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Editorial

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Welcome to this latest edition of *Construction Materials*. It is my pleasure to introduce a wide range of interesting articles presented in this issue.

The first featured article is a paper by Madurwar and Ralegaonkar (2017) describing the potential of sugarcane bagasse ash as a novel insulator for dwellings. In India, the production of some building materials can consume vast amounts of energy and the disposal of solid waste from agricultural and industrial processes presents a significant disposal problem. Madurwar and Ralegaonkar (2017) assess the feasibility of using sugarcane bagasse ash in brick manufacture. The simulation modelling techniques used by the authors showed that bricks incorporating sugarcane bagasse ash showed lower thermal conductivity and high physical stability when compared to conventional bricks. The work shows there is potential for using waste agricultural material to produce lightweight, thermally efficient building materials from sustainable sources.

Kar *et al.* (2017) present a paper focussing on joint repair systems for pavements. Pavement cracking is a common form of distress seen on the majority of Indian roads. Cracks develop due to various reasons. Crack sealing is important as it slows down the rate of deterioration of pavements caused by water penetration. Kar *et al.* (2017) describe laboratory experiments and field studies of modified asphalt-based crack and joint repair systems in both flexible and rigid pavements.

The third paper in this issue has been written by Wang and Chen (2017). The authors present an investigation of the evaluation of the unconfined compressive strength of cement stabilised Shanghai clay by hardness testing. Shanghai has been subject to rapid economic development and many underground structures have been constructed in soft clay deposits that have a high water content with high compressibility and therefore low strength. To improve safety during underground construction, Portland cement is often used as an additive. Presently, the unconfined compressive strength (UCS) is often used as an indicator of the strength of cement stabilised clay. The unconfined compression test (UCT) test is frequently used as an experimental method to determine the mechanical properties of cement stabilised clay. However, the UCT can be time consuming and there is a need to develop a method to determine the UCS of cement stabilised clay in the field. In conclusion to their work, Wang and Chen propose that a combination of measuring the hardness of soil-cement columns in the field with mathematical modelling, based on laboratory test results, may be used to predict UCS.

In their paper, Abubaker *et al.* (2017) investigate the performance of bitumen protective coatings for buried concrete. Controlling concrete deterioration in situations where concrete is exposed to chemically aggressive conditions with the result that the long term performance and safety of a structure is at risk is of great importance. The damage caused by thaumasite sulfate attack (TSA) has been well documented. Abubaker *et al.* (2017) undertook a series of long term investigations where specimens were exposed for a five test period. According to their analysis, Abubaker *et al.* (2017) concluded that bitumen surface coatings appear to provide an effective way of preventing TSA damage in concrete. However, the authors advise caution as the reliability of protective coatings is highly dependent on the integrity of the coating. Physical damage during construction works could affect the efficacy of such coatings.

The final feature is a discussion on a paper titled '*hybrid anode concrete corrosion protection – independent study*' written by Dodds *et al.* (2017). The discussion comprises contributions from two contributors and the responses from the authors.

On behalf of the Editorial board I hope that readers will enjoy this issue of *Construction Materials*. I have certainly enjoyed reading a wide range of informative and fascinating subject matter outside of my usual area of expertise. I particularly enjoyed Madurwar and Ralegaonkar's paper (2017). I had no idea that 90 million tonnes of sugarcane bagasse was produced annually in India alone. Readers will be familiar with other examples of where scientists have been finding novel uses to use waste materials to produce construction materials as an alternative to extracting natural resources. Finding new uses for the ash from burning this sugarcane bagasse can help us in taking yet another small step towards reducing the amount of waste we produce.

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