

Letter from the Editor

Radu Andrei

*Department of Transport & Infrastructure Engineering,
Technical University "Gh. Asachi" Iasi 43 Professor D. Mangeron Str., 700050 Romania*

First of all, from behalf of the Editorial Team, I'd like to welcome all readers of this first annual issue of **Transportation Engineering Infrastructure**, hosted by the new electronic edition of the **Intersection Journal**. Our editorial team is intending to feature articles of innovative and timely research and development activities in all modes of transportation infrastructure. Brief new items of interest to the academia and transportation community will also be included, along with profiles of transportation professionals, national and international meeting announcements and summaries of new publications in the field of transportation infrastructure. Before entering into the presentation of this number, I'd like to express our deep thanks to the following distinguished professionals from abroad, who kindly accepted to guide and to support us, as members of the Editorial Board of our journal : **John B. METCALF**, Professor of Civil Engineering at Louisiana State University, from United States of America, **Alex VISSER**, Professor of Civil Engineering at The University of Pretoria, Republic of South Africa and **Paolo PEREIRA**, Professor of Civil Engineering at The University of Minho, from Portugal.

This first issue is opening with a comprehensive view of the transportation engineering, as it exists today and can expect to evolve with the beginning of this new century suggestively entitled: "**Transportation Engineering, actual Status and Future Trends**". This presentation is based on a synthesis of various published papers by internationally recognized experts fully engaged in the progress of transportation engineering, emphasizing the main aspects of future developments of education in the transportation engineering field and the new challenges addressed to the "transportation professionals" and educators.

In their paper, entitled : "**Considerations on the Geometric Design of Low-Volume Roads**", professors **Horia Gh. ZAROJANU** and **Ioana VLAD** , both from Technical University "Gh. Asachi" of Iasi, are presenting the technical, economic and social criteria for justifying the adequacy of the new low-volume roads, in Romania. In accordance with their views, a "strategic policy" design of a local road infrastructure is justified for a minimum 15 years of service life, while a "tactic policy" may be adopted when designing the road structure. The design principles of low-volume roads are presented, taking into account the local conditions, including the ecological ones, emphasizing that both design and construction of new low-volume roads has to be framed into the concept of durable development.

With her study entitled "**Studies of the bitumens behavior at low temperature**", Doctoral student Engineer **Vasilica BEICA**, an outstanding and experienced researcher from the Romanian Center of Road Engineering Studies and Informatics – CESTRIN Bucharest, brings to the attention of the specialists, the different behavior at low temperature of two original bitumens. Beside the positive fact that polymer modification improves breaking properties of both bitumen, she found that modification affects differently the PG performance grade. As in Romania, where the climate is a continental



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one with severe winters and very hot summers the minimum pavement surface temperature is different, depending on the geographical location of the road, in order to achieve high performance and long lasting pavements, she recommends that only bitumen having the proper PG should be used for each specific geographical area. Beside its theoretical and practical importance this study, undertaken as part of a doctoral study, may be considered as an important new step and significant contribution of the author, to the actual process of implementation of the SHRP/ Superpave - Performance Based Specifications for the Asphalt Binders in Romania and in Europe.

After this series, this issue presents other significant research results undertaken in the field of transportation infrastructure engineering.

Thus Dr. Karel Pospisil, from the Czech Transport Research Center (Centrum Dopravního výzkumu-CDV) presents the actual trends of research, emphasizing the reliability, lifespan and safety of transport, imposed by the actual social and economic conditions, characterized by continuing decrease in the amount of material and energy sources. Significant research results, obtained by addressing these trends, in the fields of geotechnics, technology of concrete and non-destructive structures testing are described.

Another young and enthusiast researcher, Joseff Stryk, from the same Czech research institution together with his collaborators, Karel Pospisil, Marta Korenska and Lubos Pazdera, presents a very interesting and efficient "New Non-Destructive Diagnostic Method of Bridges".

The researches P. Ampe, J. De Corte, R. De Vierman from Vakgroep Bouwkunde Laboratorium voor Materiaalonderzoek, Belgium, show that: "dans le cadre de l'étude consacrée aux causes d'affaissement de recouvrements composés de petits éléments, maintes fois constatés sur site, ont effectuées dans le Laboratoire d'étude des matériaux, des essais dynamiques ayant pour objet des revêtements en pavés. Les dommages sont fréquents sur les axes chargés, éventuellement en combinaison accueillant UN trafic lourd, tels les récentes traversées de communes. Les essais en laboratoire avaient comme objectif de simuler un certain nombre de situations critiques potentiellement comparables aux situations sur site et d'observer le comportement du lit et des éléments en de pareilles circonstances. Afin de fonder les observations expérimentales par la théorie, un certain nombre d'essais et de situations de mise en charge furent numériquement simulées sur base de calculs analytiques. Cette approche théorique permet de proposer un certain nombre de formules pour la détermination de la charge maximale. L'article présent traite uniquement de la partie expérimentale. La partie analytique fait l'objet d'une autre contribution."

Finally a young Romanian physicist, Marian Peticila from the Romanian Center for Road Engineering Studies and Informatics – CESTRIN presents in this issue the results obtained by himself and his collaborators professors Vasile Tripadus and Liviu Craciun from the IFIN-HH, on the research focusing on the determination of the carbon/hydrogen ratio in bitumen using a prompt neutron gamma activation analysis. With their paper entitled "Determination of the Carbon/Hydrogen Ratio in Bitumen, Using Prompt Neutron Gamma Activation Analysis", they demonstrate a potential application of PGNA method that "allows fast determination of colloidal index of bitumen compounds by a very fast analysis of hydrogen and carbon content". The H/C ratio thus determined is then correlated with the colloidal index, using a regression analysis.

