EXPERIMENTAL STUDY OF GAP-FILLING OF ANCIENT COMPLETELY CORRODED COPPER BOWL VIA NANO- POLYMERS

Completely mineralized copper bowl was removed from the burial environment and was preserved without conservation treatment for long time. Corrosion process-induced has created broken and loose parts arising fragility of the object resulted from the burial condition (major factor), post-excavation, poor storage, transport procedures and mishandling. Corrosion products and soil encrustations were characterized by X-ray diffraction and scanning electron microscopy with energy dispersive spectroscopy SEM/EDS. Experimental studies on selected nano-polymers were performed on simulated objects after accelerated aging to modify gap-filling process. Microballoon was used as filler for bulking nano-paraloid B72, nano-primal and nano-veova. They were evaluated by SEM, IR and accelerated thermal aging. Results demonstrate that the use of microballoon in acryloid with fiberglass is the best gap-filling that was used in the reconstruction of the bowl. Veova is considered the best alternative polymer to paraloid B72 for filling gaps.