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REVIEW PAPER

2530 Reproducibility of Pop-Ins in Fracture Test of Heterogeneous Welds and Numerical Assessment of Crack Arrest | Sohei Kanna, Yoichi Yamashita, and Tomoya Kawabata
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The Journal of Testing and Evaluation is published in six issues per year by ASTM International, a nonprofit technical organization that develops and publishes voluntary consensus standards and related information for materials, products, systems, and services. Some issues, in whole or in part, may be Special Issues focused on a topic of interest to our readers. Contributions are peer reviewed prior to publication.

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The editorial objectives of the Journal of Testing and Evaluation is to serve a broad-based audience by:
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- Presenting new methods and data and critical evaluations of these methods and data.
- Reporting the users’ experience with test methods and the results of interlaboratory testing and analysis.
- Providing the scientific basis for both new and improved ASTM International standards.
- Stimulating new ideas in the fields of testing and evaluation.
- Including papers, technical notes, letters to the editor, discussions of previously published papers, and book reviews as contributions.
Overview

The maintenance, rehabilitation, and preservation of transportation infrastructure systems have introduced numerous innovative knowledges and technologies during the last couple of decades, which effectively promote the durability, accelerate the growth, and ensure the sustainability of entire infrastructure systems, especially in highway and airport pavement engineering. Therefore, it is necessary to summarize the recent developments to help transportation engineers and researchers understand this progress. Twenty-seven articles related to the novelty in pavement engineering from two international conferences are published in this special section titled “Sustainable Construction Materials and Frontiers of Road and Airport Engineering.”

The subjects of these papers mainly include sustainability, smart technology, modelling, innovative test techniques, and new materials. The sustainability involved bio-oil material, waste polyethylene, crumb rubber modifiers, and conductive material. The smart technology included self-sensing material and structural health monitoring, as well as solar heat reflective coating for cooling. Finite element simulation, discrete element methods, and naturalistic driving modelling were summarized as the modelling. The innovative test techniques introduced the material rheological property test analyzer, distributed optical sensing technology, wide-area dynamic sensing method, ground penetrating radar, thin film pressure sensor, and moving vehicular loading technique. In addition, the new materials incorporated multi-walled carbon nanotubes, phosphogypsum-based cementitious materials, activated water-washed kaolins, poly-carboxylate superplasticizers, mesoporous hollow silica particles, and layered double hydroxides in this special issue.

The guest editors appreciate the authors’ and the reviewers’ contributions to this special section. The support from Editor-in-Chief Dr. M. R. Mitchell is sincerely appreciated, and the editorial office staff are thanked for their hard work in completing this special section on time.

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