country or state scale using OSeMOSYS with an innovative connection to MATLAB for a general equilibrium model capable of optimizing consumer welfare.

3.4. Professional training

2,3, 4, 8, 9, 10 May 2018 **Title: Electric mobility and the sustainability of the transport sector**

3, 8 May 2017 *Institution:* BMW, Portugal

Role: Main lecturer

3.5. Pedagogical material

- Farias, T, Baptista, P., Gonçalves, G., Faria, A.M., Duarte, G., Energy and Emissions in Road Transportation – Support material for Energy in Transports Course, Fall semester 2013.

3.6. Training activities in the pedagogical areas

- P. Baptista, IST Workshop on Pedagogical Skills for Teaching Assistants, 11, 14, 15 and 16th March 2022.

4. Knowledge transfer

The activities regarding Knowledge transfer are presented next.

4.1. Provision of services (S)

S 1 ***Service:*** **Study on Biofuels and Alternative Fuels**
Years: 11/2021→ …
Funding institution: 3drivers

S 2 ***Service:*** **Follow-up of energy and environment audit to the fleets of EDP**
Years: 01/2016→ 02/2016
Funding institution: EDP Valor

S 3 ***Service:*** **Development of representative mobility basket-of-products (road, rail and air transport) for EU27 as well as the level of service provided; quantification of life-cycle impacts according to the ILCD methodology**
Years: 06/2014→ 09/2014
Funding institution: European Commission, Directorate-General Joint Research Centre

S 4 ***Service:*** **Development of energy and environment audit to the fleets of EDP**
Years: 2013→ 2014
Funding institution: EDP Valor, through contract with Livedrive

4.2. Provision of consultancy (C)

C 1 ***Project title:*** **Quantification of impacts of urban mobility platforms**
Year: 2016
Project description: Characterize existing urban mobility platforms and define best architecture according to stakeholder's interests
Partners: Brisa Inovação e Tecnologia and IDMEC
Role in Project: Coordination of IDMEC team
Funding: IDMEC ≈25 k€; Total ≈25 k€, funded by Brisa Inovação e Tecnologia

C 2 ***Project title:*** **Energy efficiency measure for the municipality of Odemira**
Year: 2015-2016
Project description: Development and analysis of scenarios for sustainable energy development of the municipality of Odemira
Partners: Câmara Municipal de Odemira and IST
Role in Project: Assessment of measures in mobility work package
Funding: N/A

C 3 ***Project title:*** **Urban mobility platform**
Year: 2014-2015
Project description: Characterize existing urban mobility platforms and define best architecture according to stakeholder's interests
Partners: Brisa Inovação e Tecnologia and IDMEC
Role in Project: Coordination of IDMEC team
Funding: IDMEC ≈30 k€; Total ≈30 k€, funded by Brisa Inovação e Tecnologia

C 4 ***Project title:*** **Energy and Environmental Impacts Quantification of the Lisbon Municipality Fleet**
Year: 2014-2015

Project description: Perform the characterization of the energy and environmental impacts of the Lisbon Municipality Fleet
Partners: Lisboa E-Nova and IDMEC
Role in Project: Coordination of IDMEC team
Funding: IDMEC ≈4 k€; Total ≈4 k€, funded by Lisboa E-Nova

C 5 ***Project title:*** **State of Practice of Electric Vehicles and Charging Solutions**
Year: 2014-2015

Project description: Characterize the current market of electric vehicles and of charging equipment
Partners: Prio.e and IDMEC
Role in Project: Coordination of IDMEC team
Funding: IDMEC ≈2 k€; Total ≈2 k€, funded by Prio.e

C 6 ***Project title:*** **Douro Cruiser ship emissions report**
Year: 2013

Project description: On-board monitoring of emissions resulting of the operation of the Douro Cruiser ship
Partners: IDMEC and Douro-Azul
Role in Project: Participation in the IDMEC technical team
Funding: IDMEC ≈1 k€ funded by Douro Azul

C 7 **Project title: Support in activities for the projects: Electric mobility, Remote sensing, Smart meters for efficient decisions**
Year: 2012-2013

Project description: Provide support in electric mobility activities related to the Lisbon's Mobi.e network deployment and with smart meter information data-processing
Partners: IDMEC and Lisboa E-Nova
Role in Project: Coordination of IDMEC team
Funding: IDMEC ≈4 k€ funded by Lisboa E-Nova

C 8 **Project title: Monitoring the use of electric vehicles by early adopters**
Year: 2012

Project description: Monitor the use of privately owned and company owned electrics vehicles by survey before and after the adoption of the alternative vehicle technology
Partners: IDMEC and EMEL
Role in Project: Coordination of IDMEC team
Funding: IDMEC ≈2 k€ funded by EMEL

C 9 **Project title: Impacts of on-board devices and eco driving training on urban passengers bus drivers' behavior**
Year: 2012

Project description: Develop data–processing methodologies related to driver monitoring information from the 100 instrumented vehicles in the Lisbon region
Partners: IDMEC and Rodoviária de Lisboa
Role in Project: Coordination of IDMEC team
Funding: N/A

C 10 **Project title: Characterization of worldwide usage of bike sharing systems Project - State of Practice of Bike-sharing systems**
Year: 2012

Project description: Perform a worldwide characterization of bike-sharing systems and development of analysis metrics
Partners: IDMEC and Prio.e
Role in Project: Coordination of IDMEC team
Funding: IDMEC ≈1 k€ funded by Prio.e

C 11 **Project title: Monitoring of 5 pre-production Plug-in Toyota Prius in real world usage conditions**
Year: 2011

Project description: Monitoring the deployment in real word usage condition of 5 Toyota Prius Plug-in
Partners: IDMEC and Galp Energia
Role in Project: Participation in the IDMEC technical team
Funding: IDMEC ≈10 k€, funded by Galp Energia

C 12 **Project title: Development of the platform MOBI.E MAPS for the comparison of vehicle technologies**

Year: 2010-2011

Project description: Development of life-cycle characterization metrics of vehicle technologies to be applied in the platform MOBI.E MAPS
Partners: IST/IN+, IDMEC and INTELLI, NOVABASE
Role in Project: Participation in the technical team
Funding: N/A

C 13 **Project title: Roteiro Nacional das Energias Renováveis - Aplicação da Directiva 2009/28/CE, collaboration in the transportation sector focus group**
Year: 2010

Project description: Participation in transportation sector focus group for the development of the renewable energy national roadmap
Partners: IDMEC and APREN
Role in Project: Participation in the IDMEC technical team
Funding: N/A

C 14 **Project title: Location of Lisbon's electric vehicle's recharging points**
Year: 2010

Project description: Definition of an analysis algorithm for the analysis of the optimal location of EV recharging points in the city of Lisbon
Partners: IDMEC and Lisboa E-Nova
Role in Project: Participation in the IDMEC technical team
Funding: IDMEC ≈4 k€ funded by Lisboa E-Nova

C 15 **Project title: Fuel Cell Hybrid Taxi Life Cycle Analysis Study**
Year: 2010

Project description: Quantification of life-cycle analysis associated to different powertrain options for a London taxi
Partners: IDMEC and Intelligent Energy
Role in Project: Participation in the IDMEC technical team
Funding: IDMEC ≈7.5 k€ funded by Intelligent Energy

C 16 **Project title: Development of scenarios on the Portuguese vehicle stock and impacts on its energy consumption**
Year: 2009-2011
Project description: Development of a fleet model methodology for the Portuguese transportation sector and evaluation of future scenarios
Partners: IDMEC and Galp Energia
Role in Project: Participation in the IDMEC technical team
Funding: IDMEC ≈10 k€ funded by Galp Energia

4.3. Supervision of industrial internships (SII)

SII 1 Supervision of GALP21 activities with **Transportes Coletivos do Barreiro** on "Avaliação de medidas de eficiência energética numa frota de transportes coletivos urbanos", February 2020 – December 2020

SII 2 Supervision of GALP21 activities with **CTT** on "Estudo de soluções zero emissões numa empresa de distribuição postal", February 2020 – December 2020

SII 3 Supervision of GALP21 activities with **Transportes Gama** on "Impacte energético e económico de medidas de eficiência energética numa frota de veículos pesados de mercadorias", February 2020 – December 2020

SII 4 Supervision of GALP21 activities with **Sotecnica** on "Otimização energética de frota automóvel de empresa de obras públicas", October 2019 – July 2020

SII 5 Supervision of GALP21 activities with **Rodoviária de Lisboa** on "Avaliação Energética da Alocação de Autocarros a Rotas Específicas", February 2018 – October 2018

SII 6 Supervision of GALP21 activities with **Águas de Portugal** on "Valorização energética do biogás produzido em ETARs do Grupo Águas de Portugal", February 2018 – October 2018

SII 7 Supervision of GALP2020 activities with **Rações Porto Alto** on Energy efficiency measures in agro-industrial factory, February 2017 – October 2017

SII 8 Supervision of GALP2020 activities with **Continental** on Energy efficiency measures in automobile industry, February 2017 – June 2018

SII 9 Supervision of GALP2020 activities with **Câmara Municipal de Lisboa** on Development of energy efficiency measures for the Lisbon municipality fleet, February 2016 – November 2016

SII 10 Supervision of GALP2020 activities with **EGEO** on Development of energy efficiency measures for a heavy-duty cargo fleet, February 2016 – November 2016

SII 11 Supervision of GALP2020 activities with **Transportes Paulo Duarte** on Impacts of eco-driving and energy efficiency measures for heavy-duty freight fleet, February 2015 – July 2016

4.4. Technical committee participation

- Representation of Instituto Superior Técnico in CT203 – Technical Commission on Natural Gas and Biomethane for vehicular and biomethane use for injection into the natural gas network, 2017 to present.

4.5. Jury collaboration

- Blue Auto Trophy for the more environmental vehicle in the market in the 2010, 2011 and 2012 editions[1].

4.6. Articles/Interviews in the media

- 90 Segundos de Ciência: Episódio 1116 Patricia Baptista – Impacte ambiental de veículos híbridos plug-in depende do utilizador, Junho 2021
- Contribuição para Carta e carro próprio menos prioritários entre os mais jovens, Vida Económica, 2020.
- Tiago Domingos, Tiago Ribeiro, Marta Almeida, Patrícia Baptista, Filipe Moura e Tânia Sousa, A ascensão da mobilidade activa e eléctrica?, Público, 2019.
- Interview to SIC related to the award of L'Oréal Portugal Medals of Honor for Women in Science, 2018.
- "No ambiente e nos incentivos está o ganho", article on the Suplement "Carro Eléctrico" of Jornal Público on the 16th of September 2010.

[1] http://www.automotor.xl.pt/microsites/blueauto/index.shtm

5. Management

The management activities developed are presented in the following sections.

5.1. Scientific coordination of fellowships (SCF)

SCF 1 IST-ID, IN+, M.Sc. Research fellowship, Shemin Sagaria, Modeling work on vehicle propulsion systems, January 2021-April 2021.

SCF 2 IST-ID, IN+, M.Sc. Research fellowship, Madalena Lopes, Assessment of biogas production potential in Portugal, May 2017-October 2017.

SCF 3 IDMEC Research fellowship, Gonçalo Santos, Impact Quantification of Urban Mobility Platform funded by Brisa Inovação e Tecnologia, September 2016-March 2017.

SCF 4 IDMEC Research fellowship, Catarina Rolim, Urban Mobility Platform Project funded by Brisa Inovação e Tecnologia, January 2016-April 2016.

SCF 5 IDMEC Post-Doctoral Research fellowship, Gonçalo Nuno Duarte, SusCity Project funded by FCT, January 2015-July 2016.

SCF 6 IDMEC Research fellowship, Tiago Isidro da Costa, Urban Mobility Platform Project funded by Brisa Inovação e Tecnologia, February 2015-December 2015.

5.2. Participation in academic degrees' examination boards (AEB)

AEB 1 João Nunes, Evaluation of the energy and environmental performance of alternative vehicle technologies through representative speed profiles, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**supervisor**).

AEB 2 Luís Martinho, Assessing potential demand for H2 in the industry sector, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**supervisor**).

AEB 3 Pedro Rosa, Self-consumption optimization: a comparison between different energy communities' configurations, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**supervisor**).

AEB 4 Carolina Belga, Multimodal emission factors for different distances from urban travel, M.Sc. in Energy Engineering and Management, Instituto Superior Técnico, 2021 (**supervisor**).

AEB 5 Ewa Pazdur, Transition Towards Carbon Free Electricity - Developing CO2 Emission Assessment Software For Corporate Use, M.Sc. in Energy Engineering and Management, Instituto Superior Técnico, 2021 (**discussant**).

AEB 6 Gonçalo Ramos Marques Dos Santos Costa, Assessing the role of green hydrogen for the system services' market in the Portuguese electricity system, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**discussant**).

AEB 7 Ricardo António Perdigão de Oliveira, Implementing blockchain technology for P2P energy trading and evaluation on users' adoption of energy communities, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**discussant**).

AEB 8 Tatiana Bruce da Silva, "Assessing pathways for climate change mitigation of the road passenger transportation sector in Rio de Janeiro, Brazil, using a hybrid energy

systems-general equilibrium economic model approach", Thesis Committee for Ph.D. in Sustainable Energy Systems, Instituto Superior Técnico, 2021 (**supervisor**).

AEB 9 Miguel Campino, "Development of indirect methods to estimate PHEV energy management", M.Sc. in Mechanical Engineering, Instituto Superior de Engenharia de Lisboa, 2021 (**discussant**).

AEB 10 Inês Fernandes, "Avaliação de medidas de eficiência energética numa frota de transportes coletivos urbanos", M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**supervisor**).

AEB 11 Maria Teresa Ramalho, "Impacte energético e económico de medidas de eficiência energética numa frota de veículos pesados de mercadorias", M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**supervisor**).

AEB 12 Miguel Quintas, "Optimal Location of Public Charging Stations for Electric Vehicles: a Model Based on Vehicle Travel Patterns", M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**discussant**).

AEB 13 José Maia, "Portugal's Energy System in 2050: the Role of Transportation", M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2021 (**discussant**).

AEB 14 Javier Pollos, "Analysing the competitiveness of offshore hydrogen-wind production models", M.Sc. in Energy Engineering and Management, Instituto Superior Técnico, 2021 (**discussant**).

AEB 15 Andrea Bertolini, "Power Output Optimisation for Electric Vehicles Smart Charging Hubs", M.Sc. in Energy Engineering and Management, Instituto Superior Técnico, 2021 (**discussant**).

AEB 16 Fabiola Pereira, "Sustainable pathways for the integration of renewable energy systems for the energy transition in islands – a data driven approach", Thesis Committee for Ph.D. in Sustainable Energy Systems, Instituto Superior Técnico, 2020 (**discussant**).

AEB 17 Robin Barkhausen, "End-of-Life Scenario Analysis for Lithium-Ion Batteries from Passenger Car Electric Vehicles in the EU", M.Sc. in Energy Engineering and Management, Instituto Superior Técnico, 2020 (**discussant**).

AEB 18 Alessandro Giordano, Environmental and Economic Prospects of Low-Carbon Vehicles in Support of European Commission 2030 City Logistics Fleet Goals, PhD in Engineering and Public Policy, Carnegie Melon University and Instituto Superior Técnico, 2020 (**co-supervisor**), 2020.

AEB 19 Bárbara Rodrigues, Evolution of the Exergetic Efficiency in the Transport Service, M.Sc. in Environmental Engineering, Instituto Superior Técnico, 2019 (**discussant**).

AEB 20 Catarina Ventura, Techno-economic analysis of charging posts to be installed in a hub for electric vehicles, M.Sc. in Energy Management Engineering, Instituto Superior Técnico, 2019 (**discussant**).

AEB 21 Behnam Bahmankhah, Impact of motor vehicles-bicycles interaction on route selection, traffic performance, emissions and safety, Ph.D. in Mechanical Engineering, Universidade de Aveiro, 2019 (**discussant**).

AEB 22 Joana Vicente, Consumer Adoption of Next Generation (CASE) Vehicles, M.Sc. in Environmental Engineering, Instituto Superior Técnico, 2019 (**co-supervisor**).

AEB 23 Pedro Santana, Thermal Performance Evaluation of Electric Vehicles, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2019 (**co-supervisor**).

AEB 24 Daniel Runa, Valorização energética do biogás produzido em ETARs do Grupo Águas de Portugal, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2019 (**co-supervisor**).

AEB 25 Francisco Capucha, Evaluation of Strategic Metals Envisaging the Sustainable Management, M.Sc. in Materials Engineering, Instituto Superior Técnico, 2019 (**discussant**).

AEB 26 João Duarte, Recycling of Rare Earth Elements Contained on Fluorescent Lamps by Hydrometallurgical Process, M.Sc. in Materials Engineering, Instituto Superior Técnico, 2018 (**discussant**).

AEB 27 Mariana Pereira, Analysis of mobility scenarios in 2030 using life cycle assessment of diesel vs. electric vehicles, M.Sc. in Environmental Engineering, Instituto Superior Técnico, 2018 (**discussant**).

AEB 28 Rudolph Santarromana, The Effectiveness of Decarbonizing the Passenger Transport Sector Through Monetary Incentives, M.Sc. in Energy Management Engineering, Instituto Superior Técnico, 2018 (**discussant**).

AEB 29 Mário Pelicano, Promoção de eficiência energética numa unidade industrial do setor automóvel, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2018 (**co-supervisor**).

AEB 30 Grzegorz Zamojski, Domestic crude oil extraction, as a pathway to sustainable low carbon economy, M.Sc. in Energy Management, Instituto Superior Técnico, 2018 (**co-supervisor**).

AEB 31 Madalena Lopes Anaerobic co-digestion of horse manure and pig slurry for biogas production, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2017 (**co-supervisor**).

AEB 32 Nelson dos Santos Alves, Chemiluminescence analysis of vitiated conditions for Methane and Propane flames, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2016 (**discussant**).

AEB 33 Rafael Reis, Impacts of eco-driving and energy efficiency measures for heavy-duty freight fleet, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2016 (**co-supervisor**).

AEB 34 Filipe Paulino, Life cycle analysis of the EU transportation sector, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2016 (**supervisor**).

AEB 35 Catarina Rolim, Impacts of adopting on board ICT and training on driving behavior, safety, energy and environment: application to light duty vehicles and buses, Ph.D. in Sustainable Energy Systems, Instituto Superior Técnico, 2016 (**co-supervisor**).

AEB 36 Ricardo Coimbra, Evaluation of urban logistics measures in downtown Lisbon, Portugal, M.Sc. in Civil Engineering, Faculdade de Engenharia da Universidade do Porto, 2015 (**discussant**).

AEB 37 Eduardo Mendonça, ICT in the transportation sector: potential market, impact quantification, implementation scenarios in the Lisbon region, M.Sc. in Environmental Engineering, Instituto Superior Técnico, 2014 (**supervisor**).

AEB 38 Magno Mnedes, Experimental evaluation of conventional and electric bicycles and motorcycles in urban context, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2013 (**supervisor**).

AEB 39 José Tavares, Application potential and energy and environmental impacts of EV and PHEV in São Miguel, M.Sc. in Mechanical Engineering, Instituto Superior Técnico, 2013 (**supervisor**).

5.3. Organization of national or international events (E)

E 1 Part of Scientific and Organizing Committee of 19th Meeting of the Transports Study Group, Oeiras, 6-7th February 2023.

E 2 Part of Scientific and Organizing Committee of 18th Meeting of the Transports Study Group, Porto, 4th March 2022.

E 3 Part of organization team of Summer School on "Urban Analytics", 16-20th July 2018, IST.

E 4 Organization of "Workshop on electric mobility ", 28-29th July 2016, IST.

E 5 Scientific coordination of BEST Lisbon Summer Course 2015, Creative Engineering and Design Thinking Boot Camp: becoming a modern tourist in old Lisbon, July-August 2015, Lisbon, Portugal[2].

E 6 Organization of "Workshop on electric mobility ", 27-28th July 2015, IST.

E 7 Organization of "Sustainable urban mobility solution: the success cases of New York and Lisbon", 15th November 2013.

E 8 Co-organization of Conference on the subject Last Mile Freight Delivery; Use of Cleaner Mobility Vehicles, together with University Transportation Research Center - REGION II and New York State Energy Research and Development Authority (NYSERDA), 4th October 2013, NY, USA[3].

E 9 Collaboration in the organization of the 16th Meeting of the European Working Group on Transportation, Porto, 4-6 September 2013.

E 10 Organization of Workshop on Electric Mobility, Instituto Superior Técnico, 7th December 2012.

E 11 Organization of seminar on ""The Gap Between Realistic Expectations and our Transportation GHG Emissions Targets" by Professor John Heywood, CIUL, Lisboa, 30th September 2011.

Lisbon, 4th March 2023

Patrícia Baptista

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Patrícia de Carvalho Baptista

[2] http://in3.dem.ist.utl.pt/best-lisbon-summer-course-2015/overview/

[3] http://www.utrc2.org/events/lastmilefreightdelivery.com