

## **CURRICULUM VITAE**

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### **Prof. MASSIMO LOSA**

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### **1. General info**

Born in Lauria (PZ) on 28/05/1964 and living in S. Giuliano Terme (PI), Via E. Salgari, 8.

### **2. Education**

1983-1990: Master's Degree (Laurea quinquennale) in Civil Engineering –Transportation at the University of Pisa in 1990, graduated summa cum laude (110/110 e lode)

1992-1993: MSc in Railway Engineering at the University of Rome “La Sapienza”; the master course was organized jointly by the Universities of Milano, Genova, Bologna, Firenze, Roma, Napoli, Bari, Palermo.

### **3. Previous work experience**

1990-1992: Chief-Executive (Quadro) in the construction of two lots of the A12 Motorway Livorno-Rosignano for Grandi Lavori Fincosit S.p.A.-Bevilotti S.p.A.;

1993-1994: Chief-Executive in Ferrovie dello Stato S.p.A. – Railway line Bologna-Piacenza.

1994-2001: Assistant Professor (S.S.D. ICAR/04 - Roads, Railways, Airports) at the University of Pisa (28/12/1994), confirmed in 1997.

2000: Qualification as Associate Professor (S.S.D. ICAR/04 - Roads, Railways and Airports) in the comparative evaluation at the University of Cagliari;

2001-present: Called to cover the position of Associate Professor at the University of Pisa (1/10/2001), confirmed in 2004;

2013: National Scientific Qualification as Full Professor in the SC 08/A3 – Transportation Systems and Infrastructures, Estimation and Evaluation.

#### 4. Awards

- 1990: “Luigi Giammaria” prize: Best Master’s degree thesis in Transportation Engineering in the A.A. 1989/1990.
- 2007: “Le Strade” prize: Best paper of Session A (Road and Airport Infrastructures) at the "4<sup>th</sup> International SIIV Congress", 12-14 September 2007, (A new step towards performance based specifications for asphalt pavements);

#### 5. Scientific publications

##### 5.1. International Journals

- J1) Bressi S., Santos J., Losa M. (2019). A comparative environmental impact analysis of asphalt mixtures containing crumb rubber and reclaimed asphalt pavement using life cycle assessment, *International Journal of Pavement Engineering*, pp. 1-15;
- J2) Cuciniello G., Leandri P., Filippi S., Lo Presti D., Polacco G., Losa M., (2019). Microstructure and rheological response of laboratory-aged SBS-modified bitumens. *Road Materials and Pavement Design*, pp. 1-25;
- J3) Puccini M., Leandri P., Tasca A.L., Pistonesi L., Losa M. (2019). Improving the Environmental Sustainability of Low Noise Pavements: Comparative Life Cycle Assessment of Reclaimed Asphalt and Crumb Rubber Based Warm Mix Technologies, *Coatings*, Vol. 9, n. 5, p 343;
- J4) Cuciniello G., Leandri P., Filippi S. Lo Presti D., Losa M., Airey G. (2018). Effect of ageing on the morphology and creep and recovery of polymer-modified bitumens. *Materials and Structures*, vol. 51, n. 5;
- J5) Riccardi C., Cannone Falchetto A., Losa M., Wistuba M P (2018). Development of simple relationship between asphalt binder and mastic based on rheological tests. *Road Materials and Pavement Design*, vol. 19, pp. 18-35;
- J6) Riccardi C., Carrion A., Lo Presti D., Losa M. (2017). Reclaimed asphalt binders and mortars fatigue behavior. *Road Materials and Pavement Design*, pp. 1-12;
- J7) Riccardi C., Cannone Falchetto A., Leandri P., Losa M., Wistuba M P (2017). A novel back-calculation approach for determining the rheological properties of RAP binder. *Road Materials and Pavement Design*, vol. 18, pp. 359-381;
- J8) Riccardi C., Carrion A., Lo Presti D., Cannone Falchetto A., Leandri P., Losa M., Wistuba M P. (2017). A new procedure to determine the rheological properties of RAP binder and corresponding bituminous blends. *Construction and building materials*, vol. 154, pp. 361-372;

- J9) Riccardi C., Cannone Falchetto A., Losa M., Leandri P. (2017) Estimation of the SHStS transformation parameter based on volumetric composition. *Construction and building materials*, vol. 157, pp. 244-252;
- J10) Riccardi C., Cannone Falchetto A., Wistuba M. P., Losa, M. (2017) Fatigue comparisons of mortars at different volume concentration of aggregate particles. *International journal of fatigue*, vol 104, pp. 416-421;
- J11) Riccardi, C., Cannone Falchetto, A., Leandri, P., Losa, M., Wistuba, M. (2016) . A novel back-calculation approach for determining the rheological properties of RAP binder. *Road Materials and Pavement Design*, pp. 1-23;
- J12) Riccardi, C., Cannone Falchetto, A., Losa, M., Wistuba, M. (2016). Rheological modeling of asphalt binder and asphalt mortar containing recycled asphalt material. *Materials and Structures/Materiaux et Constructions*, 49 (10), pp. 4167-4183;
- J13) Riccardi, C., Cannone Falchetto, A., Losa, M., Wistuba, M. (2016). Development of simple relationship between asphalt binder and mastic based on rheological tests. *Road Materials and Pavement Design* , pp. 1-18;
- J14) Riccardi, C., Cannone Falchetto, A., Losa, M., Wistuba, M. (2016). Back-calculation method for determining the maximum RAP content in Stone Matrix Asphalt mixtures with good fatigue performance based on asphalt mortar tests. *Construction and Building Materials*, 118, pp. 364-372;
- J15) Riccardi C., Cannone Falchetto A., Losa M., Wistuba M.P., (2015). Rheological Modeling of Asphalt Binder and Asphalt Mortar Containing Recycled Asphalt Material, *Materials and Structures* (In press)
- J16) Leandri P., Losa M., (2015). Peak-friction prediction model based on surface characteristics. *Transportation Research Record: Journal of the Transportation Research Board* (In press);
- J17) Leandri P, Riccardi C., Losa M., (2015). A new approach to estimating rheological properties of the RAP binder at intermediate temperatures. *Road materials and pavement design. An International Journal*, Vol. 16, pp. 280-299, DOI: 10.1080/14680629.2015.1029695
- J18) Leandri P, Losa M., Di Natale A., (2015) Field validation of recycled cold mixes viscoelastic properties. *Construction and Building Materials*, Vol. 75 pp. 275-282, DOI: 10.1016/j.conbuildmat.2014.11.028;
- J19) Losa M, Di Natale A., (2014). Strains in asphalt pavements under circular and rectangular footprints. *Baltic Journal of Road and Bridge Engineering*, vol. 9, n. 2, p. 101-107, DOI: 10.3846/bjrbe.2014.13;
- J20) Losa M., Frenzo F., Cofrancesco A., Bartolozzi R. (2013). A procedure for validating fixed-base driving simulators. *Transport*, vol. 28, n. 4, p. 420-430, DOI: 10.3846/16484142.2013.867281;

- J21) Losa M, Leandri P., Licitra G., (2013). Mixture Design Optimization of Low-Noise Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, vol. 2372, p. 25-33, DOI: 10.3141/2372-04;
- J22) Losa M., Di Natale A., (2012). Evaluation of Representative Loading Frequency for Linear Elastic Analysis of Asphalt Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, vol. 2305, p. 150-161, DOI: 10.3141/2305-16;
- J23) Losa M., Leandri P., (2012). A comprehensive model to predict acoustic absorption factor of porous mixes. *Materials and Structures*, vol. 45, p. 923-940, ISSN: 1359-5997, doi: 10.1617/s11527-011-9808-8;
- J24) Losa M., Leandri P., Cerchiai M., (2012). Improvement of pavement sustainability by the use of crumb rubber modified asphalt concrete for wearing courses. *International Journal of Pavement Research and Technology*, vol. 5, p. 395-404, ISSN: 1997-1400;
- J25) Leandri P., Cuciniello G., Losa M., (2012). Study of Sustainable High Performance Bituminous Mixtures . *Procedia: Social and Behavioral Science*, vol. 53, p. 495-503, ISSN: 1877-0428, doi: 10.1016/j.sbspro.2012.09.900;
- J26) Losa M., Leandri P., (2011). The reliability of tests and data processing procedures for pavement macrotexture evaluation. *International Journal of Pavement Engineering*, vol. 12, p. 59-73, ISSN: 1029-8436, doi: 10.1080/10298436.2010.501866;
- J27) Losa M., Leandri P., Bacci R., (2010). Empirical rolling noise prediction models based on pavement surface characteristics. *Road Materials and Pavement Design. An International Journal*, vol. 11, p. 487-506, ISSN: 1468-0629, doi: 10.3166/RMPD.11HS.487-506;
- J28) Losa M., Bacci R., Leandri P., (2008). A Statistical Model for Prediction of Critical Strains in Pavements from Deflection Measurements. *Road Materials and Pavement Design. An International Journal*, vol. 9, p. 373-396, ISSN: 1468-0629, doi: 10.3166/RMPD.9HS.373-396;
- J29) Losa M., Leandri P., Bacci R., (2008). Mechanical and Performance-Related Properties of Asphalt Mixes Containing Expanded Clay Aggregate. *Transportation Research Record: Journal of the Transportation Research Board*, p. 23-30, ISSN: 0361-1981, doi: 10.3141/2051-04;
- J30) Losa M., (2002). The influence of Asphalt Pavement Layer Properties on Vibration Transmission. <sup>[L]</sup><sub>[SEP]</sub> *International Journal of Pavements*, vol. 1, p. 67-76, ISSN: 1676-2797;
- J31) Losa M., (2000). Railway stations: design hypotheses and operation check. <sup>[L]</sup><sub>[SEP]</sub> *Ingegneria Ferroviaria*, p. 15-25, ISSN: 0020-0956 (selected for review in the journal DB Select n. 06/2000);
- J32) Losa M. (1998). Lits d'arrêts, interaction roue-sol et freinage. *Routes/Roads*, vol. 303, ISSN: 1011-1891;

## 5.2. International Conference Papers

- C1) Cuciniello G., Leandri P., Lo Presti D., Losa M., Airey G. (2019). Investigating the Effect of Artificial Ageing on the Creep and Recovery of SBS-Modified Bitumen, MATEC Web of Conferences, vol. 271;
- C2) Oreskovic M., Mlladenovic G., Losa M., Bressi S. (2018). Optimal waste cooking oil dosage in blends containing aged binder. *Advances in Materials and Pavement Prediction: Papers from the International Conference on Advances in Materials and Pavement Performance Prediction (AM3P 2018)*, April 16-18, 2018, Doha, Qatar;
- C3) Huang J., Losa M., Leandri P., (2018). Determining the effect of damping layers in flexible pavement on traffic induced vibrations. *Advances in Materials and Pavement Prediction: Papers from the International Conference on Advances in Materials and Pavement Performance Prediction (AM3P 2018)*, April 16-18, 2018, Doha, Qatar;
- C4) Colinas-Armijo N., Bressi S., Gabet T., Losa M. (2018). Effect of crumb in dry process on mix design of asphalt mixtures, Conferenza ISAP 2018;
- C5) Leandri P., Losa M., Rocchio P. (2018). New low noise pavement surfaces by the use of crumb rubber. *Atti di Convegno "Euronoise 2018"*, pp. 2679-2686;
- C6) Leandri P., Losa M., Rocchio P. (2017) Life NEREiDE: New Low Noise Pavement surfaces. *Atti del Convegno 24th International Congress on Sound and Vibration, ICSV 2017*;
- C7) Riccardi, C., Cannone Falchetto, A., Losa, M., Wistuba, M. (2016) . Modeling of the rheological properties of asphalt binder and asphalt mortar containing recycled asphalt material. *Transportation Research Procedia*, 14, pp. 3503-3511;
- C8) Riccardi, C., Cannone Falchetto, A., Losa, M., Wistuba, M. (2016). Estimation of the high temperature properties of reclaimed asphalt pavement binder without extraction. *8th International Conference on Maintenance and Rehabilitation of Pavements, MAIREPA V 2016*, pp. 613-622;
- C9) Leandri P., Rocchio P., Losa M., (2014). Identification of the more suitable warm mix additives for crumb rubber modified binders. *Sustainability, Eco-efficiency, and Conservation in Transportation Infrastructure Asset Management*, CRC Press, ISBN:9781315757124;
- C10) Losa M., Di Natale A., (2014). Accuracy in predicting viscoelastic response of instrumented asphalt pavements. *Sustainability, Eco-efficiency, and Conservation in Transportation Infrastructure Asset Management*, CRC Press, ISBN:9781315757124;
- C11) Losa M., Pratelli A., Riccardi C., (2014). The integration of buses with a high level of service in the medium cities urban context. *WIT Transactions on the Built Environment*, Vol.138 pp. 161-172;
- C12) Losa M., Leandri P., Bacci R., Di Natale A., Rocchio P., (2013). Appropriate and Reliable Use of

Pavement Instrumentation on In-Service Roads. *Airfield and Highway Pavement 2013. Sustainable and Efficient Pavements*, p. 1424-1433;

- C13) Bassani R., Losa M., Musolino A., Rizzo R., (2013). Stability analysis of an automated maglev people mover system. *5th World Tribology Congress, WTC 2013*. Vol. 4, p. 2894-2897;
- C14) Losa M., Leandri P., Rocchio P., (2012). Crumb Rubber Modified Asphalt Concrete for Low Noise Surfaces. *Proceeding of Asphalt Rubber 2012*. vol. 1, ISBN: 978-989-20-3255-9, Munich, Germany, October 23-26;
- C15) Losa M., Cofrancesco A., Baronti F., Roncella R. (2011). Analysis of Different Groups of Drivers and Their Related Driving Behaviour in Urban Areas . *Transportation Research Board of the National Academies. TRB 90th Annual Meeting Compendium of Papers DVD* . Washington U.S.A., January 23-27, p. 1-14;
- C16) Losa M., Leandri P., Bacci R., (2011). Mix design and performance evaluation of CRM-modified asphalt concrete mixtures. *Bituminous Mixtures and Pavements*. Thessaloniki, 1/06/2011, A. F. Nikolaidis, ISBN: 978-960-99922-0-6;
- C17) Losa M., Bacci R., Leandri P., Collop A., (2009). Experimental characterization of high performance WAM-Foam trial sections. *MAIREPAV 6*. vol. 1, p. 449-457, ISBN: 978-88-8202-029-3, TORINO, 8/07/2009;
- C18) Losa M., Axerio A., Bacci R., Leandri P. (2009). Design of pavements containing foamed bitumen recycled layers. *Bearing Capacity of Roads, Railways and Airfields*. Urbana Champaign, 29/06/2009, vol. 1, p. 387-396, CRC Press/Balkema, ISBN: 978-0-415-87199-0;
- C19) Licitra G., Losa M., Cerchiai M., Alfinito L., (2008). Road noise characterization by Harmonoise procedures reviewed for the Italian case. *Acoustics 08*. Paris, 4/7/2008, vol. CD ROM, p. 2981-2986, Société Francaise d'acoustique, ISBN: 978-2-9521105-4-9;
- C20) Losa M., Leandri P., Bacci R., (2008). Monitoring and Evaluating Performance Requirements of Flexible Road Pavements. *Transportation and Development Innovative Best Practices 2008 - Proceedings of the 1st International Symposium on Transportation and Development Innovative Best Practices 2008, TDIBP 2008*. Beijing, 24-26 April 2008, vol. 319, p. 511-516, University of Louisville:Louis F. Cohn, ISBN: 978-0-7844-0961-9, doi: 10.1061/40961(319)84;
- C21) Losa M., Leandri P., Bacci R., Cerchiai M., Alfinito L. (2008). Surface characteristics of asphalt pavements with synthetic lightweight aggregate. *SURF 2008*. vol. CD ROM;
- C22) Praticò F.G., Losa M., (2008). Effectiveness of slab stabilization in mitigating reflective cracking in HMA overlays: a case-history. *Pavement Cracking: Mechanisms, Modeling, Detection, Testing and Case Histories*. Chicago, Illinois, USA, 18/06/2008, vol. 1, p. 239-250, CRC Press/Balkema, ISBN: 978-041547575-4;

- C23) Losa M., Bacci R., Leandri P., (2007). A New Step Towards Performance Based Specifications for Asphalt Pavements. *4th SIIV International Congress*. Palermo, 12-14 September, ISBN: 978-88-8207-260-5;
- C24) Losa M., Marvogli M., Bacci R., Leandri P., (2007). Structural analysis of asphalt pavements on collector rural roads. *4th International Congress on Bituminous Mixtures and Pavements*. Thessaloniki, 19-20 April, vol. 1, p. 251-260, ISBN: 978-96-0918-493-9;
- C25) Losa M., Leandri P., Bacci R., (2007). Measurements of Pavement Macrotecture with Stationary and Mobile Profilometers. MAIREPAV5. Park City - Utah, 8-10 August, vol. 1, p. 313-319, ISBN: 978-0-87414-159-7;
- C26) Licitra G., Losa M., Alfinito L., Cerchiai M., (2007). Correlation Factors Between Statistical Pass-by and Close Proximity Noise Levels on Italian Roads. *Proc. of 19th International Congress on Acoustics*. Madrid (Spain), 02-07 September, ISBN: 84-87985-12-2;
- C27) Losa M., Barone S., (2005). Three Dimensional Analysis of Pavement Macrotecture. *4th International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control*. 18-19 agosto, p. 1-10;
- C28) Lancieri F., Losa M., Marradi A., (2005). Polishing resistance and mechanical properties of aggregates for asphalt concrete wearing courses. *3rd International SIIV Congress - People, Land, Environment and Transport Infrastructures Reliability and Development*. Bari - Italia, 22-23/09, Bari, ISBN: 978-88-9024-099-7;
- C29) Losa M., Terrosi Axerio A., (2005). Adapting Safety Performance Functions for Signalized Four Legged Intersections. *3rd International SIIV Congress - People, Land, Environment and Transport Infrastructures Reliability and Development*. 22-24 September 2005, Bari, ISBN: 978-88-9024-099-7;
- C30) Losa M., Axerio A., (2004). Improving consistency of RSAR for a collector rural road. *II International SIIV Congress*. Firenze, 29-30 ottobre;
- C31) Losa M., RISTORI C (2004). Defining accident scenarios for collector rural roads. *II International SIIV Congress*. Firenze, 29-30 ottobre;
- C32) Losa M., Bonomo G, Licitra G, Cerchiai M (2003). Performance degradation of porous asphalt pavements. *3rd International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control*, luglio, vol. 1, p. 475-484, ISBN: 972-8692-03-X;
- C33) Losa M. (2003). Performance tests on granular base and subbase courses. *3rd International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control*, luglio, vol. 1, p. 241-250, ISBN: 972-8692-03-X;
- C34) Losa M., Ristori C., (2002). Lateral accelerations induced by road alignment: effects on motion sickness and comfort. *37th UK Conference on Human Response to Vibration*. 18-20 September 2002;

- C35) Losa M., Licitra G., Cerchiai M., Iacoponi M., (2002). Measurement of Vibrational and Acoustical <sup>[L]</sup><sub>[SEP]</sub>Properties of Asphalt Pavement Layers. *Proceedings of Inter-Noise 2002*, August;
- C36) Losa M., Licitra G., Cerchiai M., (2001). Theoretical Estimates of the Acoustical Absorption Factor of <sup>[L]</sup><sub>[SEP]</sub>Open Graded Asphalts. *Proceedings of 17th International Congress on Acoustics*. 2-7 september;
- C37) Losa M., Licitra G., Cerchiai M., Berengier M., (2001). Physical Characteristics of Road Pavements <sup>[L]</sup><sub>[SEP]</sub>and Noise Emission. *Proceedings of Inter-Noise 2001*. August 27-28;
- C38) Losa M. (2000). Life-cycle cost analysis applied to pavement options of the Italian catalogue. *Proceedings of 1st European Pavement Management System Conference*. 24-27 september
- C39) Lancieri F., Losa M., Licitra G., Cerchiai M., Berengier M., (2000). Field and laboratory testing on different porous asphalt pavements. *Proceedings of Fourth International Symposium on Pavement Surface Characteristics of Roads and Airfields*, May;
- C40) Caroti L., Losa M., Federici A., (1998). The comfort and safety level of the road profile. *Proceedings of Roadsurf 98*.

### 5.3. National Journal and Conference Papers

- N1) Losa M., Lupi M., Balderi I., (2008). Analisi di un sistema di trasporto pubblico a guida vincolata a servizio di un'area vasta. Atti del 17° Convegno Nazionale S.I.I.V. Enna, 10 - 12 Settembre;
- N2) Losa M., Leandri P., (2006). L'aderenza della superficie di pavimentazioni della viabilità ordinaria da misure con dispositivo a ruota parzialmente frenata. *Manutenzione e adeguamento delle strade esistenti*. Cosenza, 20 - 22 Settembre, vol. 1, ISBN: 88-7458-051-7;
- N3) Losa M., Axerio A., (2006). Modello statistico per la stima della sicurezza stradale in corrispondenza di intersezioni semaforizzate. *II Convegno Nazionale: La sicurezza sulle strade della città*. Lucca, febbraio;
- N4) Losa M., Bonomo G., (2003). Identificazione del comportamento meccanico di fondazioni stradali in misto granulare mediante prove prestazionali in sito. *Atti del XIII Convegno Nazionale S.I.I.V.*. 30-31 Ottobre;
- N5) Losa M., Ristori C., (2002). Verifica dei disturbi chinetosici indotti dalla tortuosità del tracciato stradale. *Atti del XII Convegno Nazionale S.I.I.V. "Riqualficazione funzionale e sicurezza del sistema viario"*. Parma, 30-31 Ottobre;
- N6) Fantozzi M., Gallone G., Levita G., Losa M., Marradi A., (2002). Proprietà Dielettriche di <sup>[L]</sup><sub>[SEP]</sub>Conglomerati Bituminosi. *6° Congresso Nazionale AIMAT*. 8-11 settembre- Modena;



- N7) Losa M., Marradi A., (2001). Caratteristiche prestazionali di aggregati riciclati da demolizioni per sottofondi stradali. *Atti del XI Convegno Nazionale S.I.I.V.*, Verona;
- N8) Losa M., Ristori C., (2001). Adeguamento delle curve a raggio variabile alle condizioni operative dei veicoli. *Atti del XI Convegno Nazionale S.I.I.V.*, Verona;
- N9) Losa M., (2000). Vibrazioni indotte dal traffico: valutazione dei parametri dinamici degli strati della pavimentazione mediante prove deflettometriche. *Atti del X Convegno Nazionale S.I.I.V.* Catania, 26-28 Ottobre;
- N10) Caroti L., Lancieri F., Losa M., Branca L., (2000). La sicurezza stradale: condizioni ambientali e parametri dell'infrastruttura. *Strade & Autostrade*, ISSN: 1723-2155;
- N11) Caroti L., Lancieri F., Losa M., (1999). Considerazioni su alcuni fattori di rischio dell'incidentalità stradale. *Quarry and Construction*, ISSN: 2036-9034;
- N12) Caroti L., Losa M., (1999). La valutazione dei parametri fisici caratterizzanti il comportamento acustico e drenante dei conglomerati porosi. *Quarry and Construction*, ISSN: 2036-9034;
- N13) Caroti L., Lancieri F., Losa M., (1999). L'utilizzazione del FWD per la determinazione dei parametri meccanici della massicciata e della piattaforma. *Atti del IX Convegno Nazionale S.I.I.V. "Pianificazione e gestione di infrastrutture ferroviarie e aeroportuali"*, Cagliari;
- N14) Losa M., (1998). Rete stradale urbana e rete dei sottoservizi. *Atti del XXIII Convegno Nazionale Stradale AIPCR*;
- N15) Caroti L., Losa M., (1998). L'affidabilità degli spettri di carico per asse assunti per il calcolo delle pavimentazioni stradali. *Atti del Convegno Nazionale S.I.I.V. "Adeguamento funzionale e manutenzione delle infrastrutture viarie"*, Milano, 20 Ottobre;
- N16) Caroti L., Lancieri F., Losa M., (1998). Incidentalità, traffico e caratteristiche della pavimentazione. *Atti del Convegno Nazionale S.I.I.V. "Adeguamento funzionale e manutenzione delle infrastrutture viarie"*, Milano, 20 Ottobre;
- N17) Lancieri F., Losa M., (1997). Determinazione della resistenza all'usura per attrito radente dei materiali lapidei. *Quarry and Construction*, vol. 11, p. 13-17, ISSN: 2036-9034;
- N18) Losa M., (1997). La prestazione frenante dei letti d'arresto mediante l'analisi dell'interazione tra ruota e terreno. *Atti della Giornata di Studio "La sicurezza intrinseca delle infrastrutture stradali"*, p. 251-270, Roma, 20-21 Febbraio;
- N19) Losa M., (1997). Influenza dell'andamento planimetrico dell'asse stradale sulla sicurezza di circolazione dei veicoli industriali. *Atti del Convegno Nazionale S.I.I.V. "La sicurezza stradale : strategie e strumenti dell'ingegneria delle infrastrutture viarie"*, p. 413-422, Pisa, Ottobre;
- N20) Losa M., (1997). Le stazioni sotterranee e relativi vincoli urbani e ferroviari. *Quarry and Construction*, ISSN: 2036-9034

- N21) Losa M., (1997). La capacità di traffico di una stazione ferroviaria. vol. 10, PISA, TEP;
- N22) Losa M., (1997). La definizione degli indici di qualità della geometria del binario mediante la <sup>[1]</sup><sub>SEP</sub> valutazione delle caratteristiche dinamiche al contatto ruota-rotaia. vol. 11, PISA:TEP;
- N23) Losa M., (1996). Influenza delle membrane geotessili sulle prestazioni delle sovrastrutture stradali. *Atti del Convegno SIVV "I materiali nella Sovrastruttura Stradale"*, Ottobre;
- N24) Losa M., (1995). Su una particolare soluzione tecnologica per la realizzazione di vie di corsa per transtainer gommato su sedimenti fortemente compressibili nell'area portuale livornese. *Atti del Convegno SIVV "La Ricerca nel settore delle infrastrutture interportuali e aeroportuali"*, p. 111-114, Trieste.

## 6. Titles

### 6.1. Scientific responsibility for international and national research projects, selected for funding based on calls that involved competitive peer review

**COFIN 1998 (MURST):** Safety Environment Interaction in design of road infrastructures.  
PARTNERS: University of Florence, University of Pisa, University of Rome “La Sapienza”, University of Trieste.  
Period: 24 months.  
Participant of the Research Unit in Pisa.

**PRIN 2003 (Italian Ministry of University and Research):** The Environmental Compatibility and safety in innovative pavements for ordinary roads: Guidelines for design and quality control.  
PARTNERS: Politecnico of Turin, Politecnico University of Marche, University of Padova, University of Parma, University of Pisa.  
Period: 24 months.  
Scientific Responsibility of the research unit.

**FIRB 2003 (Italian Ministry of University and Research):** Innovative bituminous mixtures for mitigation of noise and traffic induced vibrations.  
PARTNERS: University of Bologna and University of Pisa.  
Period: 24 months.  
Scientific Responsibility of the research unit.

**PNSS 2004:** Leopoldo Research Project - co-funded within the Road Safety National Plan by the Transportation and Infrastructure Ministry, the Region and the 10 Tuscany Provinces: Safety and Environmental Compatibility of Ordinary Road Pavements.  
PARTNERS: University of Pisa and ARPAT.  
Period: 48 months.  
Principal investigator.

**PRIN 2007 (Italian Ministry of University and Research):** Advanced modeling and design of perpetual pavements. PARTNERS: Politecnico of Turin, Politecnico University of Marche, University of Bologna, University of Parma, University of Pisa.  
Period: 24 months.  
Scientific Responsibility of the research unit.

**PRIN 2009 (Italian Ministry of University and Research):** Innovative road pavements for environmental sustainability – Design, construction and modeling of real scale test section containing recycled materials.  
PARTNERS: Politecnico of Turin, Politecnico University of Marche, University of Parma, University of Pisa.  
Period: 24 months.  
Scientific Responsibility of the research unit.

**EC-DGTE 2009:** EASYWAY-ITHACA Europe-wide traffic and network management and commodity. Corridors Southern Mediterranean open seas - linking motorways of the sea and of the road. PARTNERS: 21 European Countries.  
Period: 12 months.  
Scientific Responsibility of the research unit (Subcontractor).

**CARILU 2010:-** Network of environmental and vehicle speed sensors to improve safety on collector rural roads funded by the Fondazione Cassa di Risparmio di Lucca  
PARTNERS: University of Pisa DIC, DCMNP, DII.  
Period: 12 months.  
Principal Investigator

**PNSS 2011:** PeCS - Pedestrian Crossing Safety - Improvement of urban road safety in the Municipality of Rosignano, with particular regard to vulnerable users and signs - co-funded within the Road Safety National Plan by the Ministry of Transportation and Infrastructure, the Region of Tuscany and the Municipality of Rosignano M.mo  
PARTNERS: University of Pisa DIC, Municipality of Rosignano M.mo.  
Period: 12 months.  
Principal Investigator;

**PNSS 2011:** Leopoldo II Research Project - co-funded within the Road Safety National Plan by the Transportation and Infrastructure Ministry, the Region and the Provinces of Arezzo, Lucca, Firenze and Pistoia: High Sustainable Ordinary Road Pavements  
PARTNERS: University of Pisa DIC, CNR-INFN.  
Period: 24 months.  
Principal Investigator.

**EU LIFE 2012:** “CLEANSED LIFE12 ENV/IT/000652”: Innovative integrated methodology for the use of decontaminate river sediments in plant nursing and road construction”  
PARTNERS: ISE CNR - Pisa (I), CEBAS- CSIC - Murcia (ES), IBIMET CNR - Firenze (I), University of Florence (I), University of Pisa (I).  
Period: 22 months.  
Scientific Responsibility of the research unit.

**CEDR 2012:** “CEDR Transnational Road Research Programme” – DISTANCE - Developing Innovative Solutions for Traffic Noise Control in Europe (20 months); Scientific Responsibility of the research unit;  
PARTNERS: Belgian Road Research Center (BRRC), Transportation Research Laboratory UK (TRL), SINTEF (NO), University of Pisa DIC (I).  
Period: 20 months.  
Scientific Responsibility of the research unit.

## **6.2. Participation in editorial boards of recognised: journals, collections of books, encyclopedias and treatises**

### Editorial Board

International Journal of Pavements; since 2002

### Member of the reviewer panel:

Journal of Transportation Engineering ASCE;[SEP]

Materials and Structures, RILEM;

Road Materials and Pavement Design - International Journal;

International Journal of Pavement Engineering;[SEP]

International Journal of Pavement Research and Technology;[SEP]

International Journal of Pavements;[SEP]

Transportation Research Record - Journal of the Transportation Research Board;

Journal of Airport Management

## **6.3. Assignment of teaching duties or research (fellowship) at universities and research institutes, foreign and international, of high quality**

International Course of Research Doctorate on "Processes, Materials and Constructions in Civil and Environmental Engineering and for the Protection of the Historic-Monumental Heritage" sponsored by the University of Florence in co-operation with the Deutsche Forschungsgemeinschaft (DFG) member of the professor council from 2011 to 2012

International Course of Research Doctorate on "Civil and Environmental Engineering" sponsored by the University of Florence, Pisa, Perugia in co-operation with the University of Braunschweig member of the professor council from 2013 to present

University of Wisconsin – Madison – Modified Asphalt Research Center. Visiting professor from August 5 to August 30, 2013 and from August 4 to August 29, 2014.

#### **6.4. Partecipation in academies prestigious in the field**

Member of the Transportation Research Board of the National Academies, Washington D.C.;

Member of the American Society of Civil Engineering – Transportation and Development Institute;

Member of the American Society of Civil Engineering – Geo Institute;

Expert member of the Swiss National Science Foundation (SNSF)

Founder member of the iSMARTi - "International Society for Maintenance and Rehabilitation of Transportation Infrastructures"; since 2008, member of the Board of Governors;

Member of the Italian Railway Engineering Official Body C.I.F.I.

Member of the Italian Transportation Infrastructure Society S.I.I.V. ; from 2003-2007 he was member of the Society Directive Council with function of General Secretary;

Founder member of the Scientific Association on Infrastructure and Transport A.S.I.T. from 2015.

#### **6.5. High qualification technical and scientific committees<sup>[L]</sup><sub>[SEP]</sub>**

In 1998-99, associate member of the PIARC International Committee "Surface Characteristics".

Since 2003: chair of the iSMARTi Committee "Condition Monitoring and Assessment"<sup>[L]</sup><sub>[SEP]</sub>

Since 2003 Expert member of MIUR for PRIN evaluation.

Since 2008: member of the Technical Committee "Highway Pavement" of the Transportation and Development Institute ASCE;

Since 2008: member of the PIARC National Committee TC 4.2 – “Road Pavements”

Since 2010: member of the ASCE Geo Institute Pavement Committee;

Since 2012: member of the TRB Standing Committee on Flexible Pavement Design (AFD60)

Since 2012: member of the TRB Standing Committee on Strength and Deformation Characteristics of Pavement Sections (AFD80).

Since 2013: member of the ISAP - WG 4 - New technologies and special environmental aspects for asphalt pavements;

Since 2014: member of the RILEM TC 237-SIB “Testing and Characterization of Sustainable Innovative Bituminous Materials and Systems” TG2 – Mixture Design and Compaction

## 6.6. Invited lectures and presentations<sup>[1]</sup><sub>[SEP]</sub>

### Relevant Invited lectures

September 2003, invited lecture on "Nondestructive tests with FWD: the backanalysis issues" within the 1st SIIV course of Higher Education to the Research on "Flexible Road Pavements" organized by the University of Ancona;

October 2004, invited lecture on "Safety review and accident analysis" in the tutorial n. 2 "Road safety analysis methods and procedures" organized by the University of Florence within the II International SIIV Congress "New technologies and modeling tools for roads";

June 2005, invited lecture on "Nondestructive tests on road pavements" within the 1 week short course on "Pavement Management Systems" organized by the University of Mississippi at Oxford.

August 2006, invited lecture on "Modeling Braking Slip Friction on Wet Pavements: A State-of-the Art Review" at the "2006 Second International Airport Conference: Planning Infrastructure and Environment" held in Sao Paulo - Brazil;<sup>[1]</sup><sub>[SEP]</sub>

September 2006, invited lecture on "Road and airport controls: performance tests" within the 4th SIIV course of Higher Education to the Research on "Road and Airport Pavements" organized by the University of Cagliari;

December 2006, Invited lecture on "Structural analysis of asphalt pavements built on historical ancient roads" at The Symposium on Pavement Modeling and Damage Mechanics in Honor of Professor Samuel H. Carpenter's Accomplishment, Hammamet - Tunisia;<sup>[1]</sup><sub>[SEP]</sub>

September 2008, invited lecture of the module "Pavement macrotexture and tyre/road noise" within the 6th SIIV course of Higher Education to the Research on "Road Construction Materials" organized by the University of Enna;

November 2008, invited presentation on "High performance Asphalt Concrete produced at low Energy consumption" within the SIIV event "Research and Innovation in road pavements", Asfaltica 2008, Padova, Italy, 27 novembre.

June 2009, invited lecture on "Asphalt Mixture Design for Optimum Friction and Noise Characteristics" at the University of Wisconsin at Madison (USA);<sup>[1]</sup><sub>[SEP]</sub>

January 2010, invited lecture on "Measurement and evaluation of residual service life of flexible pavements" at the Workshop "Nondestructive tests for roads and airports" at the University of Messina, Italy;

April 2010, invited lecture on "Technologies for development and modernization of transportation infrastructures" at the Moving 2010 held in Kiev, Ucraina.<sup>[1]</sup><sub>[SEP]</sub>

September 2011, invited lecture on "Laboratory and field tests on wearing course mixtures containing crumb rubber " within the SIIV Summer School on "Road Construction Materials" organized by the University of Parma;

September 2014, invited lecture on "Crumb rubber modified asphalt: Technologies for hot mixture production and characterization" within the SIIV Summer School on "Next generation road infrastructure: Sustainable, Safer and Innovative" organized by the University of Bologna;

September 2014, invited lecture on "Use of GPR technique for road monitoring" within the Training School on Civil Engineering Applications of GPR - organized by the University of Pisa within the COST Action TU 1208.

Relevant presentations at international congresses

He attended numerous congresses actively, presenting scientific papers in most of them. Here are reported the more relevant international congresses where he presented scientific papers:

Roadsurf 98 -First Czech Symposium on Road and Airfields Surface Characteristics Prague 2 June 1998;

Fourth International Symposium on Pavement Surface Characteristics of Roads and Airfields - SURF 2000, Nantes, 22-24 May 2000;

1st European Pavement Management System Conference, Budapest, 24-27 September 2000;

2nd International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control, Auburn, Alabama, USA July 29 - August 1, 2001;

Inter-Noise 2001, The Hague, The Netherlands, 27-30 August 2001;

17th International Congress on Acoustics, Rome, 2-7 September 2001;

Inter-Noise 2002, Dearborn, MI, USA, 19-21 August 2002;

37th UK Conference on Human Response to Vibration, Loughborough University, 18-20 September 2002;

Mairepav, 3rd International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control, University of Minho, Portugal, 7-10 July 2003;

II International SIIV Congress, Firenze, 27-29 October 2004;

Mairepav, 4th International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control, University of Ulster, Ireland, 18-19 August 2005;

3rd International SIIV Congress, Bari, 22-24 September 2005;

4th International Congress on Bituminous Mixtures and Pavements, Thessaloniki, Greece, April 2007;

MAIREPAV5, The Fifth International Conference on Maintenance and Rehabilitation of Pavements,



Park City, UTAH, USA, 8-10 August 2007;

19th International Congress on Acoustics, Madrid, Spain, 2-7 September 2007;

4th SIIV International Congress, Palermo, ITALY, 12-14 September 2007;

Transportation Research Board 2008 Annual Meeting, 13-17 January 2008;

European Asphalt Technologist Association (EATA 08) Congress, 13-14 April, 2008;

Transportation and Development Innovative Best Practices (TDIBP 2008), Beijing, China, April 24-26, 2008;

6th RILEM International Conference on Cracking in pavements, Chicago, Illinois, June 16-18, 2008;

Acoustics 08, Paris, June 29-July 4, 2008;

6th Symposium on Pavement Surface Characteristics - SURF 2008 - Portorose, Slovenia, 20-22 october 2008;

Eighth International Conference on Bearing Capacity of Roads, Railways and Airfields, Urbana Champaign, Illinois, USA, June 29- July 2, 2009;

International Conference on Maintenance and Rehabilitation of Pavements and Technological Control (MAIREPAV6), Turin, Italy, 8-10 July 2009;

European Asphalt Technologist Association (EATA 2010) Congress, 13-14 April, 2010;

TRB 90th Annual meeting, Washington D.C., 23-27 January 2011;

5th International Conference on Bituminous Mixtures and Pavements, Thessaloniki, Greece, 1-3 June 2011;

TRB 91st Annual meeting, Washington D.C., 22-26 January 2012;

Asphalt Rubber 2012, Munich, Germany, October 23-26, 2012

SIIV 2012, Sustainability of road infrastructures, Roma, Italy, 29-31 October 2012;

TRB 92nd Annual meeting, Washington D.C., 13-17 January 2013;

ASCE – The Airfield and Highway Pavement Conference. Sustainable and Efficient Pavements, Los Angeles, CA, 9-12 June 2013;

TRB 93rd Annual meeting, Washington D.C., 12-16 January 2014;

TRB 94th Annual meeting, Washington D.C., 11-15 January 2015;

EATA 2015, Stockholm, S, 15-17 June 2015;

2nd International Congress on Roads, Tirana, 24-25 september 2015;

Member of international scientific Committees

In 2002-2003: member of the International Scientific Committee of the 3rd International Symposium MAIREPAV "Maintenance and Rehabilitation of Pavements and Technological Control", University of Minho, Guimares, Portugal , 7-10 july 2003.

In 2004-2005: member of the International Scientific Committee of 4th International Symposium MAIREPAV "Maintenance and Rehabilitation of Pavements and Technological Control", University of Ulster, Belfast, Ireland, 17-19 august 2005.

In 2005-2006: member of the International Scientific Committee of "Second International Airport Conference", São Paulo, Brazil, 2 -4 August, 2006.

In 2006-2007: member of the International Scientific Committee of "4th International Congress on Bituminous Mixtures and Pavements", Thessaloniki, Greece, 19 - 20 April 2007;

In 2006-2007: member of the International Scientific Committee of "5th International Symposium MAIREPAV - Maintenance and Rehabilitation of Pavements and Technological Control", University of Utah, Park City, UTAH, USA, 8-10 august 2007.

In 2007-2008: member of the International Scientific Committee of "First International Conference on Transportation Infrastructures (ICTI 2008)", Beijing, CHINA, 24-26 April 2008.

In 2007-2008: member of the International Scientific Committee of "3rd European Pavement and Asset Management Conference", Coimbra, Portugal, 7-9 Luglio 2008.

In 2008-2009: Member of the International Organizing Committee and of the International Scientific Committee of "6th International Symposium MAIREPAV - Maintenance and Rehabilitation of Pavements and Technological Control", Politecnico di Torino.

In 2008-2010: member of Geo-Shanghai 2010 International Conference Advisory Committee, Shanghai, CHINA, 8-10 June 2010.

In 2009-2010: member of the International Scientific Committee of "Second International Conference on Transportation Infrastructures (ICTI 2010)", Sao Paulo, Brazil, 4-6 August 2010.

In 2010-2011: member of the International Scientific Committee of "5th International Congress on Bituminous Mixtures and Pavements", Thessaloniki, Greece, 1 - 3 June 2011.

In 2011-2012, member of the International Scientific Committee of "3rd 4PBB Four Point Bending Beam Conference" held in Davis, CA, USA, 17-18 September 2012.

In 2011-2012: member of the International Scientific Committee of EPAM 2012 "4th European Pavement and Asset Management Conference", Malmo, Sweden, 5-7 September 2012.

In 2011-2012: Member of the International Scientific Committee of "7th International Symposium

MAIREPAV - Maintenance and Rehabilitation of Pavements and Technological Control", University of New Zealand, August 8-10, 2012;

In 2011-2012, member of the Scientific Committee of 2012 SIIV International Congress, Roma, 29-31 October 2012.

In 2012-2013, member of the Scientific Committee of the ASCE Conference Airfield and Highway Pavement 2013. Sustainable and Efficient Pavements, Los Angeles, July 2013;

In 2013-2014, Chairman of the 3rd International Conference on Transportation Infrastructure ICTI 2014 – Sustainability, Eco-Efficiency and Conservation in Transportation Infrastructure Asset Management, Pisa, 22-25 April 2014.

In 2014-2015: member of the International Scientific Committee of "6th International Congress on Bituminous Mixtures and Pavements", Thessaloniki, Greece, 10 - 12 June 2015;<sup>[L]</sup><sub>[SEP]</sub>

In 2015-2016: member of the Scientific Committee of the "8th International Conference on Mechanisms of Cracking and Debonding in Pavements", 7-9 June 2016;<sup>[L]</sup><sub>[SEP]</sub>

### **6.7. achievements in technology transfer in terms of participation in the creation of new enterprises (spin off), development, deployment and commercialisation of patents**

2012 - Academic Spin off "NExT": New and Emerging technologies for sustainability of Transportation infrastructures. The Spin off has the goal of transferring in the current practice the know-how on technological solutions developed within the Leopoldo Research projects for the improvement of the transportation infrastructure sustainability.

### **6.8. other titles**

RESEARCH ACTIVITY:<sup>[L]</sup><sub>[SEP]</sub> He has promoted and coordinated relevant research projects and contracts in the field of transportation infrastructures carried out by the Department of Civil Engineering up to 2012 and by the Department of Civil and Industrial Engineering at the University of Pisa since 2012 up to present.<sup>[L]</sup><sub>[SEP]</sub>

He has been interested to theoretical and practical issues of the wide sector of design, construction and maintenance of transportation infrastructures; his research interests focus primarily on:

- pavement mechanics and modeling including viscoelastic response;
- pavement surface characteristics;<sup>[L]</sup><sub>[SEP]</sub>
- low noise and sustainable pavements;
- road materials;<sup>[L]</sup><sub>[SEP]</sub>

- road safety and road alignment;
- design of railway stations and lines, railway track.

Particularly significant is the activity carried out as Principal Investigator of the Leopoldo research project (<http://leopoldo.pjxp.com/>), funded within the Road Safety National Plan by the Ministry of Infrastructures and Transportation, by the Region of Tuscany and by the 10 Provinces of Tuscany. The goal of the project was to study and to optimize safety, durability and environmental compatibility of ordinary road pavements. In particular, the project was aimed at the definition of some guidelines reporting the criteria to be used by road agencies for selection of pavement types more appropriate for each type of context, predominant meteorological conditions and characteristics of the soil. These criteria have been defined as function of road pavements requirements in terms of texture and mechanical properties needed to obtain adequate values of friction, to reduce noise annoyance as well as to warrant the pavement durability.

Other than to utilize traditional pavement types, innovative solutions for ordinary roads, to introduce as valuable alternatives at high performance from safety and environmental compatibility point of views, have been identified. The work carried out within this project is documented in 25 papers published from 2006 to 2015 as well as in 4 research project reports.

The project has been concluded with the peculiarity in the national context of the construction of six experimental road sections, that have been instrumented with weight in motion systems, strain gauges in the bituminous layers, pressure cells in the sub-base, time domain reflectometers in the subgrade and thermocouples in asphalt layers.

The research has resulted in new developments including new procedures to evaluate pavement surface characteristics and models to predict pavement acoustic performance and skid resistance.

In the research activity he has international collaborations, in particular with:

- the University of Illinois at Urbana Champaign (prof. Imad Al-Qadi): collaboration on airport and road pavement instrumentation (Pavements of the Leopoldo research project and Runway of Cagliari Airport)
- University of Nottingham (prof. Gordon Ayrey): active collaboration on the evaluation of rheological properties of aged binder in the RAP, and past collaboration on WAM-Foam technology;
- University of Wisconsin at Madison (prof. Hussain Bahia): collaboration on pavement surface characteristics and rheology of binders. Giacomo Cuciniello, my former student, discussed his MSc thesis at UW on the subject “Developing a Boiling Test to Quantify Effective Bonding of Aggregates with Binder”, and he is actually PhD Student at the University of Nottingham;
- Michigan State University (prof. Karim Chatti): Danilo Balzarini, my former student, prepared the MSc thesis at MSU on Pavement-vehicle interaction, and actually he is PhD student at MSU working on the same subject;
- University of Mississippi (prof. Waheed Uddin); Jacopo Pellegrini, my former student, prepared the MSc thesis at UM on the subject: “Calibration and validation of a model to predicting ozone pollution in Pisa”
- IFFSTAR at Nantes (dott. Michel Berengier): past collaboration on acoustic absorption of porous asphalt pavement;

- University of Braunschweig (D) (prof. M. P. Wistuba): He is co-tutor of the PhD student Chiara Riccardi on rheological properties of binders and mortars to predict behavior of Asphalt Concrete Mixture.

Advisor of Ph.D. dissertations:

“Methodology of collection and analysis of accident data applied to Road Safety Audit Review of collector rural roads”, discussed by dr. Cristiano Ristori in 2005;

“Calibration of a Safety Performance Function for collector rural roads”, discussed by dr. Antonella Terrosi Vagnoli Waiz Del Mestri Axerio in 2007;

“Study of low noise pavements”, discussed by dr. Pietro Leandri in 2008;

“Mixtures of recycled aggregates and their use in road pavement structures: physic- qualitative, performance characteristics and technical-economic aspects”, discussed by dr. Simone Mannucci in 2009;

“Visco-elasto-plastic characterization of asphalt concrete by means of diametral compression tests”, discussed by dr. Renato Bacci in 2010;

“Analysis in virtual reality of road critical points and risk conditions”, discussed by dr. Armando Cofrancesco in 2011;

Assignments in the Faculty of Engineering at the University of Pisa<sup>[L]</sup><sub>[SEP]</sub>

In 2001/02 member of the founding council of the undergraduate course in Civil, Environmental and Territory Engineering;

Since 2002 member of the teaching commission of the same course;<sup>[L]</sup><sub>[SEP]</sub>

From 2003 to 2005 and from 2010 to 2014 elected member of the 08 Area Scientific Commission;<sup>[L]</sup><sub>[SEP]</sub>

From 2003 to 2011 member of the building and general affair Commission of the Faculty of Engineering;

From 2005 to 2009 and from 2011 Vice-President of the undergraduate course in Civil Engineering;<sup>[L]</sup><sub>[SEP]</sub>

In 2007 member of the Faculty Commission to update courses to D.M. 270;

Assignments in the Department of Civil Engineering at the University of Pisa

From 2001 member of the teaching college of the Ph.D. course in "Sciences and Techniques of Civil Engineering"

From 2005 to 2009 and from 2011 member of the directive council of the Ph.D. School in Engineering

"Leonardo da Vinci";

From 2009 Scientific Responsibility of the Experimental Road Research Laboratory;

Assignments in the Department of Civil and Industrial Engineering at the University of Pisa

From 2016, Vice-director of the Department of Civil and Industrial Engineering at the University of Pisa;

From 2014, President of the Bachelor in Civil, Environmental and Building Engineering;

From 2015, Local coordinator of the International PhD Course in Civil and Environmental Engineering, joined with the University of Florence and the University of Braunschweig (D)

From 2012, member of the didactic commission of the Department;

From 2012, Scientific Responsibility of the Experimental Road Research Laboratory;

Research Coordinator of relevant commercial contracts (More than € 50.000)

In 2002, "Definition and calibration of a methodology for safety analysis of existing roads" - Province of Pisa;

In 2004, "Measurement of structural parameters and programming of rehabilitation works on pavements of the S.G.C. FI-PI-LI in the Province of Livorno", Province of Livorno;<sup>[L]</sup><sub>[SEP]</sub>

In 2004, "Study and control of working phases and material quality in road works", Province of Florence;

In 2005, "Study for the use of CRG (sand granules coated of crystallized sulphates) in construction of road embankments, subgrades and sub-bases", Solvay Chemical Italy;

In 2006, "Study of low noise pavements in urban areas", Municipality of Pisa;<sup>[L]</sup><sub>[SEP]</sub>

From 2006/08, "Study and control of working phases and material quality in functional rehabilitation and safety improvement works on the S.G.C. FI-PI-LI", Province of Florence;

In 2006, "Evaluation of structural conditions of the turnaround bay of the Airport Tito Minniti of Reggio Calabria", DIMET, Mediterranean University of Reggio Calabria;<sup>[L]</sup><sub>[SEP]</sub>

From 2007 to 2009, "Study of mixtures and quality controls of works for the new yachting industrial area along the Canale dei Navicelli in Pisa", Sviluppo Navicelli S.p.A.;

In 2015, "Evaluation of surface properties deterioration of the Firenze Peretola Airport runway", Aeroporti Toscana S.p.A.

### Participation in national commissions and committees

In 1997-99, member of Working Groups in the Road Commission of the Research National Council to prepare standard documents and member of the Working Group "Geometric and functional Characteristics of roads" of the "Commission for Standards on Road Materials and Design, Construction and Maintenance of Roads";

In 2002-2005, member of the Working Groups of UNI (Italian Specification Body) "Surface Dressings and slurry surfacings" and "Surface Characteristics";

In 2004-2007: member of the National Technical Committee AIPCR C 4.3 "Road Pavements";

In 2008-2011: member of the National Technical Committee AIPCR D2b "Flexible and semi-rigid pavements";

In 2009, expert member in the Tender Commission for the assignment of the public work for the construction of the new road network within the A. Vespucci Intermodal Center in Livorno appointed by the Faculty of Engineering at the University of Pisa;

In 2012, expert member in the Tender Commission for the assignment of the public work concession for design, construction and management of a People Mover connecting the G. Galileo International Airport with the Pisa Central railway station, appointed by the Faculty of Engineering at the University of Pisa;

## **6.9. Other scientific activities**

### Organization of international scientific events

May 2004, chairman of the 1 week short course on "Pavement Management Systems" organized by the University of Pisa in cooperation with the University of Mississippi;

In 2014: chairman of the 3rd International Conference on Transportation Infrastructure ICTI 2014. Sustainability, Eco-efficiency and Conservation in Transportation Infrastructure Asset Management. Pisa 22-25 April 2014.

In 2014: chairman of the Training School on Civil Engineering Applications of GPR, organized by the COST Action TU 1208 and hosted by the Department of Civil Engineering at the University of Pisa, Italy, September 22-25, 2014

### Chairman in congress sessions

In 2003: chairman of session "Recycling and use of industrial by-products" and moderator of session

"Modern asphalt pavement materials and paving technologies" of 3rd International Symposium MAIREPAV "Maintenance and Rehabilitation of Pavements and Technological Control", University of Minho, Guimares, Portugal , 7-10 July 2003;<sup>[1]</sup><sub>[SEP]</sub>

In 2006: moderator of the session VI of the "2006 Second International Airport Conference", São Paulo, Brazil, 2 -4 August, 2006;<sup>[1]</sup><sub>[SEP]</sub>

In 2007: chairman of the session V - Pavement recycling, geotextiles - of "4th International Congress on Bituminous Mixtures and Pavements", Thessaloniki, Greece, 19 - 20 April 2007;<sup>[1]</sup><sub>[SEP]</sub>

In 2009: chairman of the session "Recycling and use of industrial by-products" of the 6th International Symposium MAIREPAV 6 "Maintenance and Rehabilitation of Pavements and Technological Control", Politecnic of Turin, Italy , 8-10 July 2009;<sup>[1]</sup><sub>[SEP]</sub>

In 2011: chairman of the session V - Pavement recycling, Asphalt grids and geotextiles - of the "5th International Congress on Bituminous Mixtures and Pavements", Thessaloniki, Greece, 1 - 3 June 2011;

In 2013; presiding officer of the event " 814 Tire-Pavement Noise and Quieter Pavements, Part 2" at TRB 92nd Annual meeting, Washington D.C., 13-17 January 2013;

In 2013: chairman of the session Asphalt Concrete Characterization and Field QA/QC at the ASCE – Airfield and Highway Pavement Conference. Sustainable and Efficient Pavements, Los Angeles, CA, 9-12 June 2013;

In 2014; presiding officer of the event " Characterization and Performance of Unbound Pavement Layers" at TRB 93rd Annual meeting, Washington D.C., 12-16 January 2014;

## 7. Teaching activity

### Role of Assistant Professor<sup>[1]</sup><sub>[SEP]</sub>

From the A.Y. 1994/95 to 2000/01

Collaboration as tutor in the following disciplines within the 5 years graduate course in Civil Engineering:<sup>[1]</sup><sub>[SEP]</sub>

"Fundamentals of Road Infrastructures", teacher prof. Luciano Caroti;<sup>[1]</sup><sub>[SEP]</sub>

"Construction of Roads, Railways and Airports", teacher prof. Fausto Lancieri;

"Design of Roads, Railways and Airports", teacher prof. Mario Tempestini.<sup>[1]</sup><sub>[SEP]</sub>

Within these disciplines he carried out practicals on railway infrastructures, on road design and on laboratory tests for road materials, and was member of the examination commission.

From the A.Y. 1998/99 to 2000/01, temporary cover position as teacher of "Fundamentals of Road



Infrastructures" for the undergraduate course in Infrastructure Engineering in the Faculty of Engineering at the University of Pisa, and president of the examination commission;

#### Role of Associate Professor

From the A.Y. 2001/02 to 2003/04, teacher of "Fundamentals of Road Infrastructures" in the 5 years graduate course of Civil Engineering in the Faculty of Engineering at the University of Pisa, and president of the examination commission;

From the A.Y. 2004/05 to 2009/10: teacher of "Fundamentals of Territorial Road Infrastructures" in the undergraduate course of Civil, Environment and Territory Engineering in the same Faculty, and president of the examination commission;

From the A.Y. 2010/11 to present: teacher of "Fundamentals of Road Engineering" in the undergraduate course of Civil and Environmental Engineering in the same Faculty, and president of the examination commission.

#### Additional Teaching Assignments

From the A.Y. 2001/02 to 2003/04, teacher of "Urban and Metropolitan Road Infrastructures" in the 5 years graduate course of Building Engineering in the same Faculty, and president of the examination commission;

From the A.Y. 2004/05 to 2010/2011: teacher of "Urban and Metropolitan Road Infrastructures" in the 5 years graduate course of Architecture-Building Engineering in the same Faculty, and president of the examination commission;

From the A.Y. 2010/11 to present: teacher of "Theory of Transportation Infrastructures" in the graduate course of Hydraulic, Transportation and Territory Engineering in the same Faculty, and president of the examination commission;

#### I level Master Teaching<sup>[1]</sup><sub>SEP</sub>

June 2003, teacher of a cycle of lectures on "Accident statistics and modeling" and "Methods and Tools for the analysis of accident data" within the I level Master course on Road Safety at the University of Florence - Faculty of Engineering;

March 2005, teacher of a cycle of lectures on "Accident analysis methods" and "Numerical applications of accident analysis" within the I level Master course on Road Safety at the University of Florence - Faculty of Engineering;

### Advisor of Master's degree thesis

Advisor of more than 100 degree thesis both theoretical and experimental as well as on practical designs; subjects of the theses are related to transportation infrastructures, with particular regard to:

- Road and railway safety;
- Road and railway materials;
- Design of road, railways and airports;
- Maintenance of road and railway superstructure;

### Awards to student advisees

Antonio Federici received the PLASSER award (1997) in the graduate student competition for the best degree thesis on arguments related to the railway infrastructure;

Giacomo Cuciniello received the SITEB 2011 award in memory of Gianfranco Turrini, in the graduate student competition for the best degree thesis on arguments related to asphalt concretes;

### Professional Education

In 2005, "Treatment techniques for road pavement maintenance" in the workshop "Maintenance of road pavements" organized by the Province of Pisa;

In 2006, coordinator and teacher of a professional course on "Basic technical elements of performance based specifications" for technicians of the Province of Florence;

In 2012, presentation on "Performance based contracts for road maintenance management" within the seminar on "Global service contracts for road maintenance" organized by the CAFRE at the University of Pisa;

In 2012, presentation on "Road Maintenance Management" within the seminar organized by the Province of Pisa, SIIV and SITEB, 8 november;

Pisa, 13 February 2020.

Prof. Massimo Losa