Editorial

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For any research, curiosity is a general starting point. It leads to questions like: can I use this material? How strong is this material? Can this material keep me warm? Or can this material provide some extra cooling? It is exactly these kinds of questions that will be answered later in this issue of *Construction Materials*.

However, as we try to report on progress in scientific understanding and build on our existing knowledge, too often the curiosity of our original questions seems to stop after the initial gathering of information. For the particular material that is investigated the answer is known. A result is being reported. And then it is on to the next question, or so it seems.

In the pool of articles submitted for publication in the journal there seems to be a much smaller number of papers in which a step back has been taken, with some time to reflect on all the data obtained. What is it that can be used beyond the data set that has been studied? What is it that we can add to our understanding at a fundamental level of the behaviour of construction materials?

I truly believe that we can learn much quicker if we would add these extra steps to our initial curiosity-driven questions. Hence, I would like to ask both the authors and the readers to keep this in mind when reading the articles in this issue of *Construction Materials*. And if you think you can add to the discussion, please don't hesitate to submit for publication a short discussion or response to the article you have read. In the current issue of *Construction Materials* there is a lot of testing data to reflect on.

We start this issue with a contribution by Owoyemi and Adeyemi (2021). From two different universities in Nigeria, they take us to the Sandstone Formation of the Northern Bida Basin and the migmatite–gneiss of the Precambrian Basement Complex. More specifically, they look into laterites and lateritic soils that occur through weathering of parent rocks.

This is important, because it is the most common soil occurring in the tropical and subtropical regions of the world, where it serves as common construction and founding material. Laterites develop by intensive and prolonged weathering of the underlying parent rock, usually in alternating conditions of high temperatures and heavy rainfalls. The article presents lots of data with which the authors try to compare the influence the different parent rocks may have on the index and mechanical properties of the lateritic soils.

In the second article of this issue we remain in Nigeria, this time to look at the point load test as an indirect means of measuring the uniaxial compressive strength of rocks. Afolagboye (2021) explains that the uniaxial compressive strength is usually determined from the uniaxial compression of a cylinder-shaped intact rock specimen. However, this test needs a lot of time, is costly and requires a number of properly prepared samples. Furthermore, preparing cylinder-shaped samples is difficult in rock lithologies that are soft or highly fractured.

Again, with a lot of data Afolagboye takes us through his study to use the point load test to estimate the uniaxial compressive test. He focuses his study on rocks from the Precambrian basement complex in south-west Nigeria. These crystalline rocks are quarried for construction purposes like road aggregates, filling and foundation. However, there was not that much information in the literature on these local rocks. With this article that is changed.

For the third article we look at an appropriate material for the upcoming colder winter weather: wheat straw, in the form of compacted bales. This, according to Thomson *et al.* (2021), is increasingly used as thermal insulation in the external walls of buildings. The use of such kinds of materials follows from the need to find more sustainable alternative materials to lower the carbon dioxide footprint of buildings.

Walls from this material may be considered as a simple sandwich panel, with two outer skins of lime render applied directly onto the internal straw insulation. A concern in such cases is the omission of wall cavities, creating possible risks associated with ingress of water on accumulation of condensation within the wall cross-section. The aim of the work presented in this paper was thus to develop understanding of the hygrothermal performance of lime rendered wheat straw bales.

In the paper, Thomson *et al.* present findings from a laboratory study combined with hygrothermal analysis software leading to an empirically better understanding. It is worth noting, as Thomson *et al.* do in their conclusions, that the risk of elevated moisture content within the wall panels is not a unique occurrence and has the potential also to occur in conventional types of wall build up.

The final paper addresses the hot topic of overheating of asphalt concrete pavements. Such pavements can reach temperatures of more than 60°C due to their dark colour in the heat of the summer. This can lead on the one hand to severe road damage, and on the other hand to aggravation of the so-called urban heat islands in cities.

A solution that is investigated by Liang *et al.* (2021) is a new type of active pavement-cooling technology: road coatings. These road coatings consisted of an epoxy resin, to which a functional cooling material was added in the form of an additive, as well as an auxiliary cooling material (here

iron oxide). The cooling coating was brushed on the surface of the asphalt concrete slab and when the cooling coating was fully solidified, the specimen was ready for testing. Please see the article for further details on the data they collected.

And that concludes the four articles for this issue. When taking a closer look at the content, please remember my suggestion to look beyond the currently presented data and results and try to draw your conclusions for a wider range of materials or applications. I look forward to future publications that may include these findings in this journal!

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