

Letter from Editor

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*This third annual issue of **Transportation Infrastructure Engineering**, hosted by the electronic edition of the **Intersection Journal**, is dedicated mainly to the relative young engineers and researchers, from our country and abroad, also to doctor and master candidates confronted with specific research and new ideas, trying to emphasize their significant endeavor and contributions they are bringing in the challenging field of transportation research.*

*This issue is opening with a succinct presentation of significant results of the research works, undertaken in the frame of the **Department of Civil Engineering, University of Minho from Portugal**. This introductory paper entitled: **The Road Network Rehabilitation for 21-st Century – a Global Vision on Innovation in Road Rehabilitation**", drafted by the group of researchers (Jorge Pais, Elisabete Freitas, Hugo Silva and Joel Oliveira), conducted by **professor Paulo Pereira**, intends and succeeds to be "an open approach to road network rehabilitation and its impact on the pavement life" in the context of the new challenges for the near future. In their, endeavor to offer the society, better roads based on conceiving and implementing a sustainable construction and rehabilitation of road pavements, the Portuguese researchers are also emphasizing the role of creative thinking and innovation at the service of society, in the field of road engineering.*

*With their paper: **"Reliability and Durability of Concrete and Pre-stressed Concrete Bridges, Decision Making Process and Risks"**, our Czech colleagues **Jiri Pokorny, Vladimir Dolezel, Josef Stryk and Karel Pospisil**, from The Transport Research Institute of Czech Republic, are describing the most frequently occurred failure causes within the realization, operation and reconstruction of the bridge structures, recommending some interesting non-destructive tests, in order to be used in bridge diagnostics.*

***Vasilica BEICA, PhD Eng.**, from Romanian Centre for Road Engineering Studies and Informatics –CESTRIN, presents the results obtained, during her doctoral study, on the evaluation of various bituminous binders used in rehabilitation and modernization works, involving the SHRP/Superpave equipments and specifications in conjunction with the classical method in the paper: **"A Performance Grade Polymer –Modified Bitumen, According to SHRP Specifications"**.*

*Another distinguished specialist **Mihai Stasco, PhD Eng.**, presents in his paper the research work undertaken during his doctoral study, on the **"Electrical Simulation of the Rheological Behavior of the Asphalt Mixes"**.*

*The next six papers are dealing with the research issues, undertaken, at Universidade do Minho, (<http://www.eng.uminho.pt>) in Portugal, under the*



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*guidance of a group of Portuguese Tutors, coordinated by **Professor Paulo PEREIRA** and **Professor Paulo B. LOURENÇO**, by each of our MSc students involved in the Leonardo da Vinci, mobility project RO/2004/PL 93209/S : “**Students Vocational Training – Premise for an Integrated European Transport Infrastructure**”.*

This project, initiated by our University, has been conceived as a trans-national mobility action, having as main objective, the placement, during the beginning of the year 2006, of six Romanian students, from Technical University “Gh. Asachi” Iasi, to the Department of Civil Engineering/School of Engineering/ University of Minho, located in Guimarães, Portugal. The tasks envisaged for the Romanian students was to perform there, a combined academic research and vocational training stage of five months, directly related with the subject of their diploma/master works. The papers are short extracts from their dissertation works (see the web-site: <http://www.ce.tuiasi.ro/~ccf/events.html>).

*In their paper: “**Modelling of a Flexible Road Pavement in Portugal**”, the authors **Andrei Gabriel Ionescu** and **Elisabete Fraga Freitas** present the works undertaken in the frame of “Leonardo da Vinci” Mobility Project: RO/2004/PL93209/S, at Universidade do Minho - Center for Civil Engineering, Highways Laboratory, under the coordination of Paulo Pereira, PhD, PE, Professor of Civil Engineering, tutored by Elisabete Freitas and Jorge Pais. This article presents the solving of one of the issues in this project: the modelling of an existent pavement with its pavement condition and bearing capacity. Further, under the same relevant tutoring, **Irinel-Diana Vrancianu** and **Elisabete Fraga Freitas**, present the solving of one of the significant issues of the project:” **The Division of the Road Tested with FWD into Homogenous Sectors, Checking the Homogeneity and the Statistical Relevance of the Division – According to COST 336 Action Final Report**”.*

***Costel Cristian Botezatu, Joel Oliveira and Hugo Silva**, in their paper: “**The Main Stages of Road Infrastructure Concessions in Portugal**”, refer to a portion of the new highway build in the Porto area. This road is part of the Concession Scut do Grande Porto that congregates a group of freeways and groups road associates in the area of Grande Porto, integrated in the National Road Plan, his work being undertaken in the frame of the same Leonardo mobility project RO/2004/PL93209/S realized at University of Minho from Portugal.*

***Vlad Apreutesei, Daniel V. Oliveira and Paulo B. Lourenço**, in their paper:”**Repair and Strengthening Techniques for Masonry Arch Bridges**” describe some of the techniques used in the process of strengthening damaged masonry arch bridges. The problems are very complex because existing bridges differ in structural materials, in construction age, in types and in condition rating. The most frequent bridge building materials have been stone, wood, reinforced concrete and steel. Existing stone bridges are centuries-old and many of them are*



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*historical buildings. Any repair has to take into account not only defects and damages identified, but also the main features of the bridge, the intervention costs and operation difficulties.*

***Cristina - Emanuela Lanivsi, Graça Vasconcelos and Paulo Lourenço** present their research results on “**Numerical Analysis of Historical Construction**”, with practical application to the restauration of the Porto Cathedral in Portugal.*

*Finally, closing this third issue, two enthusiastic graduate students from our University, **Anca-Aura Gavrilitza** and **Cristina-Lucia Lucache**, are presenting their work study, concerning the behaviour and performance of some experimental road sector realized on the existing road network in their comprehensive paper: “**Performance of the Experimental Road Pavement Sectors Realized with Asphalt Mixtures Sstabilized with Various Fibers and Improved Bitumen on National Road NR 17 Vatra Dornei- Suceava**”.*

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