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EDITORIAL

Glass and the energy crisis

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The new year 2023 again appears to be very challenging. Energy supply and energy prices have a large impact in Europe and globally as a result of the condemnable Russian war against Ukraine. As glass production typically requires a 24/7 energy supply throughout the year, different scenarios for a gas shortage had to be prepared by the glass industry. Now, the energy situation is slightly better but the energy shortage made us once again aware that we all waste too much of the resources of our planet. Just like the Corona crisis that fostered, for example, digitalization in teaching and videoconferences for global meetings instead of long travels, the energy crisis now fosters innovation in energy conversion, energy storage, energy efficiency and efficient use of materials. Just like glass was an important material to fight the Corona pandemic (the vaccine vials are one important example) glass continues to be an important part in innovation for the changes we need for a carbon neutral future, for example in solar thermal applications and photovoltaics, but also as a barrier material in the microchip industry as well as in improved thermal insulation products for facades. And new products also require decent engineering to save energy and material for their production and in their final application and use.

In this issue, two papers by Kocer et al. deal with Vacuum Insulation Glazing (VIG), and two papers by Galuppi et al. concentrate on the thermo-mechanical analysis of architectural glass. Rizzo et al. study the performance of cable-supported glass façades under time-depending wind action. This is followed by a numerical study by Hála et al. on low velocity impact of steel on laminated glass. A new type of coloured kilned glass panels and their structural behaviour is part of the work by Silvestru et al. Finally, Abba et al. apply machine learning to calculate a simplified spring stiffness of rubber materials used as supports for glass panels.

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