Ovidius University Annals of Chemistry Volume 20, Number 2, pp.185-188, 2009

The obtain of digital glass decor using inorganic precursors

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Abstract Alkaline earth metal silicates as well as many polyvalent metal silicates can be obtained through aqueous solution's reactions between an alkaline silicate solution and the solutions of metal salts. The vitrifiation of the oxide compositions, established by the necessary molar ratios for the projected glass, is realized by calculating the concentration of chemical precursors, through their reaction directly on the substrate. The sodium silicate viscosity in aqueous solution and the viscosity of nitrogenated compounds or oxalates necessary in the silicates synthesis are compatible with the necessary viscosity for ink-jet cartridges. The necessary silicates forming reactions were studied directly on the deposition support, so that the functional characteristics of the multicompartment ink-jet cartridges were used. Compositions were realized, in which the coloring effect was obtained with molecular colorants. The vitrifiation and the quality of the obtained thin films were studied through Optical Microscopy and Scanning Electron Microscopy.

Keywords: glass decor, sodium silicate, ink-jet, nanometric pigments.

ISSN-1223-7221