
Reconstruction of technology of layered red glass production based on chemical analysis of discovered glass fragment.

Dagmar Galuskova^{*†1}, Hana Kankova², and Dušan Galusek¹

¹Vitrum Lauguricio – Joint Glass Center of the IIC SAS, TnU AD, and FChFT STU, (VILA) – Študentská 2, 911 50 Trenčín, Slovakia, Slovakia

²Alexander Dubček University of Trenčín – Slovakia

Abstract

In the 16th century, the Bohemians have succeeded in preparation of a more stable and colourless glass, which could be etched and cut with significantly less risk of breaking comparing to glass from Murano. Deposits of limestone and silica together with the newfound recipe for preparation of potassium rich flux (potash) enabled Bohemian industrial glass production to flourish. Bohemia's industry boomed, with over 34 factories during the 17th century producing top quality glass products. In the second half of the 19th century, Bohemians eager to expand export and mass-produce glass developed a line of vases in a single colour of opaque glass or in two colour cased glass, where one is ruby red. Reconstruction of technology for red glass, produced in central Bohemia, have been investigated. Glass fragment was found in the central part of the Czech Republic near Havlíčkov Brod, at a site of abandoned workshop producing glass between 18th and 19th Century. SEM EDS/WDS and LA ICP MS have been used to characterize and investigate the glass finding. Examination of a cross section revealed a chromatic layer placed between two colourless glassy phases. In the colourless layer, crystal assemblages of various shapes were identified. This glass compositionally belongs to the group of soda lime silica glasses. LA ICP MS confirmed the presence of manganese, copper together with another metals as cobalt, lead and arsenic in the chromatic layer. The role of particular elements contributing to coloration of intermediate layer and a technology of production of layered glass was discussed.

Keywords: glass, composition

*Speaker

†Corresponding author: dagmar.galuskova@tnuni.sk