Introduction

Results of an archaeometric investigation performed on several glass mosaic tesserae from Early Christian basilicas in Albania are presented. The three archaeological sites under investigation are situated in Byllis, Lin and Elbasan and belong to the V - VI century AD. The basilicas’ floors are decorated with colorful mosaics with geometric and floral motifs and scenes from everyday life [1, 2, 3]. The elemental composition of glass and its microstructure reflects the raw materials and the techniques that were employed in its manufacture. A multi analytical approach, which includes optical microscopy, scanning electron microscope equipped with energy-dispersive spectrometry (SEM-EDS), micro X-ray fluorescence and Raman spectroscopy, are used during the investigation.

Materials and methods

For this work a total of 71 glass tesserae, coming from excavations in Lin, Byllis and Elbasan and dating between the end of Vth and beginning of VIth century AD, were analyzed. The glass tesserae had different colour and dimensions smaller than 1 cm x 1 cm.

Acknowledgments

Ms. E. Vataj would like to thank the German Academic Exchange Service, DAAD, for the scholarship that they have granted her. Further thanks are due to the Albanian Institute of Archaeology for the support during the analysis of the samples.

Conclusions

All the samples are soda-lime-silica glasses, with low potash and magnesia. There is a general consensus that glass of this type was made using evaporic sodium carbonates, commonly termed natron. Natron or low-magnesia glass is the compositional type of most Roman and Byzantine glasses, [10].

Micro XRF qualitative results

Images and subtracted Raman spectra of yellow part, green tesserae, Byllis. The identification of Raman signature in the yellow inclusion of the glass tesserae, gives the presence of lead tin yellow type II (PbSn0.5SIO3). [11].

LITERATURE CITED
