Lucia Tsantilis

Date of birth: 29 July 1982
Home address: Via San Giovanni Bosco 21, Sangano (TO), Italy
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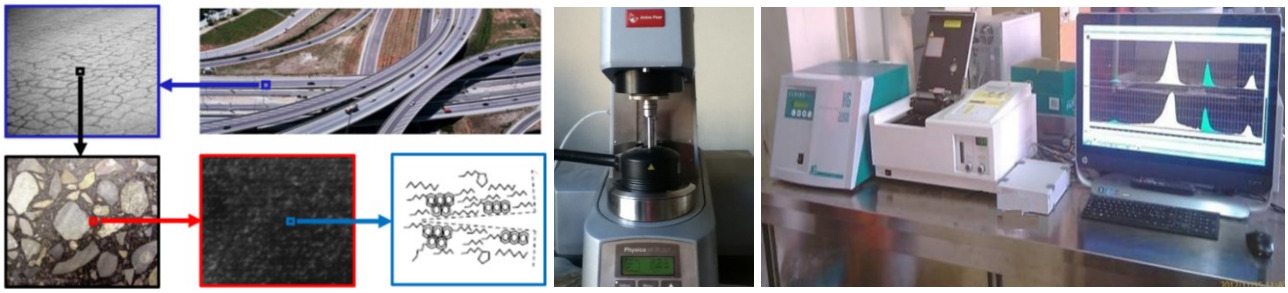
Assistant Professor
Department of Environment, Land and Infrastructure Engineering
POLITECNICO DI TORINO
24, Corso Duca degli Abruzzi, 10129 – Torino, Italy.

ACADEMIC AND PROFESSIONAL QUALIFICATIONS

Since 2016:	Assistant Professor at Politecnico di Torino;
2012-2016:	Post-Doctoral Research Fellow at Politecnico di Torino as winner of a public selection for young researchers on the project "Innovative nano-structured and polymer-modified bituminous materials", funded by the Italian Ministry of education, University and Research (MIUR);
2012:	PhD in Structure and Infrastructure Engineering, Università Politecnica delle Marche;
2011:	Licensed professional Civil Engineer;
2008:	Master of Science in Civil Engineering from Politecnico di Torino, 110/110 cum laude and thesis publication recommended.

RESEARCH INTEREST AND EXPERTISE

- Environmental sustainability of pavements
- Rheology of construction materials
- Innovative nano-structured and modified construction materials
- Laboratory characterization of construction materials
- Performance modelling with constitutive techniques
- Pavement analysis and design
- Road geometric design



AFFILIATIONS AND PROFESSIONAL SOCIETY MEMBERSHIPS

Member of the RILEM association (International Union of Laboratories and Experts in Construction Materials, Systems and Structures), active in the following Technical Committees (TCs):

- Nanotechnology-Based Bituminous Materials - TC NBM (2012);

- Chemo-Mechanical Characterization of Bituminous Materials -TC CMB (since 2013);
- Phase and Interphase behaviour of Bituminous Materials - TC PIM (since 2015);
- Crack-Healing of Asphalt Pavement Materials – TC CHA (since 2015).

Member of the SIIV society - Italian Society of Transportation Infrastructures (since 2009).

INTERNATIONAL ACADEMIC COOPERATIONS

Waterloo University, 2018 – Prof. H. Baaj (Morphological and rheological characterization of nano-modified bituminous binders);

Nottingham Engineering Transportation Centre, University of Nottingham, 2017 - Dr. D. Lo Presti, Dr. A. Jiménez del Barco Carrión (Biobinders for road pavement construction);

Arizona State University, 2017 – prof. Shane B. Underwood (Viscoelasticity and the Viscoelastic Continuum Damage Model);

Nottingham Engineering Transportation Centre, University of Nottingham, 2016 - Prof. G. Airey (Effect of sonication on nano-structured bituminous binders);

Delft University of Technology, 2009 – prof. Tom Scarpas (Chemo-mechanics of Healing in Bituminous Materials).

REVIEWING ACTIVITIES

Reviewer for the journal "Materials and Design" (since 2016);

Reviewer for the International RILEM Symposium on Chemo-Mechanical Characterization of Bituminous Materials, Braunschweig, Germany, 2018;

Reviewer for the AIIT International Congress on Transport Infrastructure and Systems, Rome, Italy, 2017;

Reviewer for the International RILEM Symposium on Multi-Scale Modeling and Characterization of Infrastructure Materials, Stockholm, Sweden, 2013;

Reviewer for the 6th International Conference on Maintenance and Rehabilitation of Pavements, MAIREPAV6, Turin, Italy, 2009;

Reviewer for the journal "Applied Rheology" (since 2014);

Reviewer for the "Open Journal of Civil Engineering" (since 2018);

Reviewer for the "Journal of Testing and Evaluation" (since 2018);

Reviewer for the "Journal of Testing and Evaluation" (since 2018);

Reviewer for the Journal "Energy Sources, Part A: Recovery, Utilization, and Environmental Effects" (since 2018);

Reviewer for the journal "Applied Sciences" (since 2018);

Reviewer for the journal "Revista de la Construcción - Journal of Construction" (since 2018);

Reviewer for the "Journal of Transportation Engineering: Part B, Pavements" (since 2018);

Reviewer for the journal "Infrastructures" (since 2018);

Reviewer for the journal "Sustainability" (since 2018).

EDITORIAL BOARD MEMBERSHIP

Member of the Editorial Board of the "International Journal of Materials Science and Applications" (since 2017);

Member of the Editorial Board of the "Journal of Civil and Structural Engineering Research" (since 2018);

Member of the Editorial Board of the "American Journal of Applied Sciences" (since 2018);

Member of the Editorial Board of the "International Journal of Science and Research (IJSR)" (since 2018);

Member of the Editorial Board of the journal "Sustainability" (since 2019);

Member of the Editorial Panel of the journal "Proceeding of the Institution of Civil Engineers: Construction Materials" (since 2019).

PUBLICATIONS

Tsantilis L, Chiappinelli G, Baglieri O, Riviera, Riviera PP, Miglietta F, Santagata E, "Performance Characteristics of Nano-Modified Asphalt Mixtures", LECTURE NOTES IN CIVIL ENGINEERING, 2020, pp. 587-595. ISBN: 978-3-030-48678-5, 978-3-030-48678-2.

Tsantilis L, Dalmazzo D, Baglieri O, Santagata E, "Effect of SBS molecular structure on the rheological properties of ternary nanomodified bituminous binders" CONSTRUCTION AND BUILDING MATERIALS, 2019, pp. 183-192, ISSN: 0950-0618.

Santagata E, Baglieri O, Miglietta F, Tsantilis L, Riviera PP, "Impact of nano-sized additives on the fatigue damage behaviour of asphalt mixtures", FATIGUE & FRACTURE OF ENGINEERING MATERIALS & STRUCTURES, 2019, pp. 2738-2746, ISSN: 8756-758X.

Baglieri O, Tsantilis L, Santagata E, "Evaluation of healing potential of bituminous binders using a viscoelastic continuum damage approach". Construction and Building Materials, 184, 2018, pp. 344-350.

Miglietta F, Underwood SB, Tsantilis L, Baglieri O, Kaloush KE, Santagata E, "Fatigue properties of nano-reinforced bituminous mixtures: a viscoelastic continuum damage approach". INTERNATIONAL JOURNAL OF PAVEMENT RESEARCH AND TECHNOLOGY, 2018, ISSN: 1996-6814.

Tsantilis L, Baglieri O, Santagata E, "Low-temperature properties of bituminous nanocomposites for road applications". Construction and Building Materials, 171:C, 2018, pp. 397-403.

Santagata E, Baglieri O, Dalmazzo D, Tsantilis L, "Investigating Cohesive Healing of Asphalt Binders by Means of a Dissipated Energy Approach". International Journal of Pavement Research and Technology, 10:5, 2017, pp. 403-409.

Santagata E, Tsantilis L, Dalmazzo D, "Fatigue Characterization of Bituminous Binders Containing Crumb Rubber from End-of-Life Tires". In: Sixth International Conference on Advances in Civil, Structural and Mechanical Engineering - ACSM 2017, Bangkok, Thailand, 25-26 February, 2017, pp. 51-56.

Santagata E, Baglieri O, Tsantilis L, Chiappinelli G, Riviera PP, "Re-use in asphalt pavements of fillers from natural stone sawmilling sludge". In: AIIT International Congress on Transport Infrastructure and Systems, Rome, 10-12 April 2017, pp. 371-378.

Santagata E, Baglieri O, Tsantilis L, Chiappinelli G, Dalmazzo D, "Bituminous based nanocomposites with improved high-temperature properties" Composites Part B 99, pp. 9-16, 2016.

Santagata E, Baglieri O, Tsantilis L, Dalmazzo D, Chiappinelli G, "Fatigue and healing properties of bituminous mastics reinforced with nano-sized additives". Mechanics of Time-Dependent Materials 20(3), Special Issue on Time-Dependent Behaviour of Bituminous Materials, 2016, pp 367-387. DOI 10.1007/s11043-016-9301-4

Santagata E, Baglieri O, Tsantilis L, Chiappinelli G, "Storage stability of bituminous binders reinforced with nano-additives". 8th RILEM International Symposium on Testing and Characterization of Sustainable and Innovative Bituminous Materials, 2016, pp. 75-87. DOI: 10.1007/978-94-017-7342-3_7

Santagata E, Baglieri O, Dalmazzo D, Tsantilis L, "Experimental Investigation on the Combined Effects of Physical Hardening and Chemical Ageing on Low-Temperatures Properties of Bituminous Binders". 8th RILEM International Symposium on Testing and Characterization of

Sustainable and Innovative Bituminous Materials, 2016, pp. 631-641. DOI: 10.1007/978-94-017-7342-3_51

Santagata E, Baglieri O, Tsantilis L, Chiappinelli G, "Fatigue and healing properties of nano-reinforced bituminous binders". International Journal of Fatigue, n. 80, 2015, pp. 30-39. DOI: 10.1016/j.ijfatigue.2015.05.008

Santagata E, Baglieri O, Tsantilis L, Chiappinelli G, I. Brignone Aimonetto "Effect of sonication on high temperature properties of bituminous binders reinforced with nano-additives". Construction and Building Materials, n. 75, 2015, pp. 395-403. DOI: 10.1016/j.conbuildmat.2014.11.021

Santagata E, Baglieri O, Tsantilis L, Chiappinelli G, "Fatigue properties of bituminous binders reinforced with carbon nanotubes". International Journal of Pavement Engineering, n. 16 (1), 2015, pp. 80-90. DOI: 10.1080/10298436.2014.923099

Santagata E, Baglieri O, Tsantilis L, Vercelli A, "Development of test protocols for the analysis of magneto-rheological properties of field-responsive bituminous binders". American Journal of Applied Sciences, n. 11 (3), 2014, pp. 505-519. DOI: 10.3844/ajassp.2014.505.519

Santagata E, Baglieri O, Tsantilis L, Dalmazzo D, "Evaluation of self healing properties of bituminous binders taking into account steric hardening effects". Construction and Building Materials, n. 41, 2013, pp. 60-67. DOI: 10.1016/j.conbuildmat.2012.11.118

Santagata E, Baglieri O, Tsantilis L, Chiappinelli G, "Effects of Nano-sized Additives on the High-Temperature Properties of Bituminous Binders: A Comparative Study". International RILEM Symposium on Multi-Scale Modeling and Characterization of Infrastructure Materials, Stockholm, June 10-12 2013. pp. 297-309.

Santagata E, Baglieri O, Dalmazzo D, Tsantilis L, "Evaluation of the anti-rutting potential of polymer-modified binders by means of creep-recovery shear tests". Materials and Structures, n. 46 n. 10, 2013, pp. 1673-1682. DOI: 10.1617/s11527-012-0006-0

Santagata E, Baglieri O, Tsantilis L, Dalmazzo D, "Rheological Characterization of Bituminous Binders Modified with Carbon Nanotubes". Procedia: Social & Behavioral Sciences, n. 53, 2012, pp. 546-555. DOI:10.1016/j.sbspro.2012.09.905

Santagata E, Baglieri O, Dalmazzo D, Tsantilis L, "Damage and healing test protocols for the evaluation of bituminous binders". 5th Eurasphalt & Eurobitume Congress, Istanbul (TUR), 13-15th June 2012.

Santagata E, Baglieri O, Dalmazzo D, Tsantilis L, "Rheological and Chemical Investigation on the Damage and Healing Properties of Bituminous Binders". Journal of the Association of Asphalt Paving Technologists, n.78, 2009, pp. 567-596. ISSN: 02702932

Santagata E, Dalmazzo D, Tsantilis L, Baglieri O, "The enhancement of performance-related properties of bituminous binders by means of fibers". Proceedings of the 6th International Conference on Maintenance and Rehabilitation of Pavements and Technological Control, n. I, 2009, pp. 124-133.

PARTICIPATION IN RESEARCH PROJECTS FUNDED BY PUBLIC ADMINISTRATIONS AND PRIVATE COMPANIES

Physicochemical analyses for the advanced characterization of RAP (2018);

Design of cement concrete pavements in Basci, San Paolo and Cappuccini tunnels, SS1 Nuova Aurelia –Savona port hub, Letimbro scarl (2017-2018);

Study on the thermal resistivity of concrete mixtures. SITAF s.p.a. (2017-2018);

Experimental study on the materials to be employed in the new Frejus emergency road tunnel. Tunnel Frejus s.c.a.r.l (2017-2018);

Laboratory investigation on cement stabilized mixtures for the implementation of a new rational design method for semi-rigid pavements. SPEA Engineering s.p.a. (2017-2018);

Experimental investigation on bituminous mixtures. SITAF s.p.a. (2017);

Development of technologies and systems for the optimization of road construction, Sitalfa s.p.a. (2017-2018);

Technical evaluation on the use of paint sludge to produce bituminous mixtures (Patent BIT 18446), FCA Group (2017);

Extraordinary maintenance in special track pavements, CSI S.p.A. Bollate (2017);

Field and laboratory investigation on performance characteristics of wearing courses asphalt mixtures, Bitux s.p.a. (2016 – 2017);

Maintenance and renewal of pavements in hybrid tram sites, GTT S.p.A. (2016);

Laboratory and in situ tests of the runway strips in the "Capodichino" airport, GESAC S.p.a., (2016);

Preliminary evaluation of bituminous mixtures employed in extraordinary maintenance operations, Città Metropolitana di Torino (2010-2015);

Evaluation of the possible re-use in asphalt pavements of fillers from natural stone sawmilling sludge for road applications, Camera di Commercio del Verbano Cusio Ossola (2013);

FIRB - Damage and healing of innovative nano-structured and polymer-modified bituminous materials, funded by the Italian Ministry for Education, University, and Research (2012 - 2016);

Science and technology of bituminous binders and mixtures containing waste tyre rubber, Ecopneus S.C.p.A. (2012 – 2016);

Rheology of homogeneous and non-homogeneous bituminous binders, DIATI (2012);

Experimental investigation on pavements of the A32 Torino-Bardonecchia motorway, SITAF S.p.A. (2011);

TYREC4LIFE - Development and implementation of innovative and sustainable technologies for the use of scrap tyre rubber in road pavements – funded by the European Commission in the project LIFE+, LIFE10ENV/IT/000390 (2011 – 2015);

Evaluation of the possible use of paint sludge in paving materials for road applications – FIAT (2010 – 2012);

Evaluation of the possible use of crumb rubber from end-of-lyfe tyres in road pavements – Provincia di Torino (2009 – 2010);

Assessment of the bearing capacity of Sandro Pertini airport strips – Sagat s.p.a, contract n. 1337/2008 (2008 - 2009);

Rheology of bituminous binders, DITIC (2008);

AWIS – Airport Weather Information Sytem: Study and realisation of a system for the prediction, monitoring and management of meteorological winter emergencies in airports -Regione Piemonte (2008 - 2011).

COMMITTEES

Member of the Scientific Committee for the International Symposium on Frontiers of Road and Airport Engineering (iFRAE), that will be held in Delft in July 12-14, 2021.

Member of the Scientific Committee for the 9th European Asphalt Technology Association (EATA) Conference, that will be held in Wien in June 7-9, 2021.

Member of the Scientific Committee of the International RILEM Symposium on Bituminous Materials, that will be held in Lyon in December 14-16, 2020.

Member of the Scientific Committee of the International RILEM Symposium on Chemo-Mechanical Characterization of Bituminous Materials, Braunschweig, Germany, 2018.

Member of the Organizing Committee of the XIV SIIV Summer School on "Advanced in Design and Construction of Road Infrastructures", 2016, Torino, Italy.

Member of the Organizing Committee of the workshop "Valutazione dei possibili utilizzi nelle pavimentazioni stradali del polverino proveniente da pneumatici fuori uso", 2014, Torino, Italy.

Member of the Organizing Committee of the 6th International Conference on Maintenance and Rehabilitation of Pavements (MAIREPAV6), 2009, Torino, Italy.

Member of the International Scientific Committee of the "International RILEM Symposium on Chemo-Mechanical Characterization of Bituminous Materials", 2018.

SPEAKER AT CONFERENCES

Speaker at the 9th International Conference on Maintenance and Rehabilitation of Pavements (MAIREPAV9), online conference, 1 - 3 July 2020.

Invited Speaker at DIATI NoonTalk "Towards self-healing pavement infrastructures", 9 January 2019, Turin, Italy.

Invited Speaker at Workshop "EngiMat – Engineering the rheological properties of materials", 18 June 2018, Turin, Italy.

Speaker at the AIIT International Congress on Transport Infrastructure and Systems, 10-12 April 2017, Rome, Italy.

Invited Speaker at the XIV SIIV Summer School on "Advanced in Design and Construction of Road Infrastructures", 2016, Turin, Italy.

Speaker at the 8th RILEM International Symposium on Testing and Characterization of Sustainable and Innovative Bituminous Materials, 7-9 October 2015, Ancona, Italy.

Speaker at the International RILEM Symposium on Multi-Scale Modeling and Characterization of Infrastructure Materials, 10-12 June 2013 Stockholm, Sweden.

Invited Speaker at the Workshop "Evaluation of the potential use of crumb rubber in road pavement applications", 6 February 2014, Turin, Italy.

Speaker in the poster session of the 5th Eurasphalt & Eurobitume Congress, 13-15 June 2012 Istanbul, Turkey.

Speaker at the MAIREPAV6, 6th International Conference on Maintenance and Rehabilitation of Pavements, 8-10 July 2009, Turin, Italy.

Invited Speaker at the Consortium on Chemo-mechanics of Healing & Ageing Processes in Bituminous Materials, 16 January 2009, Turner-Fairbank Highway Research Center, McLean, Washington D.C.

ACADEMIC TEACHING

Lectures in the course "Sustainable Tansport Systems and Infrastructures", Master on Climate Change course (since 2020);

Head lecturer for the course "Experimental methods and laboratory testing for civil engineering applications" at Politecnico di Torino, Meng in Civil Engineering (since 2020);

Head lecturer for the PhD course "Rheology: Principles and Applications" at Politecnico di Torino (since 2019).

Lecturer for the course "Infrastrutture Viarie" at Politecnico di Torino, Beng in Civil Engineering (since 2016).

Lecturer for the course "Pavement and Track Engineering" at Politecnico di Torino, Meng in Civil Engineering (since 2009);

Lecturer for the course "Construction of Roads, Railways and Airports" at Politecnico di Torino, Meng in Civil Engineering (2009).

CO-TUTORSHIP OF BACHELOR THESES

1. "Experimental analysis of healing phenomenon in long-aged bituminous binders". Carpi Daniele, 2010.
2. "Experimental investigation on rheological characterization procedures for bituminous binders". Vercelli Arianna, 2010.
3. "Experimental investigation on the fatigue resistance and anti-rutting performance of bituminous binders modified with paint sludge from automotive industry". Calcagno Alessio, 2011.
4. "Study of the effect of carbon nanotubes on the fatigue behaviour of bituminous binders". Rossi Luca, 2012.
5. "Effect of carbon nanotubes on the resistance to permanent deformation of bituminous binders", Digrandi Salvatore, 2012.
6. "Experimental investigation on fatigue and healing phenomena of bituminous binders treated with anti-icing". Morosino Martina, 2012.
7. "Effect of carbon nanotubes on viscosity characteristics of bituminous binders". Zago Giovanni, 2012.
8. "Study of fatigue behaviour of bituminous binders treated with anti-icing". Rabino Irene, 2012.
9. "Linear viscoelastic analysis of neat and modified bituminous binders". Verrengia Carlotta, 2012.
10. "Low temperature behaviour of nano-modified bituminous binders". Rabezzana Riccardo, 2012.
11. "Study of viscoelasticity and fatigue behaviour of bituminous binders modified with nanoclays". Ignazzi Andrea Angelo, 2012.
12. "Fractionation techniques for the characterization of bituminous binders". Miceli Rosario, 2012.
13. "Rheological characteristics of base and modified binders employed in Zambra and Caserta construction sites". Valle Alberto, 2013.
14. "Storage stability of bituminous binders containing nanoclays". Anania Veronica, 2014.
15. "Storage stability of bituminous binders containing carbon nanotubes". Bolla Andrea, 2014.
16. "Study of fatigue behaviour of nano-reinforced bituminous binders". Giberti Luca Stefano, 2014.
17. "Nano-reinforced bituminous materials for road pavement applications: the state of the art". Macchia Andrea, 2016.

CO-TUTORSHIP and TUTORSHIP OF MASTERS THESES

1. "Experimental study on the fatigue behaviour of crumb rubber modified asphalts". Migliorini Giacomo, 2009.
2. "Viscoelastic characterization of bitumens modified with crumb rubber". Cigna Federica, 2010.
3. "Experimental analysis of healing phenomenon in bituminous binders in virgin and short-term ageing conditions". Saracino Marzia, 2010.

4. "Experimental investigation on the rheological behaviour of bituminous binders subjected to anti-icing treatments". Pardo Mendez Luis Camilo, 2011.
5. "Analysis of the effect of carbon nanotubes (CNT) on the performance characteristics of bituminous binders". Castro Escudero Jorge Armando, 2012.
6. "Rheological characterization of bituminous binders containing carbon nanotubes". Vaudagna Stefano, 2012.
7. "Rheological characterization of bituminous binders containing nanoclays". Demaria Gabriella, 2012.
8. "Maintenance and diagnostics of railway superstructure". Suppo Marco, 2013.
9. "Study of the fatigue behaviour of bituminous binders considering self-heating, thixotropy, and healing effects". Juarez Lucca Santiago, 2013.
10. "Effect of sonication on the fatigue behaviour of bituminous binders modified with carbon nanotubes". Durante Pasquale, 2013.
11. "Study of rheological behaviour of bituminous binders modified with nanoclays: effect of the mixing protocol". Boano Walter, 2013.
12. "Magneto-rheological potentiality in the study of traditional and innovative bituminous binders". Vercelli Arianna, 2013.
13. "Study of the rheological behaviour of nano-reinforced bituminous binders". Brignone Aimonetto Ilaria, 2013.
14. "Study of healing capability of nano-reinforced bituminous binders". Genesio Federica, 2014.
15. "Experimental investigation on the use of sawmilling waste filler in bituminous mixtures". Cucinotta Giovanni, 2014.
16. "Fatigue and healing properties of innovative bituminous mastics". Dani Eglantina, 2015.
17. "Experimental investigation on bituminous mixtures modified with nanomaterials: the effect of carbon nanotubes". Paglia Daniele, 2015.
18. "Experimental investigation on bituminous mixtures modified with nanomaterials: the effect of nanoclays". Cremonesi Luca, 2015.
19. "Test protocols and analysis models for the assessment of the rheological behaviour of modified and nano-reinforced bituminous binders". Portilla Moncallo Sayra Ivette, 2016.
20. "Test protocols and analysis models for the assessment of the mechanical behaviour of bituminous mixtures containing nanoclays". Miglietta Fabrizio, 2016.
21. "Test protocols and analysis models for the assessment of the mechanical behaviour of bituminous mixtures containing carbon nanotubes". Brignolo Jacopo, 2016.
22. "Experimental investigation and modelling of low-temperature cracking of bituminous materials". Tozzi Chiara, 2017.
23. "Investigating linear and non-linear damage behaviour of bituminous binders by means of a continuum damage approach". Reginatto Juan Pablo, 2018.
24. "Evaluation of the Ageing Effects on the Performance of non-bituminous Binders for Paving Applications". La Rocca Federica, 2018.
25. "Experimental investigation on the use of zeolite in bituminous binders". Lorenzo Luna, 2018.
26. "Definition of an experimental protocol for the evaluation of healing potential of bituminous binders". Anania Veronica, 2018.
27. "Il danneggiamento delle pavimentazioni stradali della rete tranviaria torinese". Sirica Morena, 2018.

28. "Effects of nano-sized additives on bituminous binders: rheological and morphological characterization". Santoro Lidia, 2018.
29. "Studio comparativo di protocolli sperimentali per la valutazione della capacità di autoriparazione di leganti bituminosi", Briguglio Giuliana, 2019.
30. "Autoriparazione di leganti bituminosi: influenza della temperatura e del tempo di riposo". Aramini Valentina, 2019.
31. "Indagine sperimentale e modellazione non lineare sul danneggiamento a fatica nei leganti bituminosi". La Malfa Salvatore, 2019.
32. "Utilizzo del reometro rotazionale per la valutazione della temperatura minima del "Performance Grade" di bitumi ad uso stradali". Angiolini Marco, 2019.
33. "Life Cycle Assessment of Pavements through PaLATE" Tisberger Ibanez Tomas Erich, 2020.
34. "Comparazione di protocolli sperimentali per la valutazione del potenziale di autoriparazione dei bitumi modificati con SBS e valutazione dell'influenza del tempo e della temperatura di riposo", Previti Davide, 2020.

LANGUAGES

Italian mothertongue, excellent conversational and written English, excellent conversational Greek.

Torino, July 16th, 2020

Lucia Tsantilis