

**04-013**

**A test to simulate the effect of washing on the gloss of ceramic stone dishes**

Mantas, P.(1);

(1) UA;

Washing dishes at home decreases the gloss of stoneware ceramics rapidly, which causes severe market problems for the ceramic producers. Glaze and ceramic producers make several new formulations and firing conditions in order to solve this problem. For any new case, a minimum of 250 washing cycles must be done, which is highly energy and time consuming, particularly where fast responses are needed. Some current test based on the observation of the ceramic surface after 6h in a thermostatic bath (Julabo- model series EH), at high temperature ( $95\pm 3^{\circ}\text{C}$ ), in very alkaline solutions ( $\text{pH}=11-12$ ), can be used to support the development of new glazes and firing schedules, but they are more convenient in the case of porcelain, a ceramic less prone to changes in the chemical composition of the glazes. In the case of stoneware ceramic, where frits are used due to the lower firing temperatures, the reactivity of the glazes in alkaline solution environment is less known and it is important to have information about the kinetics of the process in order to fix the parameters need to simulate the 250 washing cycles. In this work, it was observed the variation of the gloss of stoneware glazes with washing time, keeping constant all other variables. Gloss is lost in a nonlinear way, faster in the beginning of the test and tending to a constant rate for longer time. The behaviour depends on the glaze under test but, for all the studied cases, the loss of gloss after 24h in the bath (Julabo- model series EH) is in good argument with that variation after the washing machine test (250 cycles), which normally last for 2-3 months.