Editorial

Mohammed Sonebi MEng, MSc, PhD, PGCHET, FRILEM, MACI, MASTM, Mfib, MISHMII, MCS, MCB DG, MIRE D
Senior Lecturer, Queen's University Belfast, Belfast, UK

Since my first editorial for *Construction Materials* (Sonebi, 2018), I am really enjoying working with the production team, the editorial team Rebecca Rivers, Gene Seabolt and Ben Ramster, of course the members of the Editorial Advisory Panel and also the tremendous volunteer work of the reviewers.

In this issue the journal published five papers whilst diversifying its content to include a wider range of traditional and non-traditional construction materials (e.g. Bio-based buildings materials, self-healing concrete, composites, earthen ramped, construction materials and technologies for sustainability and energy efficiency, etc.). This journal will internationally continue to disseminate and publish the latest research on construction materials for the academia, industry, stakeholders and other audience.

The first paper is related to Bamboo which is a renewable material available worldwide in tropical, subtropical and temperate zones for use in construction, furniture, handicrafts and food. Wagemann and Ramage (2019) reported a Briefing: Bamboo for construction in Pakistan – a scoping review in their paper. It was mentioned that bamboo is extensively used for transitional shelters and as a roofing material for vernacular houses. Despite this, few examples were found in the literature, except for those referring to post-disaster shelters and one case of a school built with bamboo. Despite some barriers to the use of bamboo in construction, this material is seen as an alternative for sustainable material, resilient and low-cost construction that could be used in Pakistan, not only for temporary dwellings but also for permanent construction, if well cut, treated, fabricated and designed and built properly.

In the second paper, Matalkah *et al.* (2019) reported on the development of indigenous binders as construction materials where two classes of indigenous cementitious binders were developed and characterised. They were based on (a) volcanic tuffs transformed into calcium aluminosilicate hydrate binders using lime and soda ash and (b) laterite soil activated with soda ash and lime, using moderately calcined laterite soil as partial replacement for natural laterite soil, where alkali aluminosilicate hydrate and calcite provide the primary binding effects. Various formulations embodying these two strategies

were prepared and subjected to early-age compression tests. The inorganic binders were further investigated using scanning electron microscopy, energy-dispersive X-ray spectroscopy and X-ray diffraction methods. The results of these analyses verified the intended chemical and mineralogical compositions of the indigenous binders and were discussed in this paper.

The third paper by Sahoo *et al.* (2019) is focused on the effect of silica fume (SF) concrete designed as per construction practice on compressive, flexural and tensile splitting strengths. The results of this study are compared with similar results associated with the Portland cement available in the literature. A correlation, in the form of simplified equations, between the compressive, tensile splitting and flexural strengths of SF concrete and Portland slag cement (PSC) is obtained. Ultrasonic pulse velocity (UPV) tests and compressive strength at 28 d (f'_{c28d}) are carried out on all concrete specimens, and a relationship between UPV values and f'_{c28d} is proposed for concrete made with SF concrete PSC.

In the penultimate paper Rojas-Valencia and Aquino (2019) explore recycling of construction wastes for manufacturing sustainable bricks based on three types of wastes generated in the building industry: wood-cutting residues, wastes from the excavation process and recycled aggregates (RA). The paper shows that the nine mixtures offer a technically viable alternative for obtaining sustainable bricks. The integration of RA having a granulometry of 0.95 cm and 0.63 cm to cementitious fines only leads to greater values of compressive strength, around 8 MPa. The use of *Optuni ficus-indica* extract (mucilage) as a natural additive had a favourable impact because it increased the workability of the mixtures and influenced the integration of the materials, which led to enhanced physical characteristics.

The final paper by Rashad (2019) reports on an investigation of the insulating and fire-resistant behaviour of metakaolin (MK) and fly ash (FA) geopolymer mortars to achieve the highest thermal insulation and the lowest carbon dioxide emissions, different geopolymer mortar types with low thermal conductivity, reasonable compressive strength and high fire resistance in comparison with traditional cement mortar. The results

obtained in this investigation show that it is possible to use MK-based and FA-based geopolymer mortars, without adding any foaming agent, as insulation and fire-resistant materials. The paper concluded that MK-based geopolymer mortars had higher fire resistance than FA-based ones, while the FA-based geopolymer mortars had higher thermal insulation than the MK-based mortars. The use of expanded perlite as fine aggregate demonstrated a higher thermal insulation and better fire resistance than siliceous sand.

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