Editorial

During the hectic year of 2020, we hope that you and your family well!

With dedication and help from the Associate Editors, the Editorial Board Members, authors and reviewers all over the world, *International Journal of Pavement Research and Technology* (IJPRT) has been making tremendous progress in 2019 and 2020. Based on the latest Scopus records released on 23 June 2020, IJPRT has posted very strong metrics:

CiteScore 2019: 3.1 (the citations received in 2016-2019)

CiteScore: 4.1 (07 December 2020)

SJR 2019 (SCImago Journal Rank): 0.819 (Quartile: promote to Q1)

SNIP 2019 (Source Normalized Impact per Paper): 1.720

Considering the continuous supports and contributions to IJPRT, this Special Issue, entitled “*Sustainable and Innovative Pavement Infrastructure*”, contains 15 Open Access Articles contributed from invited Editorial Board Members located in 11 different countries. All articles are well-written articles with high quality. The brief introduction of the papers are provided below, in order of author name:

Cafiso (Italy) applied an innovative NDT-based sensing unit to gather the vibro-acoustic signatures of road pavements with different deterioration levels of an urban road. Meaningful features were extracted from the acoustic signature and the correlation with the elastic modulus defined using GPR and FWD data was investigated. Chai (Australia) adopted a descriptive-based study approach on the various airport pavement manuals, guidelines and advisory circulars, journal articles, and book publications for the airport pavement management systems (APMSs) applications. The APMSs and the case studies in various airports internationally were included in the review.

Considering the potential benefits in applying polypropylene fiber to stabilize expansive soils and cement treated bases is already been reported in several studies. Chen (USA) incorporated the use of fiber into the Texas Department of Transportation's (TxDOT's) Guidelines for modification and stabilization of soils and base for use in pavement structures. Chen (Taiwan) reviewed design, construction, and performance that could maximize the advantages and minimize the disadvantages associated with the use of porous asphalt concrete (PAC) mixtures. A consolidated review of the worldwide literature on PAC applications was conducted, with attention to the use of PAC in agency practices, and specifications for PAC from the world were evaluated. Chou (Taiwan) determined the relationship between retroreflectivity (R_L) and corresponding image brightness of yellow road markings to evaluate their visibility by analyzing recorded images captured at night. An integrated algorithm was developed to analyze recorded images continuously for identifying road marking brightness 30 m away from a vehicle. El-Badawy (Egypt) assessed the technical viability of using cement dust as part of the fines in the unbound granular base/subbase pavement layers' and subgrade soil as a viable and sustainable solution. The effect of adding cement dust to five types of pavement materials, which were collected from different ongoing roadway construction projects, were investigated.

Since the effects of elastomeric and/or plastomeric polymers have not been accurately identified through conventional tests, Hossain (USA) recommended alternative test method(s), which can be pursued by using a commonly available dynamic shear rheometer (DSR). The efficacies of test methods such as multiple stress creep recovery (MSCR), elastic recovery using a DSR (ER-DSR), linear amplitude sweep (LAS), and binder yield energy test (BYET) were explored in the article. In past studies, the Louisiana Department of Transportation and Development (DOTD) concluded that mixtures with an NMAS of 4.75 mm provided acceptable performance as a surface layer. However, excessive stockpiles of unused smaller aggregates result in an economically competitive source to be considered for asphalt mixtures. Mohammad (USA) developed mixtures with four aggregate types and two binder types. A comprehensive evaluation of performance was conducted through volumetric and mechanistic testing. Saghafi (United Kingdom) investigated the effect of using a recycled stabilizing material as an asphalt modifier on the performance of open-graded friction course (OGFC) asphalt mixtures to minimize the costs and maximize the lifespan while considering sustainability. Recycled Low-Density Polyethylene (R-LDP) was adopted in the investigation. Changes in mixture air void, porosity, draindown, permeability, rut depth, moisture damage and abrasion loss were observed to evaluate the effect. Silva (Portugal) evaluated the addition of commercial and laboratory-produced polymer modified binders as rejuvenators in recycled asphalt mixtures with high contents of reclaimed asphalt pavement material (RAP). Singh (India) investigated the impact of a unique combination of fillers on interfacial bond strength and moisture-induced damage potential of asphalt mastic. One asphalt binder (AC-30), three fillers including Basalt (B), Hydrated Lime (HL), and Nano-Hydrated lime (NHL) were selected to prepare

asphalt mastics for a wide range of filler-binder (f/b) ratio (0.6 to 1.2). Steyn (South Africa) evaluated a few concepts of the hyper-connected pavement environment in a 4 Industrial Revolution (IR) DT mode, with the emphasis on some applications, implications, benefits and limitations. The hyper-connected world could and should be managed in the pavement realm to ensure that adequate and applicable data are collected regarding infrastructure, environment and users to enable a more efficient and effective transportation system to users.

Considering that a high cementitious paste volume (CPV) can increase the early cracking tendency of the concrete and reduce the durability of concrete pavement, Tia (USA) investigated the effects of minimized CPV in slipformed pavement concrete (SPC) with blended aggregates (BA). The performance of pavement concrete with different CPV was evaluated based on the laboratory results. Tighe (Canada) reviewed the potential application of lightweight cellular concrete (LCC) within the pavement structure with a specific application as a subbase and examined the various properties, such as modulus of elasticity, compressive and tensile strength, water absorption, and freeze-thaw resistance necessary for pavement application. Wang (Hong Kong, China) investigated six types of asphalt binders at the nanoscale, assisted with atomic force microscopy (AFM) and scanning transmission electron microscopy (STEM) to perform the morphology of asphaltene microstructures and cross-examination between the surface features and asphaltenes.

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