Innovation in the Manufacturing of the Nabataean Pottery

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Abstract
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(Supervisor: Prof. Ziad Al-Saad)

This study aims at investigating and exploring the innovation and creativity in manufacturing of the Nabataean pottery. Thirty one Representative pottery sample were collected from Petra, were chosen for carrying out mineralogical analysis using XRD, Petrographic study were done for the samples using polarized light microscope. The previous analysis revealed that the pottery contains the following mineral phases: Quartz, Calcite, Plagioclase, Hematite, Diopsite, Gelhnite, and mullite. The presence of mullite indicates that the calcite found in the samples was secondary, this results was confirmed by petrographic study. This study revealed that the innovation of Nabataeans in manufacturing this “Eggshell” pottery lies in the careful and precise selection of raw materials, also the selected raw material was free of primary calcite which if presence will cause cracking and shattering to the pottery during firing, inspite the fact that Petra area has Kurnub sandstone which contains high percentage of calcite. Another aspect of innovation lies the ability of the Nabataean potter to create homogeneous firing condition that guarantee an optimum thermal distribution in all parts of the kiln. Also, they
intently add Quartz to the clay past in order to reduce firing shrinkage, because it withstand high firing temperature and help in thermal distribution. Nabataean potters were also able to produce pottery ware with different colors, although the pottery contains a high percentage of iron oxide which cause the color to be reddish, this was achieved by manipulating the kiln firing atmosphere between oxidizing and reducing to produce different colors, which indicate an exceptional knowledge of chemistry.

Key word: Nabataean, Pottery, Innovation, Eggshell, Manufacturing, XRD, Petrographic,