Editorial

B. Lothenbach

Laboratory Concrete & Construction Chemistry, Empa, Dübendorf, Switzerland

F. P. Glasser

Department of Chemistry, University of Aberdeen, Aberdeen, UK

This themed issue has as its focus calcium sulfoaluminate cements (CSA). These cements have long evolutionary history but have recently attracted attention because their production emits less carbon dioxide than Portland cement. Of course a successful building material has to meet many criteria but the structural use of CSA cements in China has attracted much attention. The Chinese cements rely mainly on hydration of ye'elemite, ideally $4\text{CaO} \cdot 3\text{Al}_2\text{O}_3 \cdot \text{SO}_3$, for strength gain and thus differ in mineralogy from Portland cement. Despite their structural use in China, CSA cements are used elsewhere mainly in special cement formulations, for example as adhesives and in repair materials, but the feeling has been that these cements have a bright future if only certain disadvantages can be overcome.

The papers in the themes issue were presented at the International Workshop on 'Calcium Sulfoaluminate Cements' organised by F. Winnefeld, B. Lothenbach, A. Telesca and M. Marroccoli in 4–6 June 2018 in Murten, Switzerland, which brought together more than 100 participants. This 2nd part of the dedicated issue incorporates three of the eight papers invited by the Organising Committee. Hargis *et al.* (2019) report on the nature and control of expansive hydration processes. The high water demand of CSA pastes can be used to make self-desiccating formulations and Cau Dit

Coumes *et al.* (2019) report on the development and properties of different formulations. Wolf *et al.* (2019) investigate the hydration of ternary CSA-Portland cement-calcium sulfate systems.

It is apparent that basic and applied work on CSA cements is proceeding at a rapid rate: significant advances are occurring in our understanding of these 'green' binders. As editors, it has been our pleasure to coordinate the themed issues. We thank the referees for their timeous action and the contributors for their rapid and comprehensive response.

REFERENCES

- Cau Dit Coumes C, Farcy O, Antonucci P *et al.* (2019) Design of self-desiccating binders using CSA cement: influence of the cement composition and sulfate source. *Advances in Cement Research* **31(4)**: 178–194, <https://doi.org/10.1680/jadcr.18.00100>.
- Hargis CW, Lothenbach B, Müller CJ and Winnefeld F (2019) Further insights into calcium sulfoaluminate cement expansion. *Advances in Cement Research* **31(4)**: 160–177, <https://doi.org/10.1680/jadcr.18.00124>.
- Wolf JJ, Jansen D, Goetz-Neunhoffer and Neubauer J (2019) Mechanisms of early ettringite formation in ternary CSA–OPC–anhydrite systems. *Advances in Cement Research* **31(4)**: 195–205, <https://doi.org/10.1680/jadcr.18.00115>.