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QUANTITATIVE EGA ANALYSIS OF H_2O IN SILICATE GLASSES

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The properties and quality of silicate glasses strongly depend on the amount of residual dissolved gases. Thus, the knowledge of the quantitative content of different volatile components is of great relevance within the technical production line. Several applications exist for the detection and quantification of a single gas in glass. Up to now no available technique provides simultaneous and quantitative information on different gases in a single run. We have developed a new technique to detect the most common volatiles (H_2O, CO_2, SO_2, O_2 and N_2) simultaneously and quantitatively in silicate glasses with the help of a modified Netzsch TG/MS system. One characteristic feature of this new method is the direct coupling of a thermo balance and a mass spectrometer without the use of any capillary or skimmer system.

Keywords: *DEGAS, gas analysis, glass, reference material, TG/MS*