A physicochemical study of Medieval and Post-Medieval ceramics from the Aegean

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CHAPTER 10 SCANNING ELECTRON MICROSCOPY

10. INTRODUCTION

In the present study, a representative number of archaeological ceramics was selected for microstructural analysis through SEM. For the study of microstructure, the observation was undertaken on fresh fractured surfaces obtained from the ceramic artifact by using pincers or a chisel, while for its quantitative microanalysis sections of the fragments were mounted in resin and polished. For this reason, to maximize the information gained from analysis, the SEM-EDS was used to investigate the microstructures of 119 fresh fractured samples and 66 polished sections of those fragments in more detail. Special care was given in order to cover the maximum extent of the chemical variability as this was inferred through the bulk chemical analysis of the samples considered. Spectra were collected from the middle of the layers to reduce effects of contamination from surface weathering and diffusion of elements from the glaze layer. From each sample, 4-6 spectra were collected yielding an average result. Analytical totals, typically in the range of 95-99%, were normalized to 100%. Analysis was carried out on sections of samples including body, slip and glaze. The microstructural analysis was performed on carbon coated fresh and polished fractures of the pottery using a FEI, Quanta Inspect D8334 SEM, coupled with EDS in the Institute of Nanoscience and Nanotechnology at NCSR 'Demokritos' in Greece. The SEM was operated at an accelerating voltage of 25kV and the EDS spectra were taken with 100s live time. In particular cases element maps were recorded by sequential acquisition of X-ray data from each pixel of the secondary electron (SE) image areas. The EDS spectra were calibrated using a cobalt standard, and deconvoluted with the phi-rho-z correction procedure using the Oxford Instruments SEM Quant software.

SEM-EDS was used to provide supplementary information to that provided by the petrographic analyses and the others techniques. With this method, the stratigraphic structure of the layers, the distribution of inclusions and colourants and the elemental composition of the ceramics were investigated. Small inclusions, not observable under the optical microscope, and minerals with ambiguous optical properties were identified by SEM. Thus, SEM combined with EDS provided supplemental information for identifying the raw material sources and the techniques used for the surface coatings of ceramics such as slip, paints and glazes. SEM provided valuable information for micromorphological changes that occur during firing, especially in ceramics manufactured with calcareous clay at a high magnification (Cultrone et al. 2001). Thus, the SEM study of the microstructure of archaeological ceramic provided reliable data for assessing the firing conditions, in terms of firing temperature and the atmosphere, which were applied in the ceramic kiln (Holt et al. 1989). For this, the sintering and the vitrification stage of the ceramic micromass was investigated and classified (Maniatis and Tite 1981). In summary, a profound evaluation of the raw materials can be achieved and their behavior under heating can be assessed offering us important details about the ceramic *chaînopératoire* during ancient times (Jeffra 2014).

The obtained results were then compared to those provided by Optical Microscopy (OM) and the mineralogical analysis (XRPD) in order to describe in detail, the technological aspect of the ancient ceramic manufacture. This method described was selected to optimize the range and depth of information that could be obtained from the glazed ceramics under study. In addition, glazes were

chemically characterized using non-invasive handheld portable X-Ray Fluorescence Spectroscopy (pXRF) in combination with Scanning Electron Microscopy (SEM-EDS) analysis of the glazes enabled more detailed investigations of their manufacture.

10. 1 SCANNING ELECTRON MICROSCOPY (SEM-EDS)

Scanning Electron Microscopy (SEM) has been developed in the last decades and among manifold other applications it was extensively used for the investigation of various issues regarding archaeological ceramics. It is quite common to use X-ray microanalytical techniques such as scanning electron microscopy (SEM) coupled with energy dispersive spectrometry (EDS) in the study of archaeological ceramics (Tite and Maniatis, 1981; Freestone & Middleton, 1987; Veniale 1990; Molera *et al.* 1997; Mason and Tite 1997; Dondi et al., 1998a,b; Riccardi et al., 1999; Perez Arantegui *et al.* 1999; Cultrone et al., 2001; Mata et al., 2002; Bauluz et al., 2004; De Benedetto *et al.* 2004). SEM allows for investigating microstructure and micromorphology at considerably higher magnification compared with optical microscopy. The coupled EDS on the other hand facilitates elemental spot analyses of areas down to dimensions of a few micrometers providing in the case of polished sections quantitative or at least semi-quantitative compositions. This allows for examining separately not only the bulk composition of ceramic body, preparation layer and glaze layer but also the composition of particular inclusions, colourants or opacifiers.

Scanning Electron Microscopy provides a high-resolution images of surface topography with excellent depth of field using a highly-focused, scanning (primary) electron beam. The primary electrons enter a surface with an energy of 0.5–25 keV and generate many low energy secondary electrons (Skoog and Leary 1992; Jose-Yacaman and Ascencio 2000; Goodhew et al. 2001; Henson and Jergovich 2001). The intensity of these secondary electrons is largely affected by the surface topography of the sample. An image of the sample surface can thus be generated by measuring secondary electron intensity according to the position of the scanning primary electron beam. In addition to low energy secondary electrons, primary electrons are backscattered and also X-rays are generated. The intensity of backscattered electrons depends on the atomic number of the element within the sampling volume (Egerton 2005). The energy-dispersive analysis of characteristic X-rays (EDS) emitted from the sample provides information about its elemental composition. In the case of a controlled sample geometry, such as a flat and polished surface, quantitative evaluation of the EDS spectra is possible.

10.2 RESULTS AND DISCUSSION OF SEM

10.2.1 PIGMENTS OF THE SAMPLED PIECES FROM CHALCIS IN EUBOEA

The colourants of **green colour** of Splashed Ware sample (CH89) are Cu (0.8%) and Fe (1%). The colourant of **yellow colours** of samples of Maiolica (CH154), Splashed Ware (CH89) and Lustre Ware (CH110) is Fe (0.8-1%). The colourant of **brown colour** of Didymoteicho Ware sample (CH135) is Fe (3.1%). The colourants of **blue colour** of Maiolica sample (CH154) are Fe (1.1%), Co (0.61%) and Ni (0.5%). The colourants of **turquoise colour** of Glazed Frit Ware sample (CH106) are Cu (0.9%), Fe (0.5%) and Sn (6.8%) (Figures 154,161). The colourant of **dark colour** of Didymoteicho Ware sample (CH135) is Fe (3.6%). Furthermore, the addition of Zn is noticed in samples of Lustre Ware (CH110) Sn 5%; Glazed Frit Ware (CH106) Sn 7%; and Glazed Frit Ware (CH109) Zn ~2% (Table 38) (Panagopoulou et al. 2021b,c).

10.2.2 PIGMENTS OF THE SAMPLED PIECES FROM THE ATHENIAN AGORA IN ATTICA

The colourants of **green colours** of fragments of Polychrome Painted Ware/Maiolica, Polychrome Sgraffito Ware, Green and Brown Painted Ware and Monochrome Glazed Ware are Cu (0.5-16.7%) and Fe (0.7-6.3%) (Figure 158). Two greens only have different recipes and specifically Polychrome Painted Ware/Maiolica (AAG29) with Fe (1.13%), Cu (0.51%), Co (0.4%) and Green and Brown Painted Ware (AGBZY854) with Fe (6.3%), Cu (16.7%), Mn (10.1%). A small amount of Mn is presented also at sample Polychrome Sgraffito Ware (AGBZY829). Dark greens have Cu>2% as an example Polychrome Sgraffito Ware (AAG37) with Cu 2.8% and Green and Brown Painted Ware (AGBZY854) with Cu 16.7%. In conclusion, three different green colour recipes were noticed in the pottery collection of the Athenian Agora in Attica (Figures 158,166).

The colourant of **yellow colours** of Polychrome Painted Ware/Maiolica, Maiolica, Green and Brown Painted Ware, Monochrome Glazed Ware and at a pottery waster is Fe (0.7-2.9%). Two different recipes were noticed in Polychrome Painted Ware/Maiolica sample (AGBZY862) with Cu (0.3%), Mn (0.1%) and in Polychrome Painted Ware/Maiolica sample (AGBZY863) with Cu (0.4%) apart from Fe (Figure 159). As a result, both of them have a greenish yellow. As a result, three different yellow colour recipes were noticed in the pottery collection from the Athenian Agora in Attica. Finally, the colourant of **orange colour** of Maiolica sample (AAG70) is Fe 1.7%. The colourant of **brown colours** of fragments of Polychrome Painted Ware/Maiolica, Polychrome Sgraffito Ware, Monochrome Glazed Ware, Maiolica and at a pottery waster is Fe (3.3-6.2%) (Figure 156). Another different recipe noticed in fragments of Polychrome Sgraffito Ware (AGBZY828) with Fe (1.2%), Cu (0.6%) and Polychrome Sgraffito Ware (AAG37) with Fe (4.1%) and Cu (1.2%). The second one presents a darker brown colour than the first one as it has a higher amount of Fe. Finally, **brown line** of Maiolica sample (AAG70) is due to Mn (1.4%) and Fe (0.9%). In conclusion, two different brown colour recipes were noticed and one recipe for

brown lines in the pottery collection from the Athenian Agora in Attica (Figure 156) (Panagopoulou et al. 2019b).

The colourants of **blue colours** of fragments of Polychrome Painted Ware/Maiolica, Spanish Lustre Ware and Maiolica are Fe (1.3-2.7%) and Co (0.4-0.6%) (Figure 153). Another different recipe was presented at Polychrome Painted Ware/Maiolica sample (AAG29) with Fe (1.3%), Co (0.5%) and Cu (0.14%). In conclusion, two different recipes for blue colour were noticed in the pottery collection from the Athenian Agora in Attica. In addition, the colourants of **turquoise colour** of Maiolica sample (AAG70) are Fe (1.5%) and Cu (1.8%) (Figure 154).

The colourants of **dark colour** of samples of Green and Brown Painted Ware (AGBZY847) are Mn (1.4%), Fe (0.5%), but dark colour of Green and Brown Painted Ware (AGBZY854) is only Fe at a high amount 2.4%. In conclusion, two different recipes for dark colour were noticed in the pottery collection from the Athenian Agora in Attica (Figure 155; Table 43).

10.2.3 PIGMENTS OF THE SAMPLED PIECES FROM THE CASTLE OF MYTILENE IN LESVOS

The colourants of **green colours** of fragments of Polychrome Sgraffito Ware, Polychrome Marbled Ware, Kütahya Ware, Iznik Ware, Maiolica and Porcelain are Cu (0.2-2.4%) and Fe (0.6-2.1%) (Figure 158). Apart from Iznik Ware sample (MYT168) that contains also Sn (4.1%). Dark green pigments have Cu >2%. In conclusion, the potters followed the same recipe for green colour.

The colourant of **yellow colours** of Kütahya Ware fragments (MYT181, MYT242) is Fe (0.6-0.9%). The colourant of **red colours** of fragments of Polychrome Marbled Ware, Monochrome Glazed Ware, Kütahya Ware, Iznik Ware and Porcelain is: Fe (0.6-5.2%). But, in samples of Kütahya Ware (MYT183) Fe (1%), Mn (0.8%) and of Iznik Ware (MYT214) Fe (0.6%), Cu (0.4%), Sn (2.9%) were observed (Figures 160,162). In conclusion, three different recipes for red colour were noticed in the pottery collection from the Castle of Mytilene in Lesvos. Regarding **brown colour**, three brown colour recipes were noticed in fragments of Polychrome Sgraffito Ware, Maiolica, Kütahya Ware and Porcelain. In the first recipe, the main colourant is Fe (1.3-3.4%). The second recipe was noticed in the Polychrome Sgraffito Ware sample (MYT209) with Fe (0.7%), Mn (1.8%). Finally, the third recipe was noticed in Kütahya Ware samples of (MYT183) with Co (0.4%), Fe (1.3%), Mn (1.8%) and of Porcelain (MYT185) with Co (0.5%), Fe (1.2%), Mn (2.3%) (Figures 156,166).

To continue with, four **blue colour** recipes were noticed in fragments of Polychrome Painted Ware, Kütahya Ware, Miletus Ware, Iznik Ware, Maiolica, Porcelain and Glazed Frit Ware (Figures 153,161). The first blue colour recipe with Co (0.4-1.4%), Fe (0.5-2%) was observed in samples of Polychrome Painted Ware (MYT215), Kütahya Ware (MYT241), Iznik Ware (MYT168; MYT170), Maiolica (MYT227, MYT236) and Porcelain (MYT223). In Porcelain sample (MYT223), two different blue hues are extant; light blue with Co (0.5%), Fe (0.7%) and dark blue with Co (1.4%), Fe (1.2%). The second recipe for blue colour is the use of Cu 0.2% with Sn 2.8% without Co for a light blue to turquoise colour as it was observed in Iznik Ware sample

(MYT214). The third blue colour recipe is the combination of Co (0.14-0.5%), Cu (0.3-1%), Fe (0.8-2%), as it was observed in samples of Kütahya Ware (MYT184, MYT188, MYT242) and of Glazed Frit Ware (MYT182). Kütahya Ware sample (MYT184) contains also Sn (5%). The fourth blue colour recipe is sample Porcelain (MYT185; MYT221) that contain Co (0.2%), Mn (0.3%) for a light blue colour. Finally, three different recipes were noticed for **dark blue lines**. The dark blue line of Polychrome Painted Ware sample (MYT215) has Co (0.5-0.9%), Mn (0.7-2.3%), Cr (5.6%) and Fe (2.7%). The second recipe is the dark blue line of Kütahya Ware (MYT179) which has Cu (2%), Mn (0.4%), Cr (0.7%), Fe (0.8%). The third one was observed in Miletus Ware sample (MYT167) with Co (1.6%), Cr (0.6%), Fe (5.8%), Ni (2.8%) and Zn (1.3%). Two recipes for **turquoise colour** were noticed in the case of the Mytilene pottery collection (Figure 154). The colourants of turquoise colours of fragments of Kütahya Ware (MYT179) are Cu (0.9%), Fe (0.5%) and of Monochrome Glazed Ware (MYT200) are Cu (1.4%), Fe (5.4%). Both of them have the same recipe but turquoise colour of Monochrome Glazed Ware sample (MYT200) contains also Ti (57%), Zn (5%) and as a result this colour has a more intense hue than sample MYT179. The second recipe is Kütahya Ware (MYT230) with Cu (4.9%), Co (0.3%) and Fe (0.7%) (Panagopoulou et al. 2019c; 2021a).

The colourants of **dark colour** of Miletus Ware sample (MYT226) are Fe (2.7%), Mn (0.3%) and Cr (8.6%). **Dark lines** came from four different recipes. At the first recipe, the colourants of the dark line of Kütahya Ware sample (MYT188) are Fe (2.2%), MnO (0.4%), Cu (2.1%), Cr (4.1%). The second recipe was used for the dark line of Kütahya Ware sample (MYT230) with Fe (1.2%), Cu (3.2%), Cr (0.4%) and Co (0.3%). At the third recipe, the colourants of the dark line of Miletus Ware sample (MYT204) are Fe (1%) and Cr (1.5%). Finally, the fourth recipe of the dark line of Iznik Ware sample (MYT170) is due to Fe (0.8%), Co (0.7%), Cr (0.3%) and Sn (2.6%) (Figures 155,162).

Three recipes are also noticed in reference to **purple colours** (Figure 157). The first recipe was noticed in Monochrome Glazed Ware sample (MYT200) with Fe (2%), Cu (0.6%), Co (0.4%), Zn (2.9%) and Ti (31.14%). The second one was noticed in Kütahya Ware sample (MYT179) with Fe (0.9%), Mn (1.5%), Co (0.3%) and Cr (0.9%). Finally, the third one in Kütahya Ware sample (MYT179) with Fe (0.8%), Mn (1.5%), Co (0.4%) and Cu (0.2%) (Tables 47,48).

10.2.4 GLAZES OF THE SAMPLED PIECES FROM CHALCIS IN EUBOEA

The correlation of the SiO_2, AlO_3, CaO for the glazes from Chalcis in Euboea proved clearly the different chemical composition of local and imported pottery. Specifically, the glazes of local pottery Champlevé Ware, Monochrome Glazed Ware, Slip-Painted Ware and Plain Glazed Ware appeared at the same area in the plot in contrast to imported pottery Didymoteicho Ware, Maiolica, Zeuxippus Ware and Lustre Ware (Figure 167; Table 39). Moreover, all pottery samples from Chalcis are typically lead glazes with a small amount of alkalis (CaO, K_2O, Na_2O) (Figure 165). The difference appeared at imported Maiolica sample which has a lead glaze with a higher amount of K_2O 5%. In general, Maiolica sample has less amount of lead and higher amount of alkalis than other imported glazes. Furthermore, it does not contain SnO at all. As well as Lustre Ware sample

(CH110) contains SnO ~5% and Glazed Frit Ware sample (CH106) SnO 7%. Tin oxide (SnO) offers a good combination of opacity and insolubility in glazes. Moreover, Glazed Frit Ware sample (CH106) contains also ZnO 1.3%. Zink oxide (ZnO) increases the brightness of the glasses in small quantities and in combination with Al_2O_3 increase the coverage and brightness of the enamels. In conclusion, Didymoteicho Ware sample (CH135) contains TiO_2 0.3% in dark colour. Titanium dioxide (TiO_2) gives whiteness and opacity to glazes due to its tendency to crystallize when cooling down.

Specifically, according to the analyses of the **polished samples from Chalcis in Euboea** at the local pottery glazes of fragments of Champlevé Ware, Monochrome Glazed Ware, Slip-Painted Ware and Plain Glazed, the results are the following: PbO ~40%, CaO<1%, K_2O<1% and Na_2O<1%. The analyses of the polished imported glazes in Chalcis of fragments of Didymoteicho Ware, Maiolica, Zeuxippus Ware and Lustre Ware resulted in the following data: PbO ~30%, CaO 1-2%, K_2O ~2% and Na_2O<1%. Lustre Ware sample also contains SnO<5%. Imported Glazed Frit Ware (MYT106) contains PbO ~13%, CaO<4%, K_2O<8%, Na_2O<9% and SnO~7% (Panagopoulou et al. 2021b,c). According to the analyses of the **fresh fractured samples from Chalcis** local pottery glazes of fragments of Champlevé Ware, Incised Sgraffito Ware, Monochrome Glazed Ware, Splashed Ware, Slip-Painted Ware and Plain Glazed Ware the percentage of elements are the following: PbO ~40%, CaO 2-3%, K_2O 1-2% and Na_2O<1%. According to the analyses of fresh fractured samples of Chalcis imported pottery glazes of Polychrome Marbled Ware, Roulette/Veneto Ware and Lustre Ware the results are the following: PbO ~45%, CaO 1-2%, K_2O ~1% and Na_2O<1%. Imported Glazed Frit Ware sample (MYT109) contains PbO ~23%, CaO ~8%, K_2O ~1% and ZnO<2% and imported Polychrome White Ware sample PbO ~28%, CaO<6%, K_2O ~1% and Na_2O<3%. According to the glazes of the local pottery from Chalcis, the ratio Si:Al is 25:6 and the percentage is 4%. Furthermore, the fluxes Ca, K, Na have the ratio 1:0.6:0.4 and the percentage 5.4% (Appendix IX).

To sum up, regarding the decoration, the motifs were designed on the slip and the pigment oxides were added in the glaze at Champlevé Ware, Frit Ware, Monochrome Glazed Ware, Incised Sgraffito Ware, Roulette/Veneto Ware and Plain Ware but at the other pottery typologies the pigments were added on the slip. All of them seemed to have underglaze decoration (Figures 163,164).

10.2.5 GLAZES OF THE SAMPLED PIECES FROM THE ATHENIAN AGORA IN ATTICA

The correlation of the SiO_2, AlO_3, CaO for the glazes from the Athenian Agora in Attica proved clearly the different chemical composition of local and imported pottery. Specifically, local pottery Polychrome Painted Ware/Maiolica and Polychrome Sgraffito Ware and some of pottery wasters appeared in the same area in contrast to imported pottery Maiolica, Spanish Lustre Ware and the rest of pottery wasters (Figure 168; Table 43). All pottery samples from the Athenian Agora are typically lead glazes with a small amount of alkalis (CaO, K_2O, Na_2O). The difference appeared at imported Maiolica sample which has a lead glaze with a higher amount of K_2O 6%. In general, Maiolica sample has less amount of lead and higher amount of alkalis than other imported pottery

types. Moreover, this sample does not contain SnO at all. In conclusion, Polychrome Sgraffito Ware fragment (AGBZY860) contains $TiO_2$0.4%, Polychrome Painted Ware/Maiolica fragments (AGBZY829, AAG30) TiO_2 0.4%, Green and Brown Ware (AGBZY853) fragment TiO_2 1% and pottery wasters (AGBZY827, AGBZY859, AGBZY868) TiO_2 0.2-0.8%. Titanium dioxide (TiO_2) gives whiteness and opacity in glazes and this is due to its tendency to crystallize during cooling.

According to the analyses of the **polished samples from the Athenian Agora in Attica**, local glazes of fragments of Polychrome Painted Ware/Maiolica, Polychrome Sgraffito Ware and some Pottery wasters consist of PbO ~40%, CaO ~3%, K_2O ~3% and Na_2O<1%. Spanish Lustre Ware contains PbO ~44%, CaO ~1%, K_2O<1% and Na_2O<1% and Maiolica PbO ~20%, CaO ~3%, K_2O~6% and Na_2O<2% (Panagopoulou et al. 2019b). According to the analyses of **fresh fractured samples from the Athenian Agora in Attica,** local glazes of fragments of Polychrome Painted Ware/Maiolica, Incised Sgraffito Ware, Monochrome Glazed Ware, Zeuxippus Ware Subtype, Green and Brown Painted Ware and Slip-Painted Ware consist of PbO<40%, CaO<2%, K_2O<2% and Na_2O<1%. Imported Maiolica contains PbO~20%, CaO~3%, K_2O<7% and Na_2O~1%. Regarding to the glaze of local pottery from the Athenian Agora, the ratio Si:Al is 34:6 and the percentage is 8%. The fluxes Ca, K, Na have the ratio 2:3:0.6 and the percentage 1.8% (Appendix IX).

In conclusion, regarding the decoration, the motifs were designed on the slip and the pigment oxides were added in the glaze of Monochrome Glazed Ware, Plain Ware and Zeuxippus Subtype but at the other pottery typologies the pigments were added on the slip. All of them seemed to have underglaze decoration.

10.2.6 GLAZES OF THE SAMPLED PIECES FROM THE CASTLE OF MYTILENE IN LESVOS

The correlation of the SiO_2, AlO_3, CaO for the glazes from the Castle of Mytilene in Lesvos proved clearly the different chemical composition of local and imported pottery. Specifically, the glazes of fragments of Porcelain and one Kütahya Ware (MYT183) appeared in a different area than all the others. Furthermore, another group with local pottery fragments of Polychrome Painted Ware and Monochrome Glazed Ware appeared, as well as close to them imported pottery Kütahya Ware, Iznik Ware, Miletus Ware, Glazed Frit Ware, Maiolica and the one Porcelain (MYT221). Only one sample of Monochrome Glazed Ware (MYT200) appeared at a different area in contrast to all the above (Figure 169; Table 49). The analysed glazes from the Castle of Mytilene in Lesvos have mainly lead glaze and sometimes a small amount of alkalis. Polychrome Painted Wares are soda lead glaze. Furthermore, there are two Monochrome Glazed samples (MYT200, MYT201) that have alkali glazes without lead and they are imported. A wonderful variation was noticed in imported glaze recipes. Specifically, Kütahya Ware samples have lead alkali glaze apart from one sample that is an alkali glaze (imitation that made in the Castle of Mytilene in Lesvos); Iznik Ware samples have lead alkali glaze; Miletus Ware samples have soda alkali glazes; Glazed Frit Ware sample has lead alkali glaze; Maiolica sample has a lead alkali glaze; Porcelain samples have an alkali glaze; and Overfired Stoneware sample has an alkali glaze. Moreover, the percentage of lead

is quite lower at imported ceramics than local ceramics. In conclusion, Iznik Ware fragments (MYT168, MYT170, MYT214) contain SnO 1.3-2.4% as well as Kütahya Ware sample (MYT184) SnO ~3%. Tin oxide (SnO) offers a good combination of opacity and insolubility in glazes. This is due to the fact that it is suspended in the glassy mass with the form of well dispersed fine particles. Moreover, Monochrome Glazed Ware samples (MYT200) in blue, turquoise colours contains ZnO>5% and at purple colour ZnO 3%. Zink oxide (ZnO) increases the brightness of the glasses in small quantities and in combination with Al_2O_3 increases the coverage and brightness of the enamels. In conclusion, Porcelain (MYT186, MYT221, MYT222) contain $TiO_2$0.2-0.5% and Monochrome Glazed Ware (MYT200) at turquoise colour TiO_2 57% and at purple colour TiO_2 31%. Titanium dioxide (TiO_2) gives whiteness and opacity in glazes and this is due to its tendency to crystallize during cooling.

Specifically, according to the analyses of the **polished samples from the Castle of Mytilene in Lesvos**, local glazes of fragments of Polychrome Sgraffito Ware and Polychrome Marbled Ware contain PbO ~42%, CaO<1%, K_2O<1% and Na_2O<1% and they are lead glazes. Whereas, fragments of Polychrome Painted Ware consist of PbO~14%, CaO<1%, K_2O ~1% and Na_2O 11% which is a soda lead glaze and Monochrome Glazed Ware samples (MYT201) consist of CaO ~3%, K_2O<1% and Na_2O <6% which is an alkali glaze without lead. Imported Kütahya Ware fragments contain PbO~16%, CaO<3%, K_2O<1% and Na_2O<7% and they have lead alkali glazes. One sample of Kütahya Ware (MYT183) is an alkali glaze which contains CaO ~6%, K_2O<3% and Na_2O<2%. Iznik Ware fragments contain PbO~27%, CaO<2 %, K_2O<1% and Na_2O<5%, SnO ~2% and they are lead alkali glazes. Miletus Ware fragments contain PbO ~20%, CaO<1 %, K_2O<2% and Na_2O<9% and they are soda alkali glazes. Glazed Frit Ware sample contains PbO ~20%, CaO<3%, K_2O<2% and Na_2O<7% which is a lead alkali glaze. Maiolica samples contain PbO ~26%, CaO ~2%, K_2O<4% and Na_2O~1% which is also a lead alkali glaze. Porcelain samples contain CaO<7%, K_2O<3% and Na_2O<4% and they have alkali glaze. Finally, Overfired Stoneware sample contains CaO ~30%, K_2O ~0.7% and Na_2O ~0.2% which is an alkali glaze (Panagopoulou et al. 2019c; 2021a). According to the analyses of **fresh fractured samples from the Castle of Mytilene in Lesvos** local pottery glazes of fragments of Polychrome Sgraffito Ware, Polychrome Marbled Ware, Polychrome Painted Ware, Monochrome Glazed Ware and Painted Ware, the results are the following: PbO ~45%, CaO~1%, K_2O ~0.7% and Na_2O ~0.9 %. Imported Kütahya Ware fragments contain PbO ~35%, CaO~3 %, K_2O ~1.5% and Na_2O ~5%, apart from sample MYT183 that does not contain Pb at all and it contains CaO ~7 %, K_2O ~2.6% and Na_2O ~2%. Imported Iznik Ware fragments contain PbO ~30%, CaO<2 %, K_2O<1% and Na_2O ~2%. Imported Porcelain samples contain CaO<4 %, K_2O ~2% and Na_2O<9%. Imported overfired stoneware sample contains CaO ~30%, K_2O<1% and Na_2O<1% which is a high calcium glaze without lead at all. Roulette/Veneto Ware sample contains PbO 49%, CaO ~1% which is a quite pure high concentration lead calcium glaze. Finally, Miletus Ware samples contain PbO ~24%, CaO<3%, K_2O<1% and Na_2O ~2%. Regarding to the glaze of local pottery from the Castle of Mytilene in Lesvos, the ratio Si:Al is 21:7 and the percentage is 7%. The fluxes Ca, K, Na have the ratio 1:0.5:1 and the percentage 4% (Appendix IX).

To sum up, regarding the decoration, the motifs were designed on the slip and the pigment oxides were added in the glaze at Monochrome Glazed Ware, Frit Ware, Porcelain and the Zeuxippus

Subtype. All the other pottery typologies, the pigments were added on the slip with a brush or similar tool on slip and also a red coloured slip at some points was noticed in the Castle of Mytilene in Lesvos (Figures 163,164). All of them seemed to have underglaze decoration. A nice example of overglaze decoration by the potter who maybe changed his/her opinion or made a mistake as it was noticed in sample MYT183 (Figure 163).

10.2.7 SLIP LAYERS OF THE SAMPLED PIECES FROM CHALCIS IN EUBOEA, THE ATHENIAN AGORA IN ATTICA AND THE CASTLE OF MYTILENE IN LESVOS

Slip played multiple roles in pottery construction and decoration of the ceramics under study. It was used as an adhesive for attaching appendages to the body of a vessel. It was also applied for decorating the surface of a vessel. When used as decoration, slip is applied like paint, with a brush or similar tool. Unlike paint, however, slip has the advantage of bonding with the surface of the clay vessel and thus offering more long-standing adhesion. According to **slips of ceramics from Chalcis in Euboea**, the percentage of Fe is quite low about 5%. The ratio Ca:Fe is 4:5 and the percentage is 0.8%. The fluxes Ca, K, Na have the ratio 4:4:1 and the percentage is 0.8%. According **to slips of ceramics from the Athenian Agora in Attica,** the percentage of Fe is low about 3%. The ratio Ca:Fe is 4:3 and the percentage is 1.2%. The fluxes Ca, K, Na have the ratio 4:5:0.5 and the percentage is 1.5%. According to **to slips of ceramics from Mytilene in Lesvos,** the percentage of Fe is low about 1%. The ratio Ca:Fe is 11:5 and the percentage is 2.7%. The fluxes Ca, K, Na have the ratio 11:5:5 and the percentage 1.4%. The layer of slip was observed in all types of pottery apart from fragments of Polychrome White Ware, Glazed White Ware II, Glazed White Ware IV, Glazed Frit Ware, Porcelain and Overfired Stoneware that they do not have this layer. Furthermore, glaze diffusion existed at some slip layers. Finally, significant difference was observed in the slip layers of Iznik and Kütahya Ware fragments. Iznik Ware sherds contain SiO_2 80%, CaO 2.7%, Na_2O 2.5%, K_2O 0.6% and Kütahya Ware sherds SiO_2 71%, CaO 3.2%, Na_2O 2.3%, K_2O 1.6% (Tables 40,44,50). Both of them are fine, white slip of a quartz-frit type which is used as a ground for the painted decoration.

As it was observed in all samples, slip layers are more compact than the bodies that have porosity in their structure (Figures 161,162,163,164). The optical microscopy images suggest that the thicknesses of the surface layers are not uniform. Slip is a very compact structure with no voids and a greater degree of sintering compared to the body. This indicates that the slips were applied to body surfaces in a form of suspension in order to make a uniform slip layer. The slip layers are observed not only on open wide surfaces, but also on inner curved surfaces. These data clearly indicate that finer slip, with or without colourant and fluxes, was used for producing the slip applied on the body. Additionally, no cracks were observed on samples, which shows there was no mismatch between the thermal expansion coefficients of the bodies and the slip. The colour of the slip on all samples is different from the colour of the body as it is a quite pure white colour with few impurities of Fe. The iron content in the slip is less than that of the bodies; therefore, it is reasonable to think that the potter avoided using additional iron-bearing minerals in the slip. Also, the Na and K values of the slip are similar or sometimes higher than of the bodies as it was observed in the slips of Mytilene samples. This indicates that Ca-, Na- and K-bearing minerals (such as Na_2O and K_2O) were used as deflocculants during the preparation of the suspension for

the surface application. In addition, oxides of Na and K act like flux in the batch, helping to form the sintered and slip. This also explains the higher Na and K ratios. The optical microscopic images of the slip obtained from all samples indicated that a very compact and uniform structure, with a larger degree of sintering compared to the body, was formed over the vessels. The difference between the colours of these layers and of the bodies clearly indicates that finer clay fluxes and sometimes colourants, were used in the production of the slip than for the bodies.

10.2.8 CERAMIC FABRICS OF THE SAMPLED PIECES FROM CHALCIS IN EUBOEA, THE ATHENIAN AGORA IN ATTICA AND THE CASTLE OF MYTILENE IN LESVOS

The correlation of the SiO_2, AlO_3, CaO+MgO for the **body fabrics from Chalcis in Euboea** proved clearly the different chemical composition of local and imported pottery. Specifically, the body matrixes of local pottery fragments of Champlevé Ware, Monochrome Glazed Ware, Slip-Painted Ware and Plain Glazed Ware appeared at the same area in the plot in contrast to imported pottery fragments of Maiolica, Zeuxippus Ware and Glazed Frit Ware and Lustre Ware. The raw materials of Didymoteicho Ware samples have chemical affinities with local pottery (Figure 170). The fabrics of samples from Chalcis are quite chemically homogeneous and have an intense red colour as it was observed in fragments of Champlevé Ware, Incised Sgraffito Ware, Monochrome Glazed Ware, Splashed Ware, Slip-Painted Ware, Plain Glazed Ware, Unglazed Plain Ware, A8A Amphora, Günsenin 2 Amphora and Günsenin 3 Amphora. According to imported pottery, two types of fabrics were observed. Specifically, imported ceramic Didymoteicho Ware, Polychrome Marbled Ware, Roulette/Veneto Ware, Zeuxippus Ware, Lustre Ware have also red fabric with a higher amount of Fe than Maiolica, Polychrome White Ware, Glazed White Ware II, Glazed Frit Ware, Frit Ware that have white fabric with a lower amount of Fe. The amount of Ca is proportional with the amount of Fe (Panagopoulou et al. 2021b,c). The average of Ca in local fabrics was about 5%. The average of Ca in imported fabrics was at Didymoteicho Ware 5%, Maiolica 26%, Zeuxippus Ware 9%, Lustre Ware 18% and Glazed Frit Ware 1%. Glazed Frit Ware fabric has also less amount of Fe <1% (Figures 173,174; Table 41). The ratio Ca/Fe is 0.7%. The fluxes Ca, K, have a similar percentage and the Na is quite lower Ca:K:Na is 5:4:1 and the ratio is 1.2%. Concerning imported ceramics, some fabric recipes is of a great interest in Chalcis in Euboea. Specifically, Frit Ware sample CH147 with SiO_2 72%, CaO 4%, K_2O 1.8%, is an alkali fritware in contrast to Glazed Frit Ware sample CH106, with SiO_2 86%, CaO 1.2%, Na_2O 1.9%, K_2O 1.1%, PbO ~1% which is a lead alkali fritware. The first fabric recipe was an Iranian alkali frit recipe was due to the type of alkali used and the second one was an Ottoman frit recipe as the Lead is well-known to be used in the Ottoman Empire. Only Frit Ware sherds have CaO<6% in ir fabric. At Chalcis samples, Champlevé Ware with T 1050-1150 ^oC, Incised Sgraffito Ware with T 850->1150 ^oC, Glazed Frit Ware, Frit Ware with T>1050 ^oC and Didymoteicho Ware with T>1050 ^oC have Intermediate to Total Vitrification. Samples of Zeuxippus Ware with T 1050-1150 ^oC and Polychrome Marbled Ware with T 1050-1150 ^oC have Intermediate Vitrification. Samples of Maiolica with T 950-1050 ^oC and Lustre Ware with T 950-1050 ^oC have Extensive Vitrification. Samples of Glazed White Ware II and Polychrome White Ware with T 800-850 ^oC has Initial Vitrification. Samples of Roulette/Veneto Ware with T 850-950 ^oC and A8A Amphora with T 800-900 ^oC have Initial Vitrification to Extensive Vitrification, whereas samples of Günsenin 2 Amphora and Günsenin 3 Amphora are in Extensive Vitrification stage with T 850-1050 ^oC.

Samples of Splashed Ware, Slip-Painted Ware and Monochrome Glazed Ware with T 850-1150 ^{o}C have Extensive to Intermediate Vitrification. Finally, Plain Glazed Ware sample with T 850-1050 ^{o}C has Extensive Vitrification and Unglazed Plain Ware sample with T>1050 ^{o}C has Intermediate to Total Vitrification (Figure 182, Tables 53,56).

In conclusion, the Günsenin 2 Amphora and Günsenin 3 Amphora have a more knowledgeable technology construction than A8A Amphora. Isolated pores in the clay matrix exist in all clay bodies. A sophisticated fabric technology construction with high vitrification stages was followed by potters in Chalcis in Euboea (Figures 179,182,184) (Panagopoulou et al. 2019a)

The correlation of the SiO_2, AlO_3, CaO+MgO for the body **fabrics from the Athenian Agora in Attica** showed some differences between the chemical composition of local and imported pottery. Specifically, local pottery fragments of Polychrome Painted Ware/Maiolica, Polychrome Sgraffito Ware, Monochrome Glazed Ware and pottery wasters appeared in the same area. In another area, there is another group of pottery fragments of Green and Brown Painted Ware sherds with a pottery waster (Panagopoulou et al. 2019b). Spanish Lustre Ware sample has chemical affinities with local pottery but Maiolica sample is quite different (Figure 171). The fabrics of samples from the Athenian Agora in Attica are pale red colour and as an example Polychrome Painted Ware/Maiolica, Polychrome Sgraffito Ware, Incised Sgraffito Ware, Green and Brown Painted Ware, Monochrome Glazed Ware, Zeuxippus Ware Subtype, Slip-Painted Ware and at Pottery wasters. Regarding imported wares, Spanish Lustre Ware sample has a red clay matrix whereas Maiolica sample has a white clay matrix. According to the analysis the fabric is chemically quite homogeneous. The amount of Ca is quite higher than the amount of Fe but they are in proportion. The average of Ca in local body fabrics of Polychrome Painted Ware/Maiolica, Polychrome Sgraffito Ware, Monochrome Glazed Ware and some of pottery wasters was about 13-18%. Imported Spanish Lustre Ware sample has similar amount of Ca about 16%. Samples of local Green and Brown Painted Ware and some of pottery wasters seem to be from a different clay deposit as the Ca was 6-15%. Finally, at imported Maiolica, the Ca was about 22%. Another different is that sample of Green and Brown Painted Ware (AGBZY847) and two pottery wasters (AGBZY836, AGBZY867) have Fe>14% (Figures 175,176; Tables 45,46). The ratio Ca:Fe is 1.9%. The percentages of the fluxes Ca, K, Na are quite different. The ratio Ca:K:Na is 14:4:0.5 and the percentage is 7%. At samples of the Athenian Agora in Attica, Polychrome Painted Ware/Maiolica, Polychrome Sgraffito Ware, Spanish Lustre Ware, Maiolica, Incised Sgraffito Ware and Slip-Painted Ware with T 850-1050 ^{o}C appear Extensive Vitrification. Samples of Green and Brown Painted Ware and Monochrome Glazed Ware with T 1000-1150 ^{o}C have Extensive Vitrification to Intermediate Vitrification. Finally, sample of Zeuxippus Ware Subtype with T 800-950 ^{o}C has Initial Vitrification. Their clay bodies have isolated pores in the clay matrix. Similar clay raw materials but different fabric construction technology regarding temperature and kiln conditions were followed by the potters in the Athenian Agora in Attica (Figures 181,182,183,184; Tables 54,57).

The correlation of the SiO_2, AlO_3, CaO+MgO for the body fabrics **from the Castle of Mytilene in Lesvos** proved clearly the different chemical composition of the different pottery types (Panagopoulou et al. 2019; 2021a). Specifically, body fabrics of Porcelain appeared in a specific

area with one sample of Kütahya Ware (MYT183) and one sample of Monochrome Glazed Ware (MYT200). Furthermore, another group with fragments of Iznik Ware, Kütahya Ware, Glazed Frit Ware, one sample of Porcelain (MYT221) and one sample of Monochrome Glazed Ware (MYT201) was seemed. One last sample of Kütahya Ware (MYT184) appeared as a loner close to Maiolica samples. Another group was included fragments of Miletus Ware, Polychrome Sgraffito Ware and Polychrome Marbled Ware. Furthermore, Maiolica sherds appeared at another area in the plot (Figure 172). The fabrics of samples from the Castle of Mytilene in Lesvos have red colour also, and specifically Polychrome Sgraffito Ware, Polychrome Marbled Ware, Polychrome Painted Ware, Painted Ware and Monochrome Glazed Ware. Regarding imported pottery fragments of Glazed White Ware IV, Iznik Ware, Porcelain, Overfired, Glazed Frit Ware, Maiolica have white clays, whereas imported pottery of Kütahya Ware, Miletus Ware, Roulette/Veneto Ware have red clays. According to the clay analysis the fabric is chemically quite homogeneous. The amount of Ca is similar as the amount of Fe. The ratio of Ca/Fe in the body fabrics from the Castle of Mytilene in Lesvos samples showed two main groups. At the first one samples of Porcelain, Kütahya Ware, Iznik Ware and Glazed Frit Ware were included. Two samples of Kütahya Ware (MYT183, MYT184) appeared at different positions as well as one sample of Iznik Ware that seemed to have a higher amount of Fe (MYT168). Maybe it is due to its coloured glaze. At the second group was included fragments of Miletus Ware and one Polychrome Sgraffito Ware (MYT209). Monochrome Glazed Ware fragments (MYT200, MYT201) appeared as loners at different points in the plot. Finally, Maiolica sherds appeared at a different area because they had a high amount of Ca >20% (Figures 177,178; Tables 51,52). The ratio Ca:Fe is the percentage is 1.3%. The percentages of the fluxes Ca, K, Na are quite different. The ratio Ca:K:Na is 9:3:1 and the percentage is 1.2%. Concerning imported ceramics, some fabric composition is of a great interest. Specifically, all Porcelain samples with SiO_2 70%, CaO ~1%, Na_2O 2%, K_2O ~3% and Fe_2O_3 <1% have a high quality pure white fabric. To continue with, fritware fabrics were observed in Iznik Ware sherds contain SiO_2 86%, CaO 3%, Na_2O 2.3% and K_2O 0.5%. Iznik Ware sherds are alkali fritwares. The fabric recipe was the standard Iranian soda-alkali frit recipe due to the type of alkali used and specifically almost equal parts of pounded quartz stone and calcined soda plant. In addition, Glazed Frit Ware sherd MYT182 with SiO_2 94%, CaO 1%, Na_2O 1%, K_2O 0.9% is an alkali fritware fabric also. Furthermore, one sherd of Kütahya Ware MYT181 with SiO_2 93%, CaO 1%, Na_2O 1.3%, K_2O 0.5% seemed to have a fritware fabric and possibly the potter made an experiment for new pottery types. Finally, Monochrome Glazed Ware sample MYT201 with SiO_2 86%, CaO 5.7%, K_2O 0.6% seemed to have a fritware fabric also. Only fragments of Iznik Ware, Kütahya Ware (apart from MYT184), Porcelain and Monochrome Glazed Ware (MYT200) have CaO<6%.

Regarding fragments from the Castle of Mytilene in Lesvos samples, Glazed White Ware IV with T 800-850 ^oC has Initial Vitrification and Miletus Ware with T 800-950 ^oC has Initial to Extensive Vitrification. Fragments of Kütahya Ware with T 1000-1050 ^oC, Roulette/Veneto Ware with T 850-950 ^oC and Polychrome Marbled Ware T 950-1050 ^oC have Extensive Vitrification. Fragments of Iznik Ware with T 1050-1100 ^oC and Monochrome Glazed Ware with T 1050-1150 ^oC have Intermediate Vitrification. Fragments of Polychrome Sgraffito Ware with T 1050- >1150 ^oC and Painted Ware with T>1100 ^oC have Intermediate to Total Vitrification. Finally, fragments of Porcelain and Overfired Stoneware with T>1100 ^oC have Total Vitrification. The fabric bodies

have also isolated pores in the clay matrix. A large variety in fabric technology construction such as temperature, kiln conditions, and size of inclusions were observed in the Castle of Mytilene in Lesvos (Figures 181,182; Tables 55,58; Appendixes VIII, IX).

In conclusion, all the minerals of the fresh fractured samples were analyzed and identified with Scanning Electron Microscopy in order to results to be crossed with the results of X-Ray Diffraction. All the minerals were confirmed with both of these techniques (Figures 182,183,184; Appendixes VIII, IX).

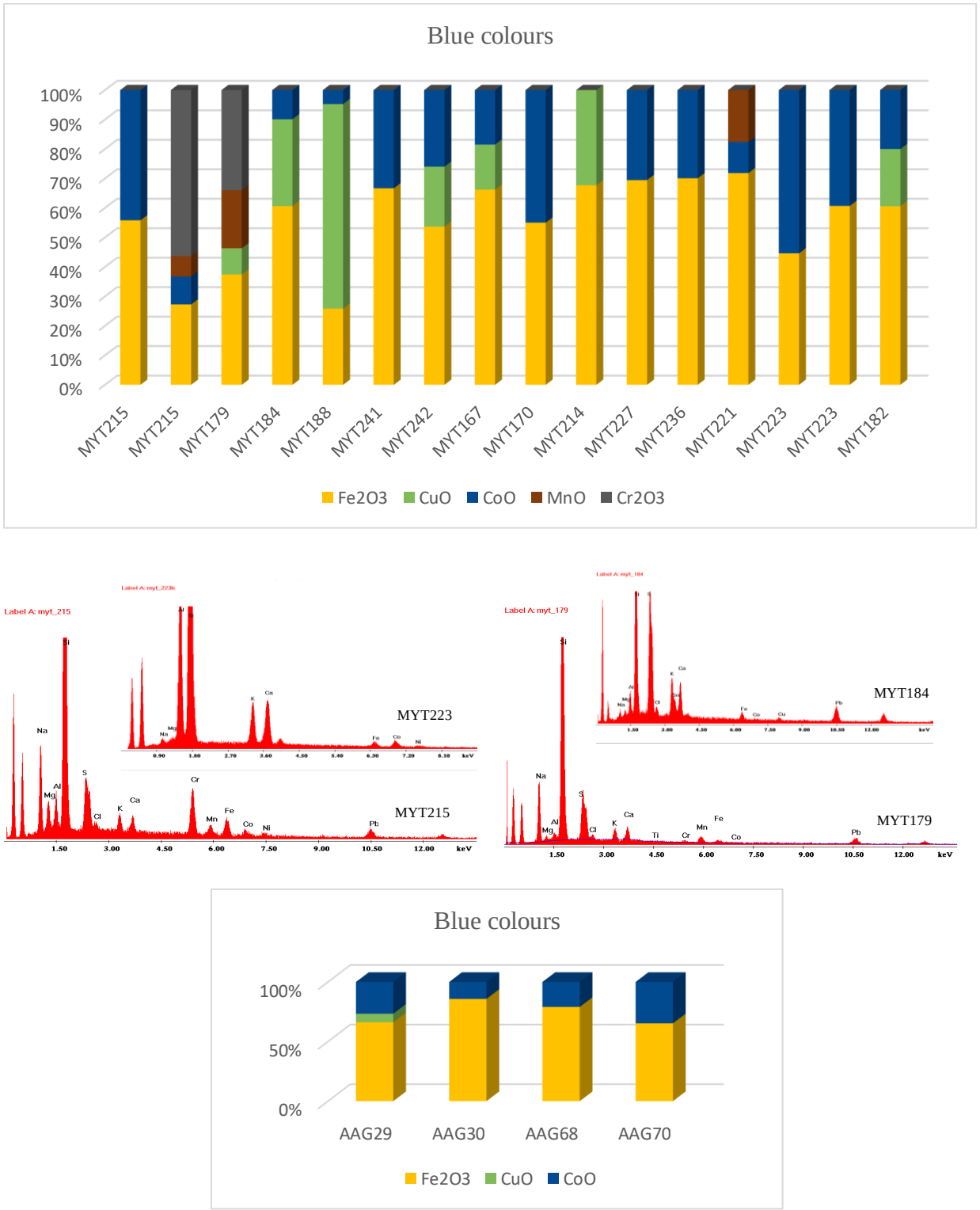
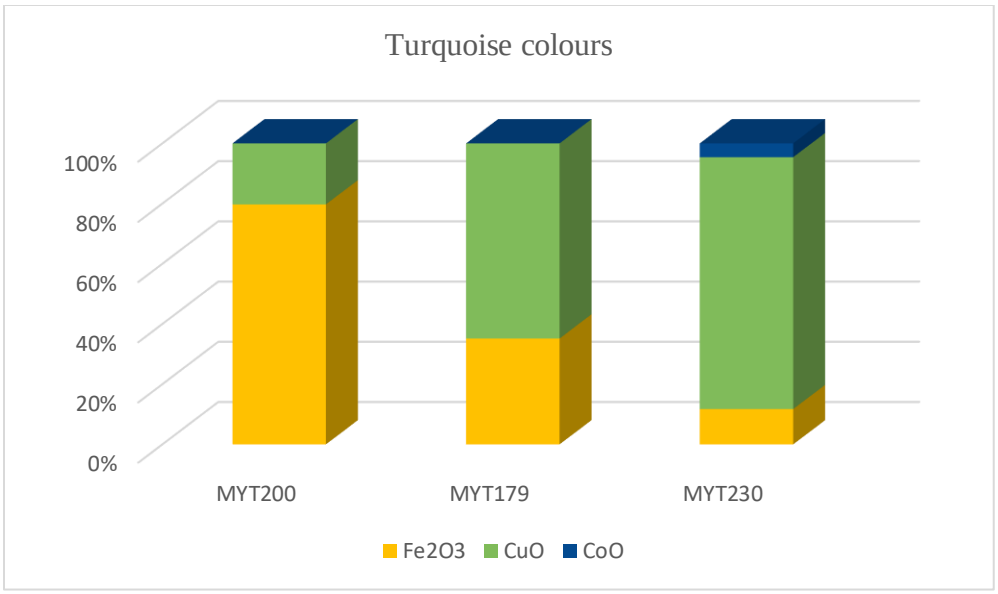
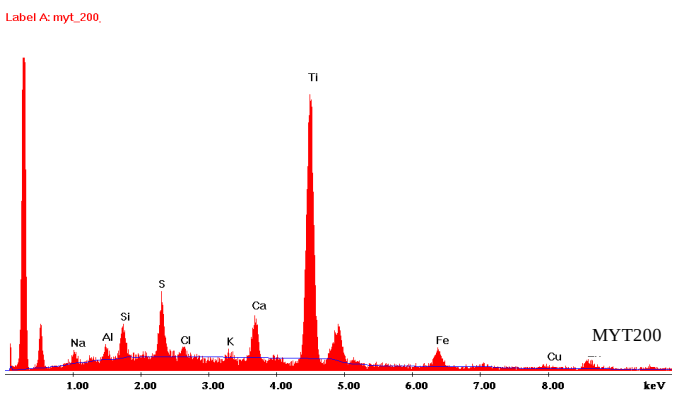
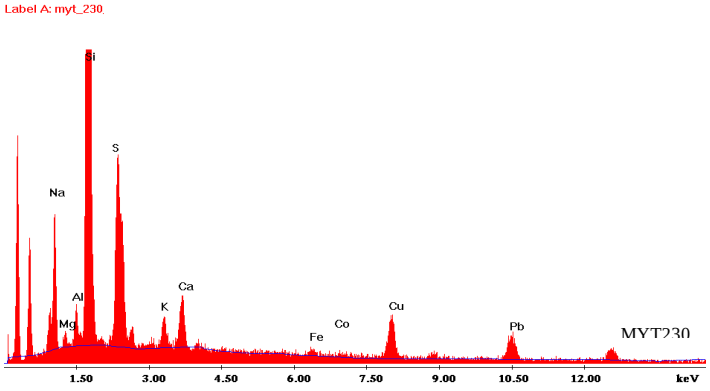
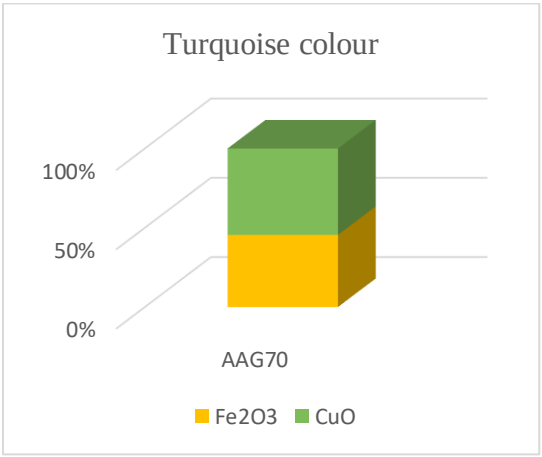


Figure 153 Blue pigments/colour and Dark Blue line pigments. Graphs from the pottery samples from the Castle of Mytilene in Lesvos (top) and of the Athenian Agora in Attica (bottom).









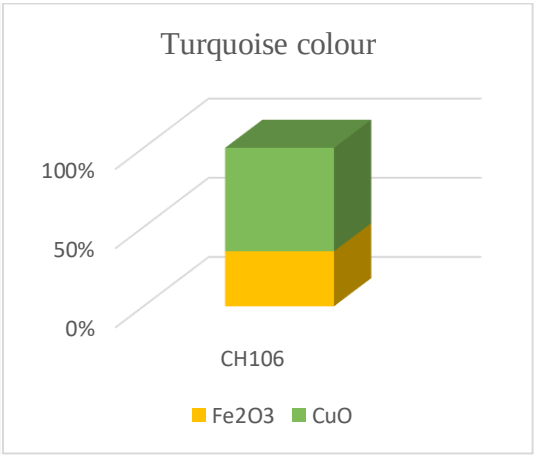
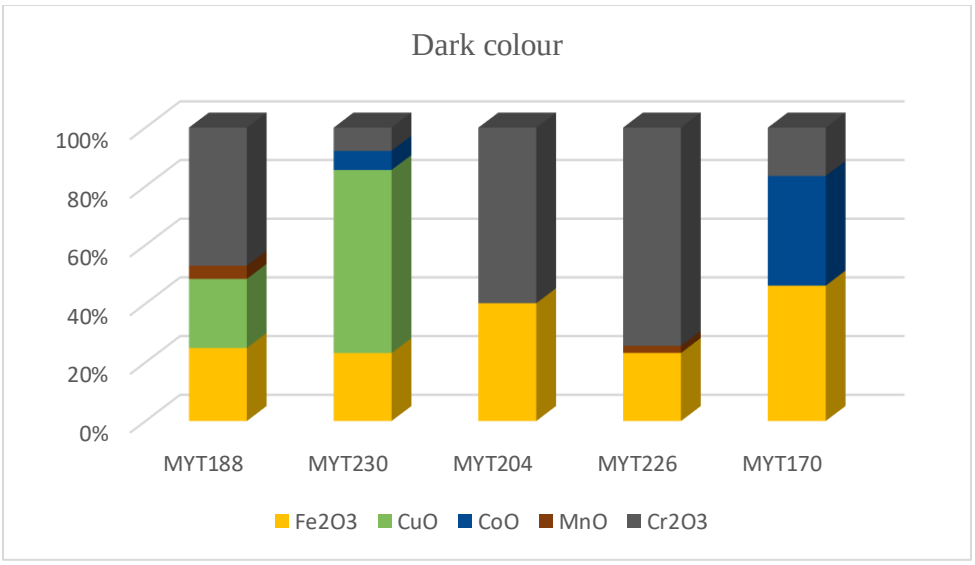
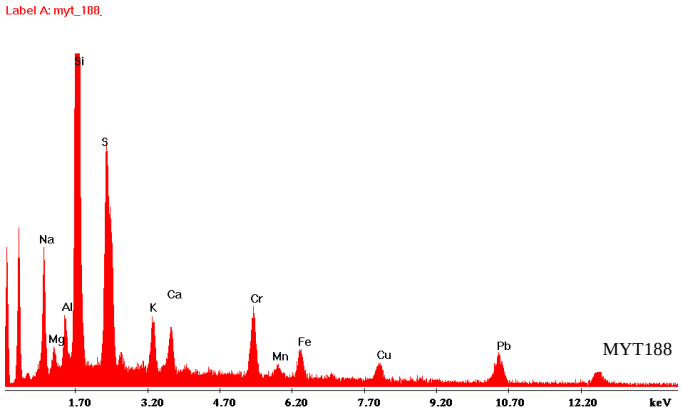
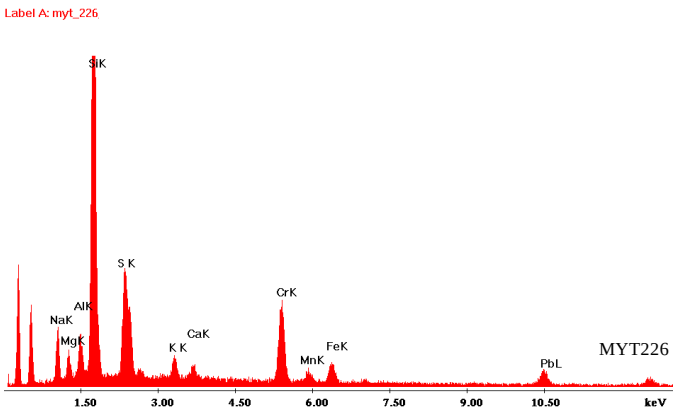


Figure 154 Turquoise pigments. Graphs from the pottery samples from the Castle of Mytilene in Lesvos samples (top, middle), of the Athenian Agora in Attica, and of Chalcis in Euboea (bottom).







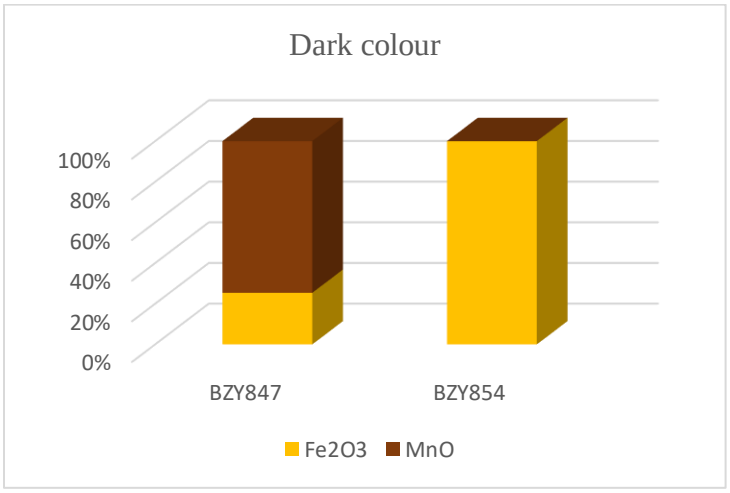


Figure 155 Dark colours and Dark line pigments. Graphs from the pottery samples from Castle of Mytilene in Lesvos samples (top, middle) and of the Athenian Agora in Attica (bottom).

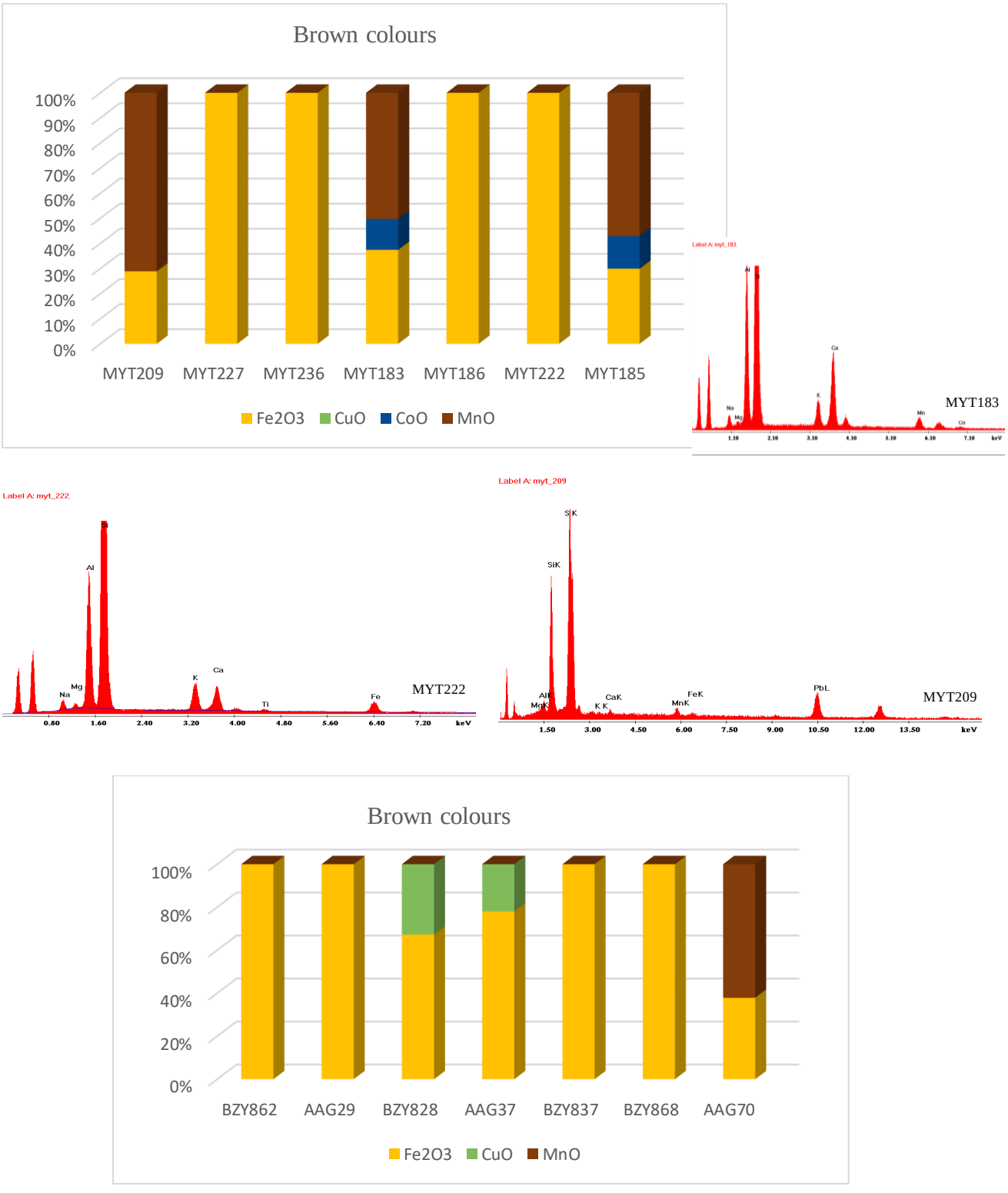
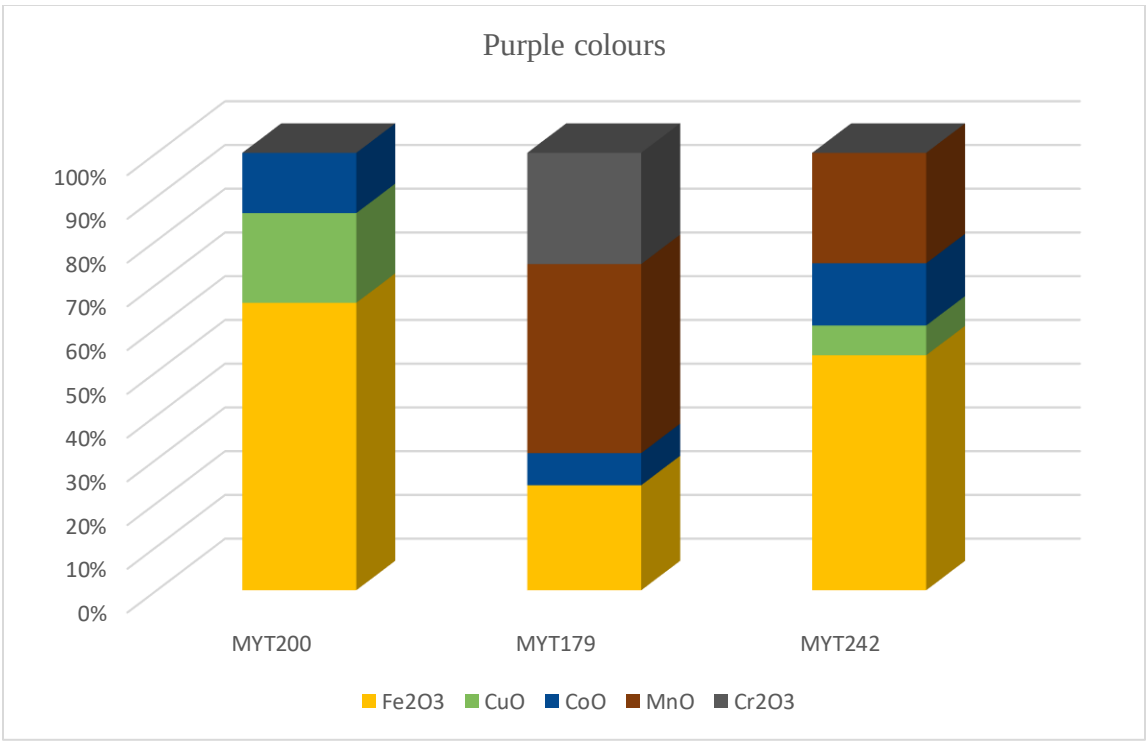


Figure 156 Brown pigments. Graphs from the pottery samples from the Castle of Mytilene in Lesvos samples (top, middle) and of the Athenian Agora in Attica (bottom).



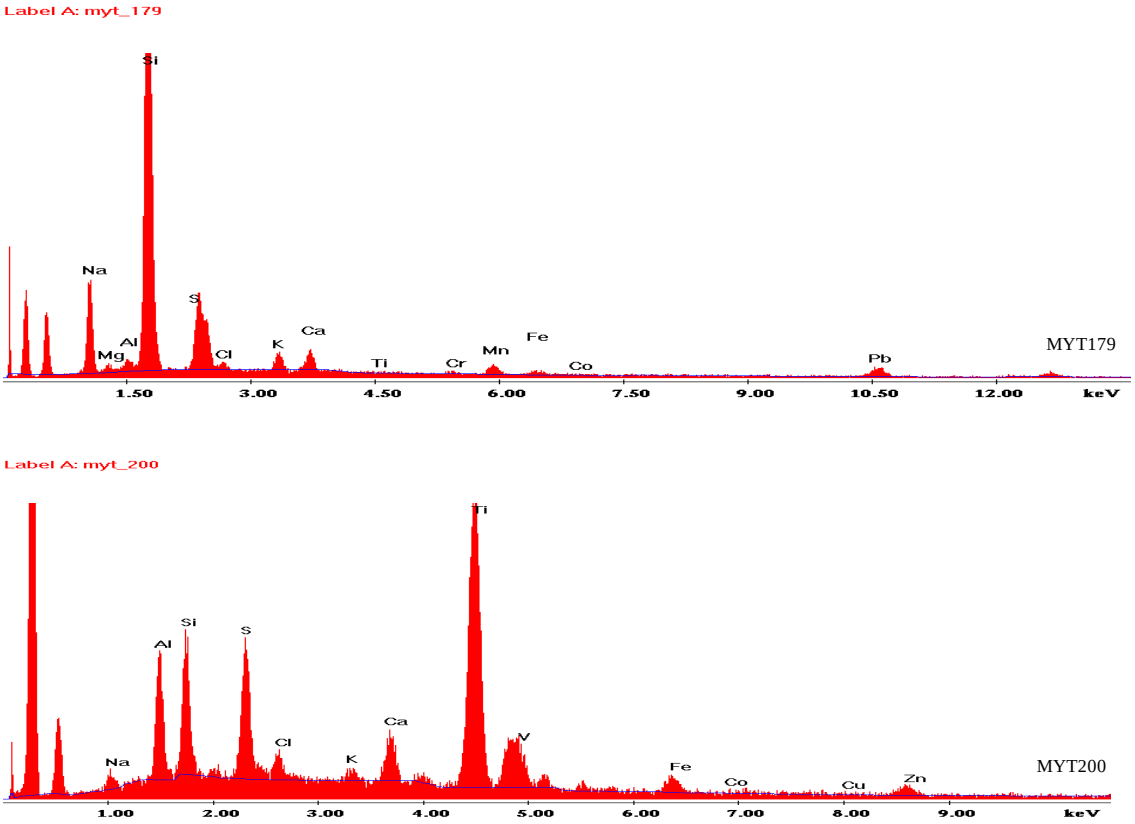
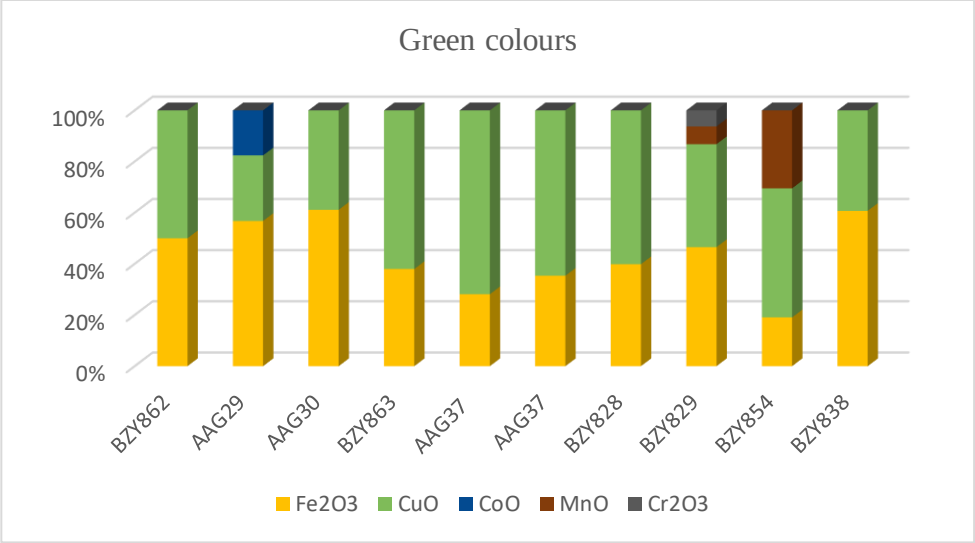
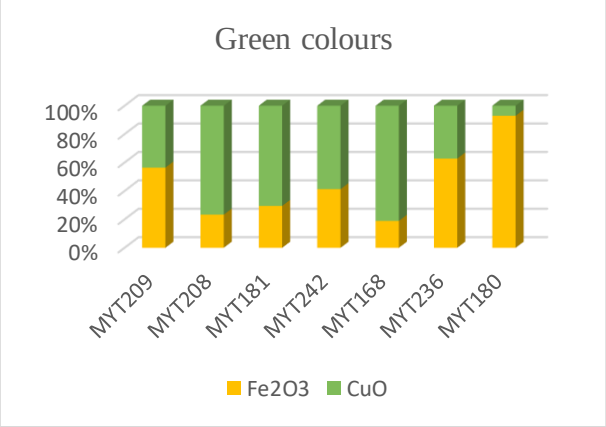


Figure 157 Purple pigments. Graphs from Mytilene samples.





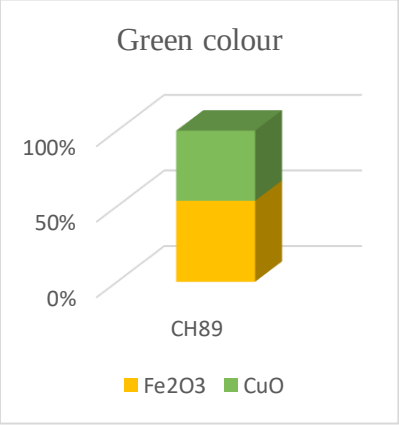


Figure 158 Green pigments. Graphs from the pottery samples (top) of the Athenian Agora in Attica, of the Castle of Mytilene in Lesvos, and of Chalcis in Euboea (bottom).

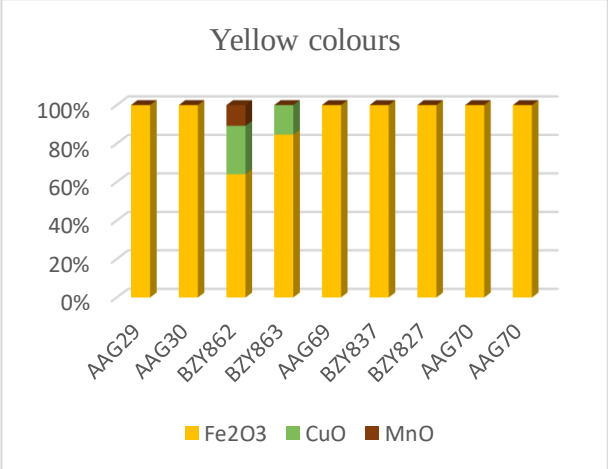


Figure 159 Yellow pigments. Graph from the Athenian Agora in Attica.

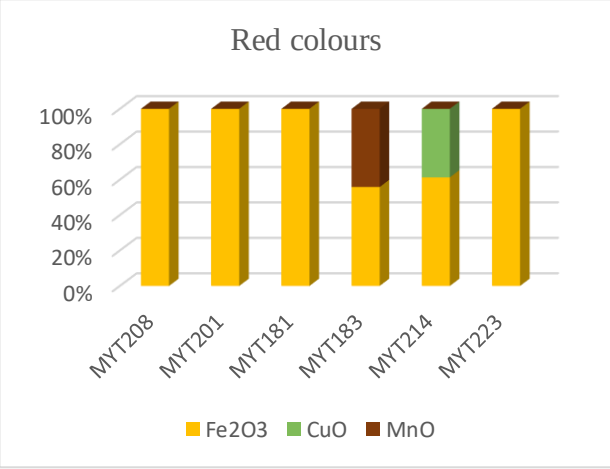
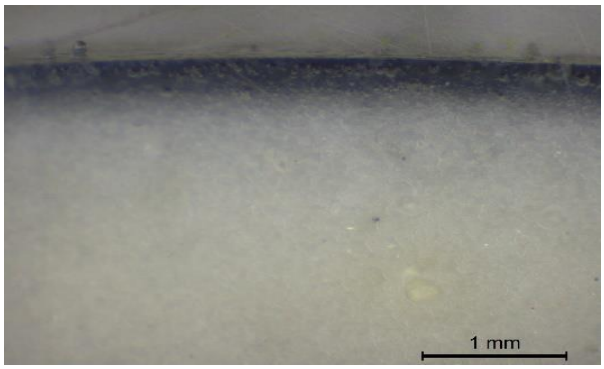
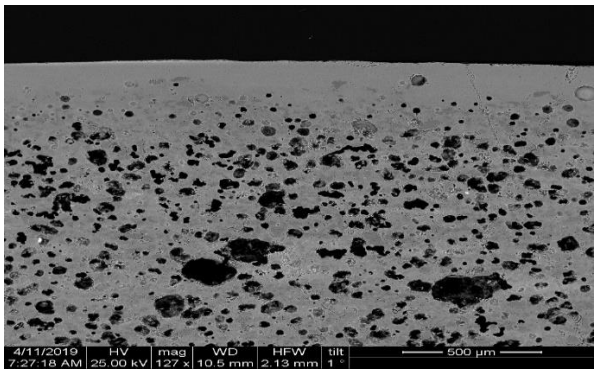
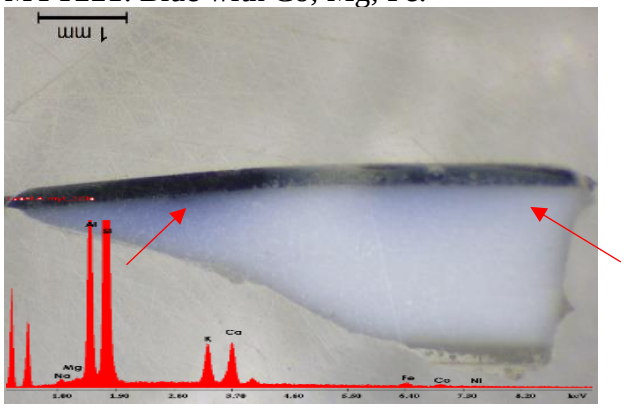


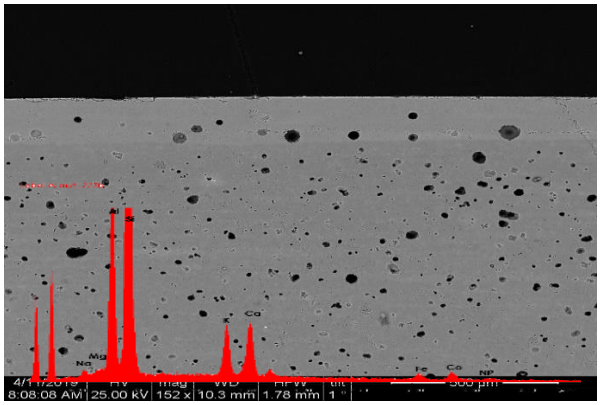
Figure 160 Red pigments. Graph from the Castle of Mytilene in Lesvos.



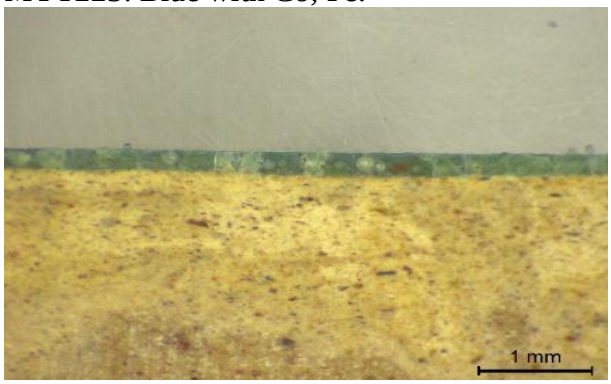


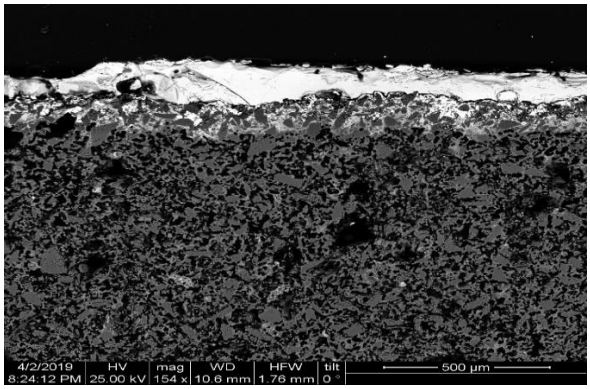
MYT221: Blue with Co, Mg, Fe.



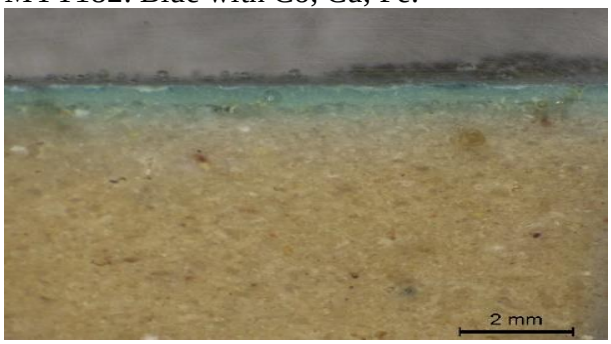


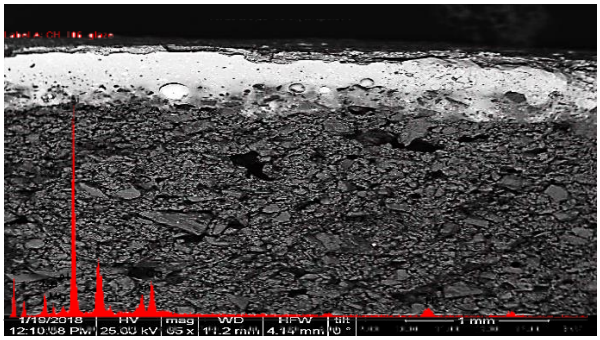
MYT223: Blue with Co, Fe.





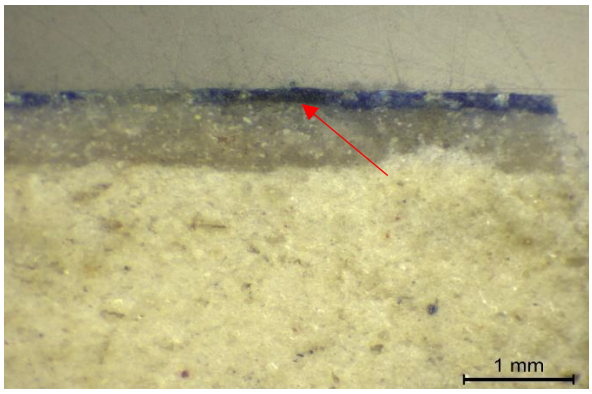
MYT182: Blue with Co, Cu, Fe.

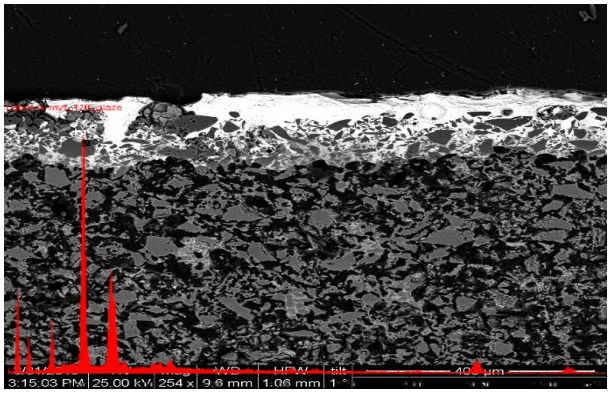




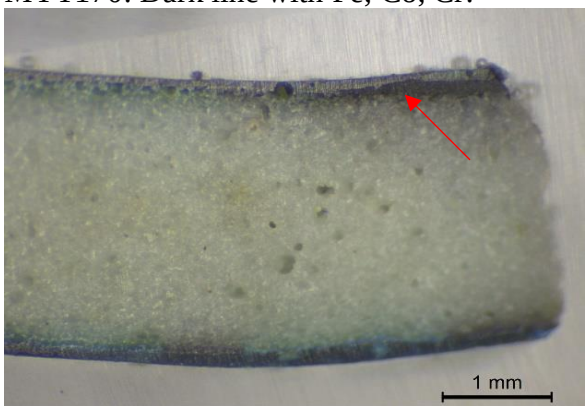
CH106: Turquoise colour with Cu, Fe, Sn.

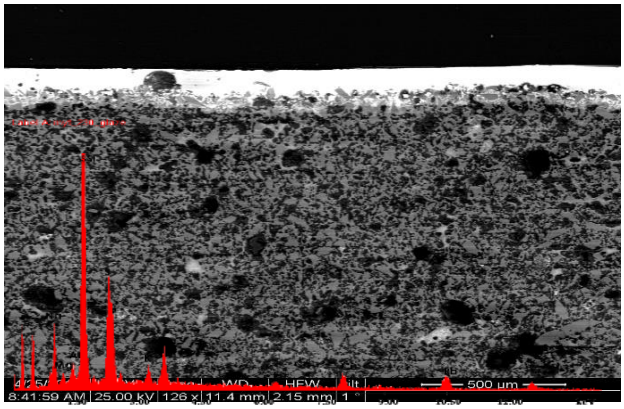
Figure 161 Blue/Turquoise pigments under Optical Microscopy and Scanning Electron Microscopy.



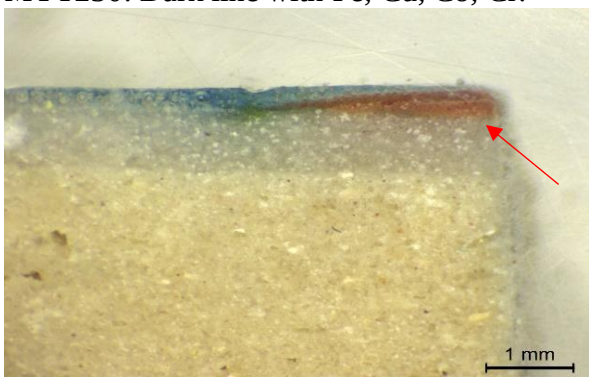


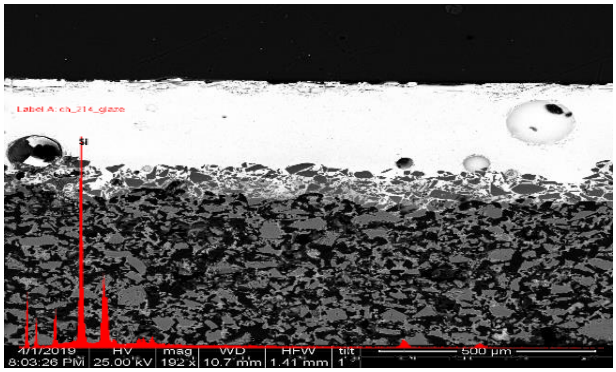
MYT170: Dark line with Fe, Co, Cr.



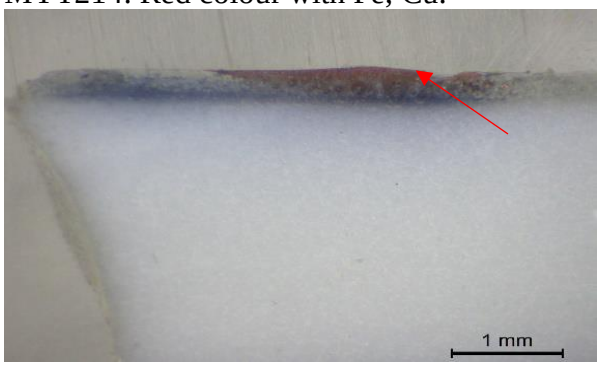


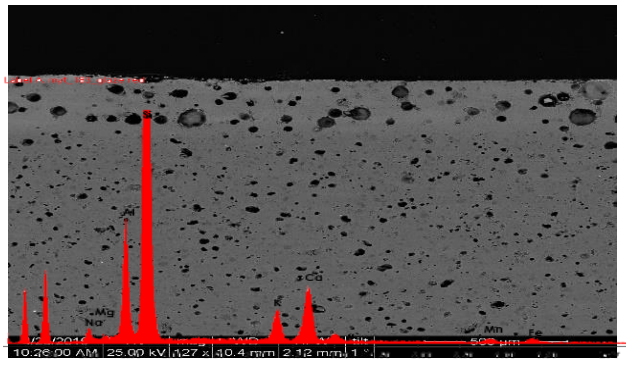
MYT230: Dark line with Fe, Cu, Co, Cr.





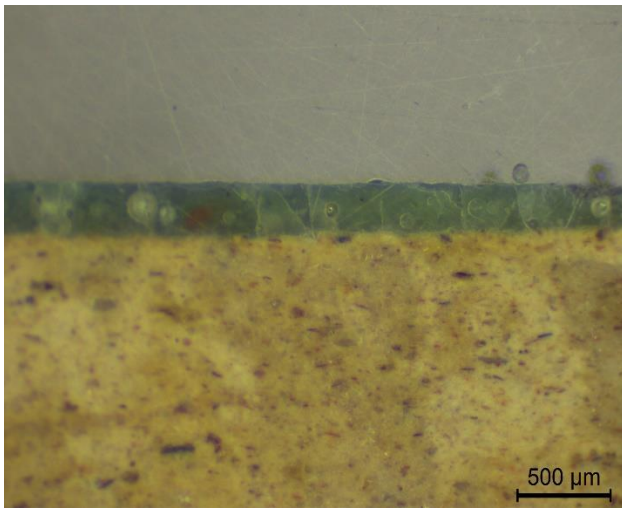
MYT214: Red colour with Fe, Cu.

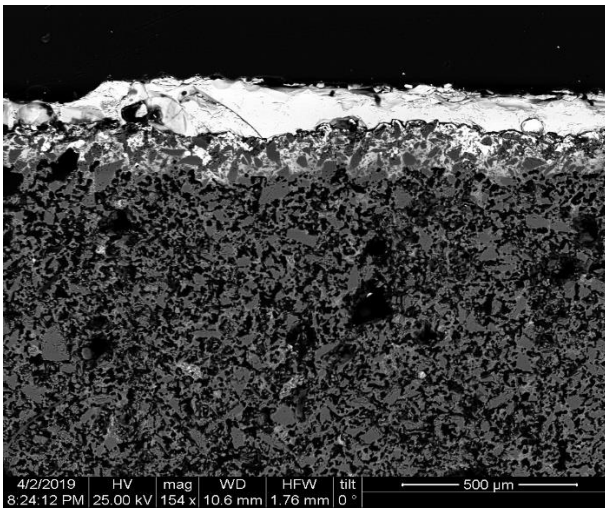




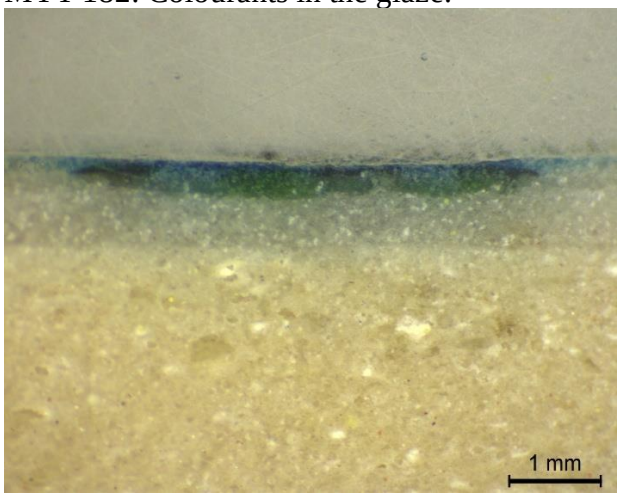
MYT183: Red colour with Fe, Mn.

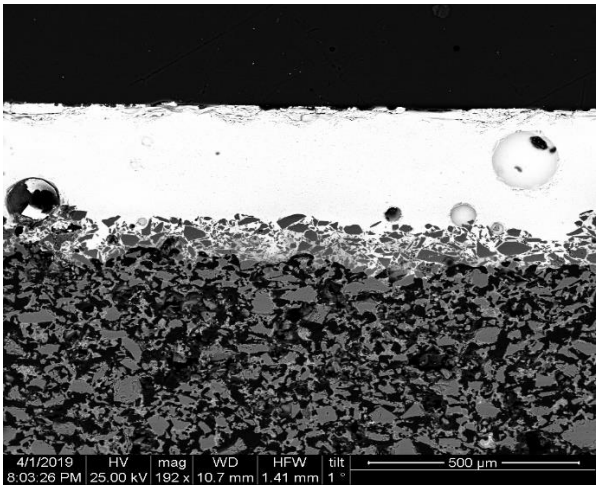
Figure 162 Dark and red pigments under Optical Microscopy and Scanning Electron Microscopy.



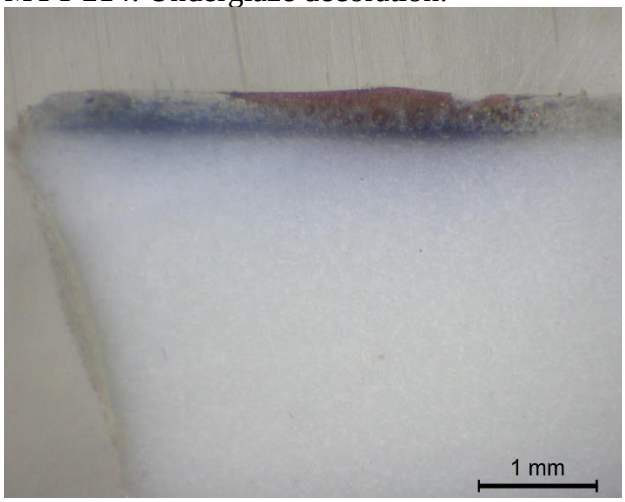


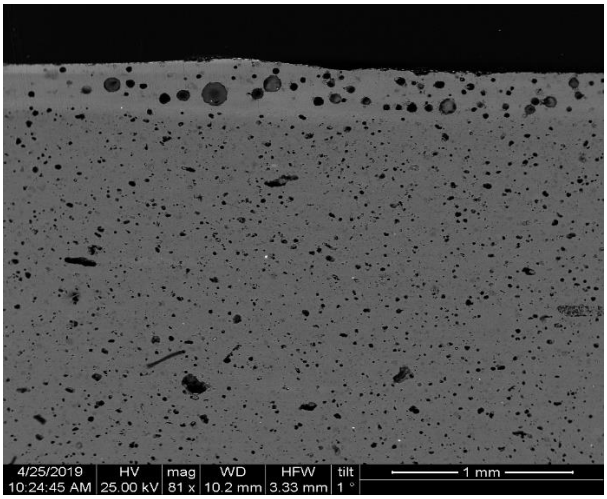
MYT 182: Colourants in the glaze.





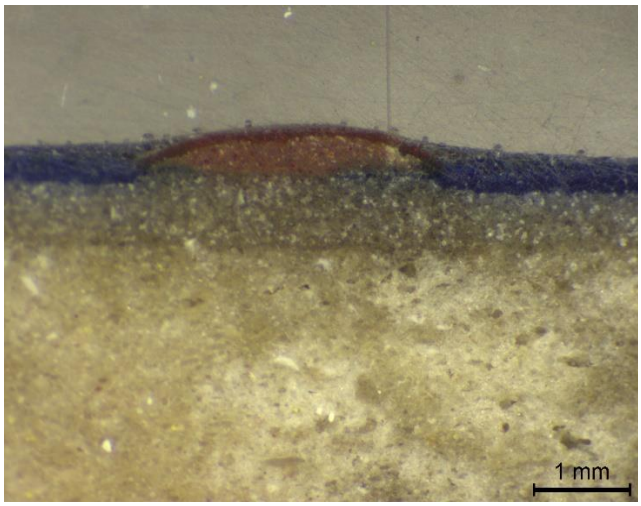
MYT 214: Underglaze decoration.

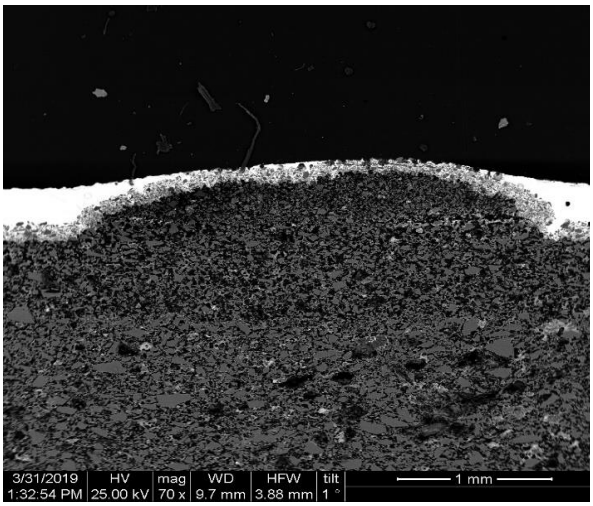




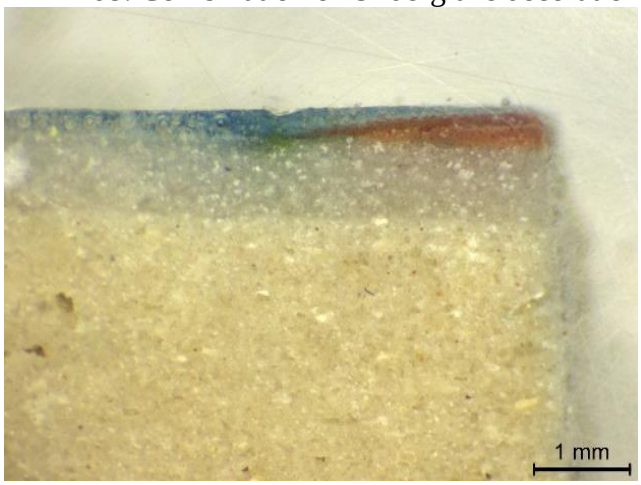
MYT183: Underglaze decoration with an overglaze red decoration.

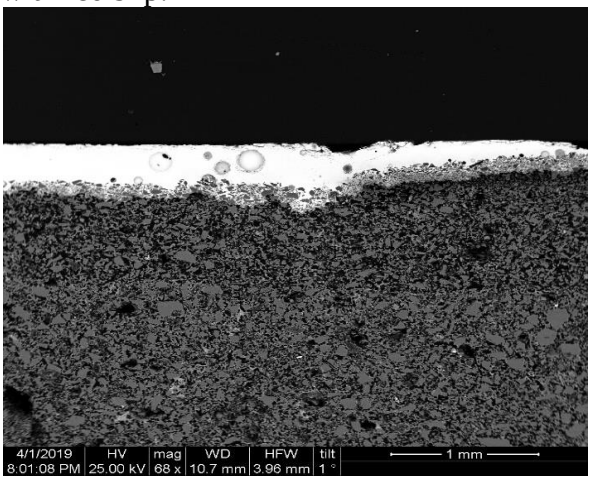
Figure 163 Type of decoration under Optical Microscopy and Scanning Electron Microscopy.



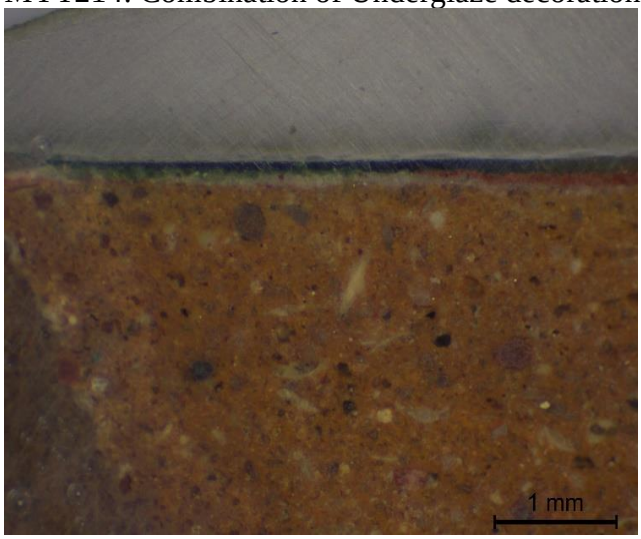


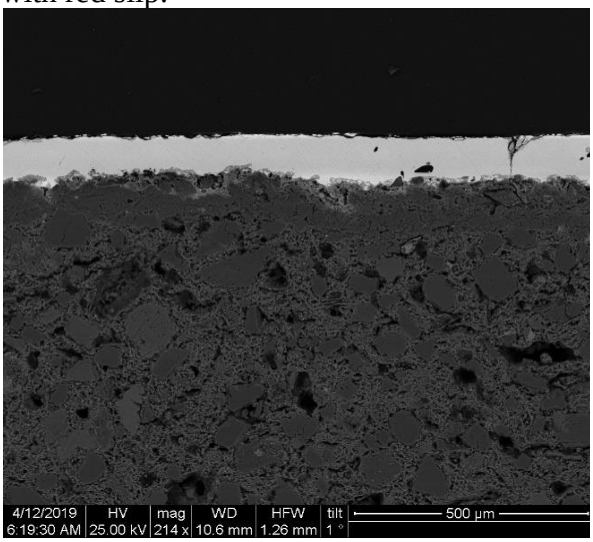
MYT168: Combination of Underglaze decoration with red slip.





MYT214: Combination of Underglaze decoration with red slip.





MYT208: Underglaze decoration: Green glaze up to red slip.

Figure 164 Type of decoration under Optical Microscopy and Scanning Electron Microscopy.

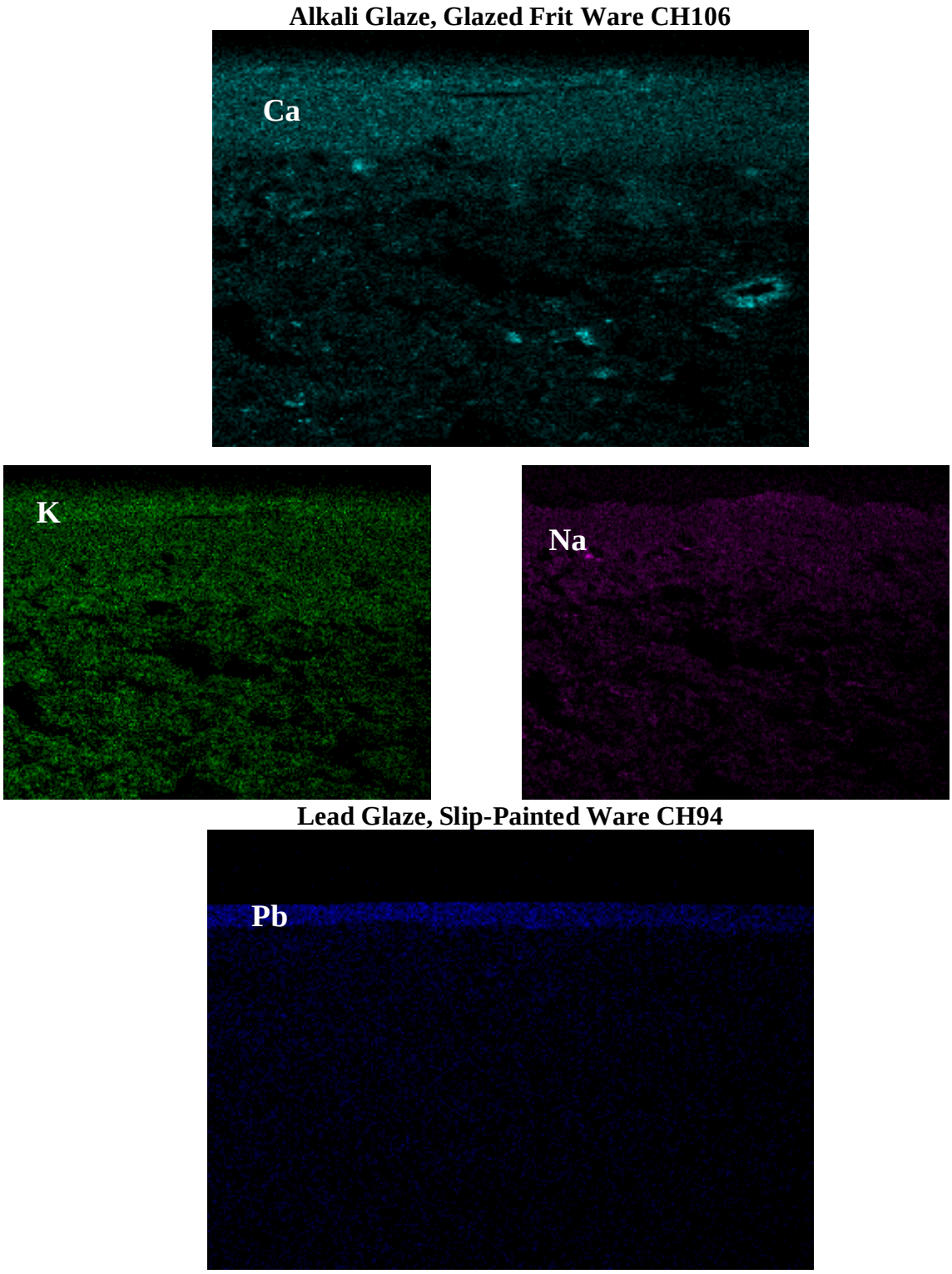
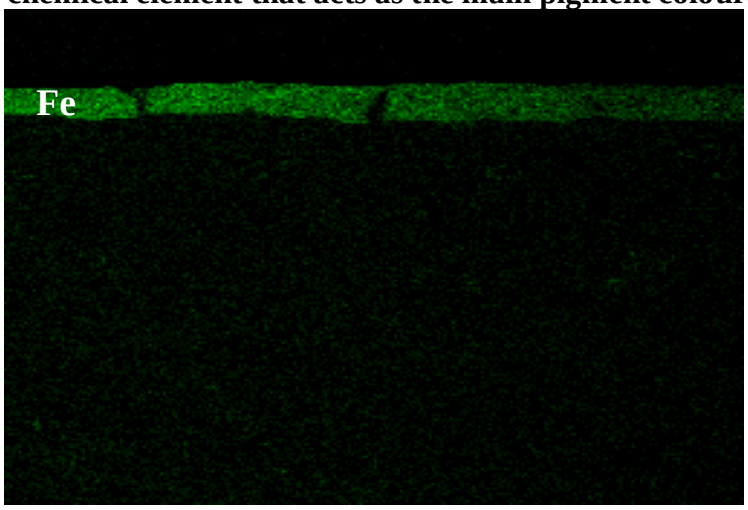
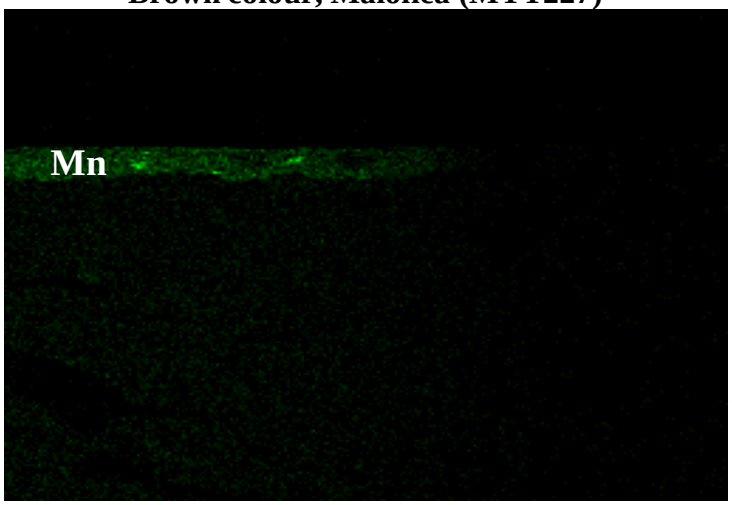


Figure 165 Scanning Electron Microscopy (SEM) mapping.

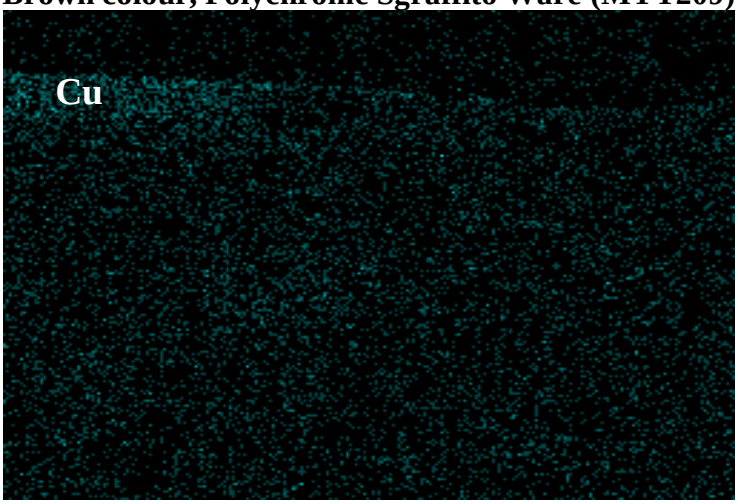
The chemical element that acts as the main pigment colourant.



Brown colour, Maiolica (MYT227)



Brown colour, Polychrome Sgraffito Ware (MYT209)



Green colour, Polychrome Sgraffito Ware (AGBZY829)

Figure 166 Scanning Electron Microscopy (SEM) mapping.

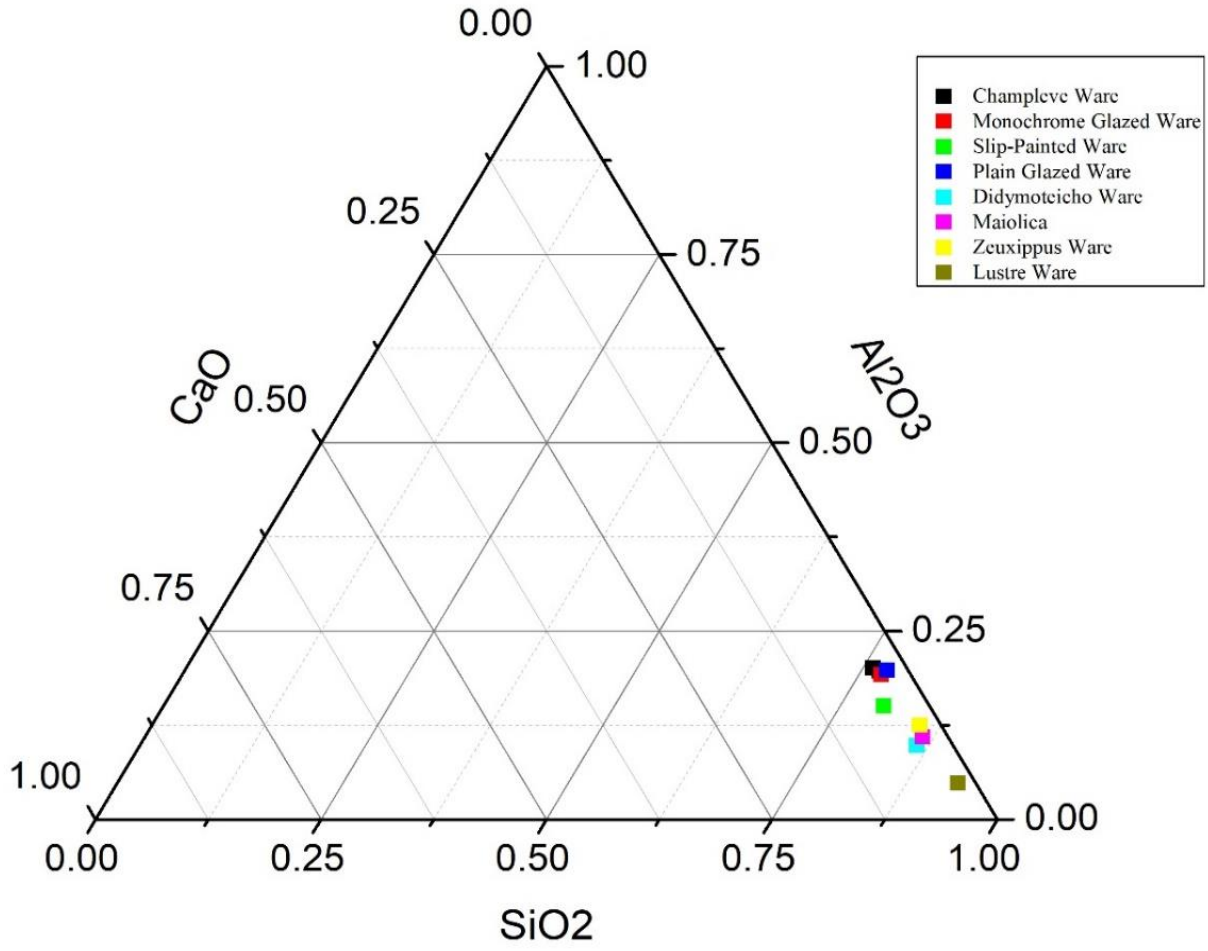


Figure 167 Correlation of the SiO_2, Al_2O_3, CaO for the glazes from Chalcis in Euboea through Scanning Electron Microscopy (SEM). The samples have been separated based on their pottery types.

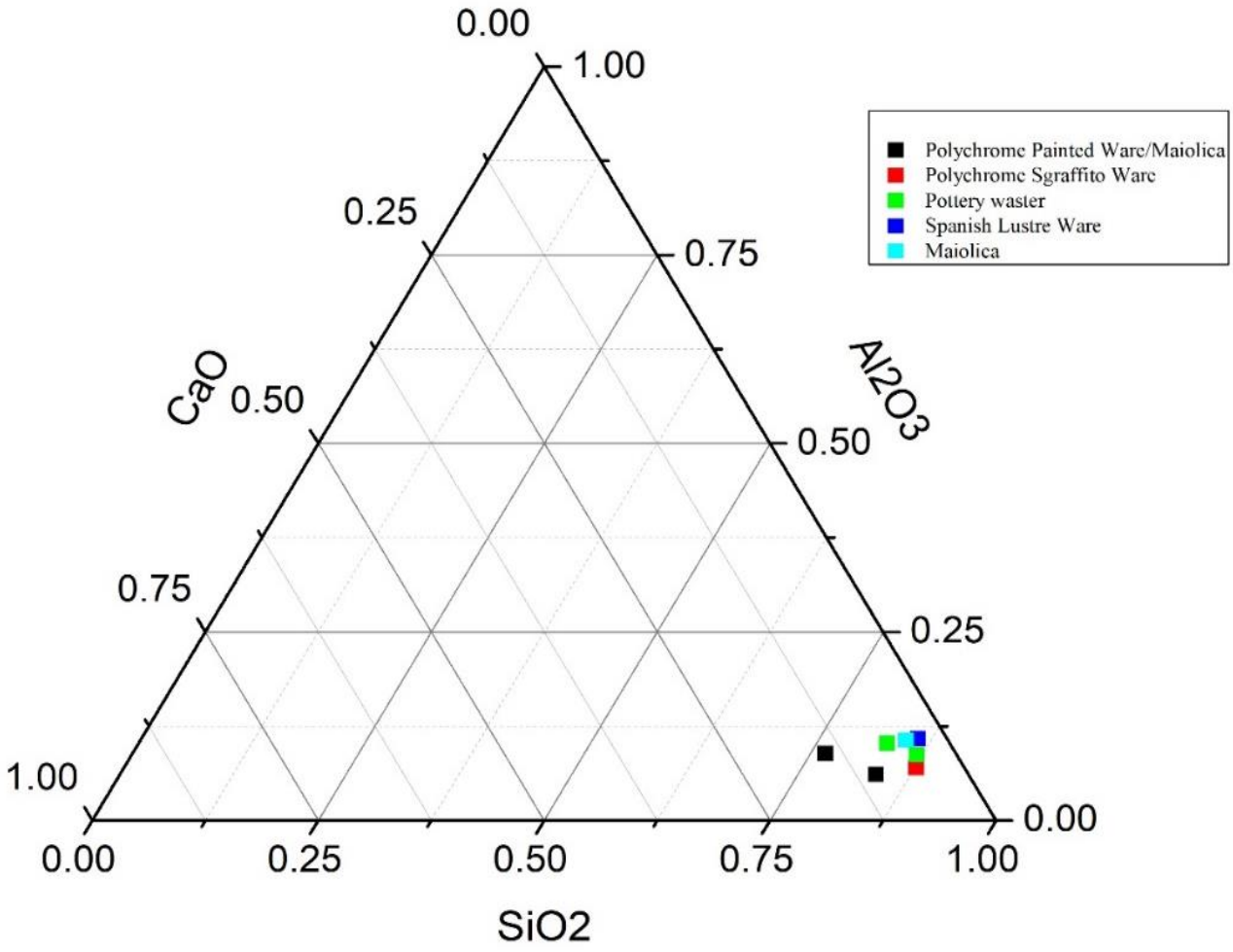


Figure 168 Correlation of the SiO_2, Al_2O_3, CaO for the glazes from the Athenian Agora in Attica through Scanning Electron Microscopy (SEM). The samples have been separated based on their pottery types.

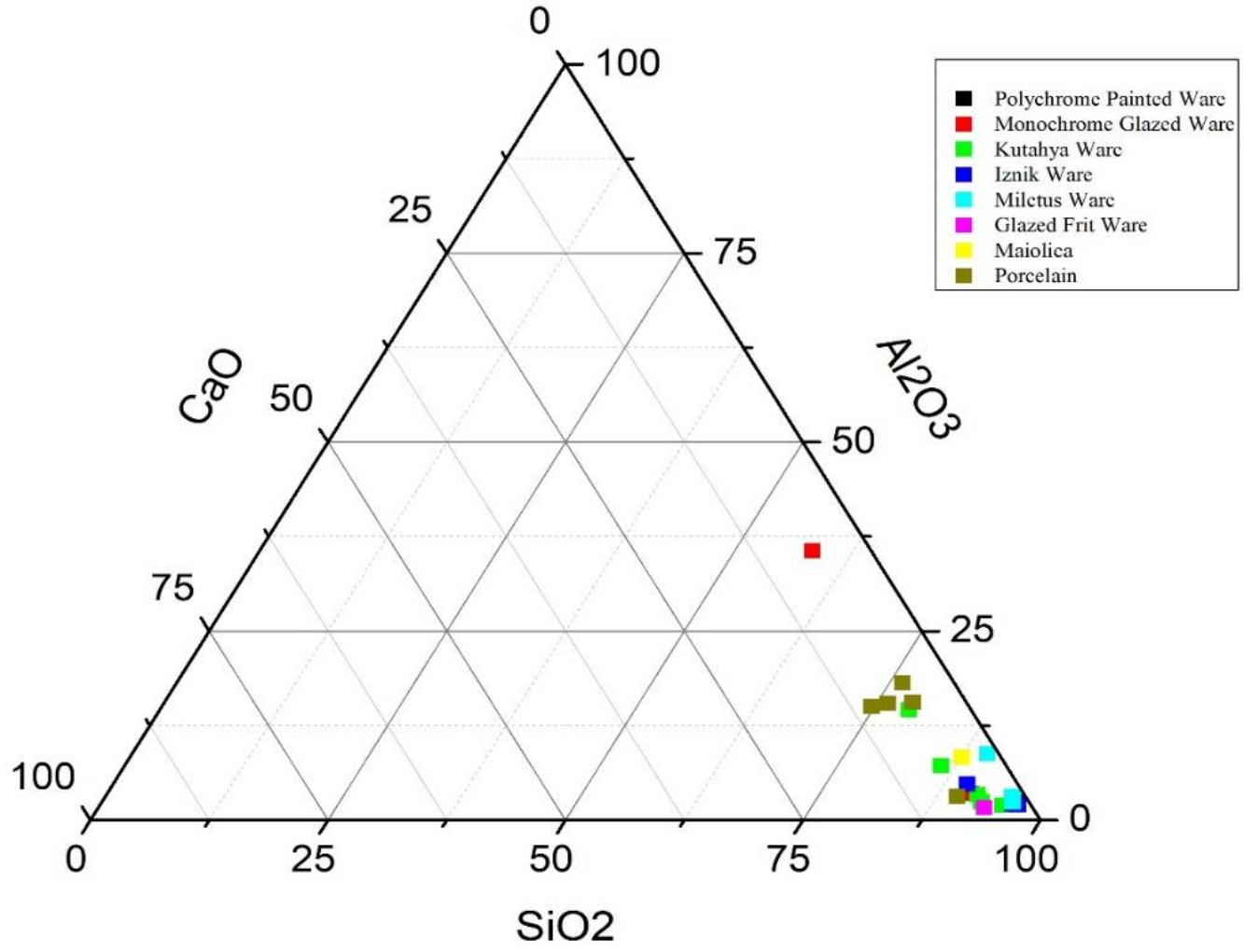


Figure 169 Correlation of the SiO_2, Al_2O_3, CaO for the glazes from the Castle of Mytilene in Lesvos through Scanning Electron Microscopy (SEM). The samples have been separated based on their pottery types.

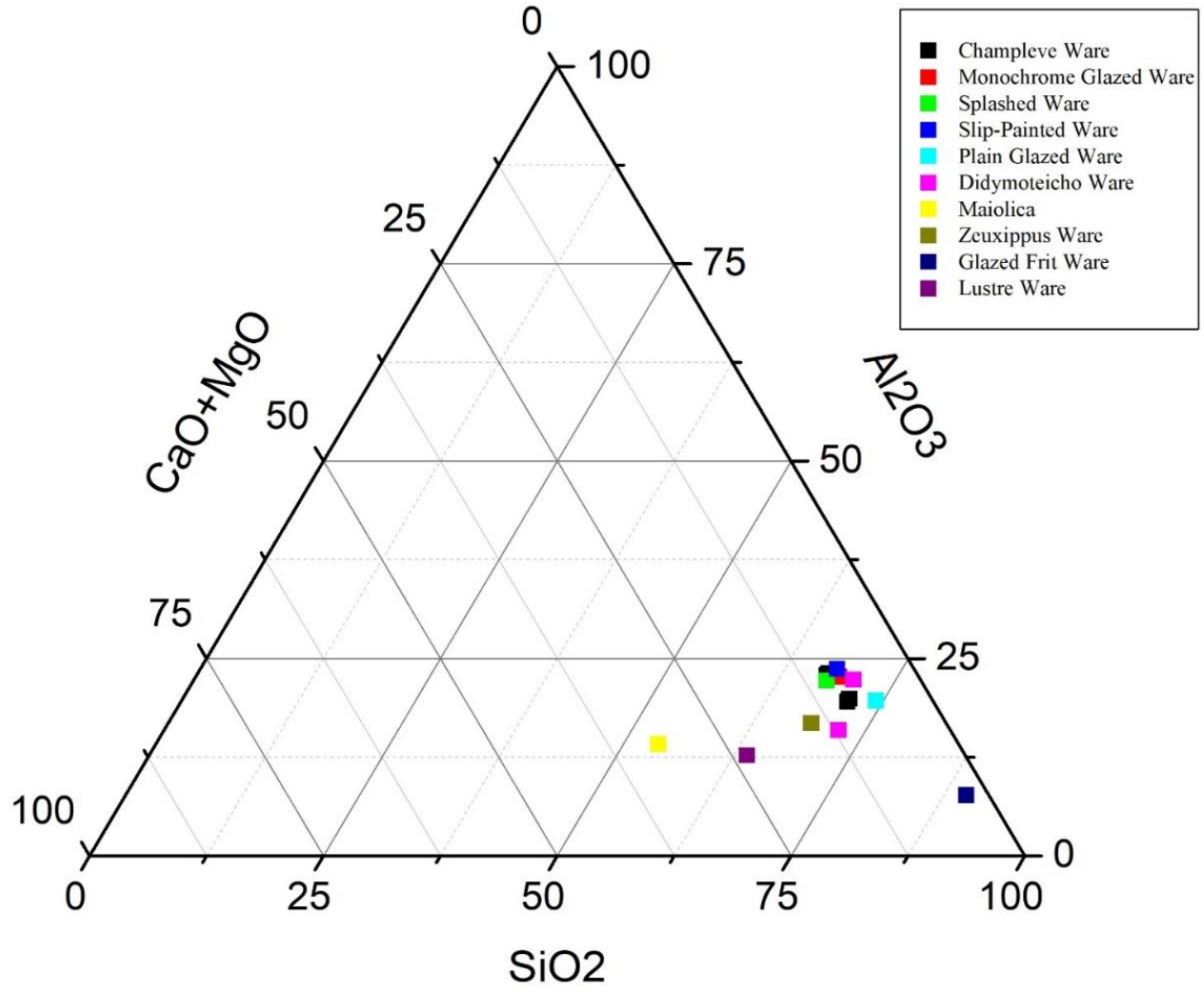


Figure 170 Correlation of the SiO_2, Al_2O_3, CaO+MgO for the fabrics from Chalcis in Euboea through Scanning Electron Microscopy (SEM). The samples have been separated based on their pottery types.

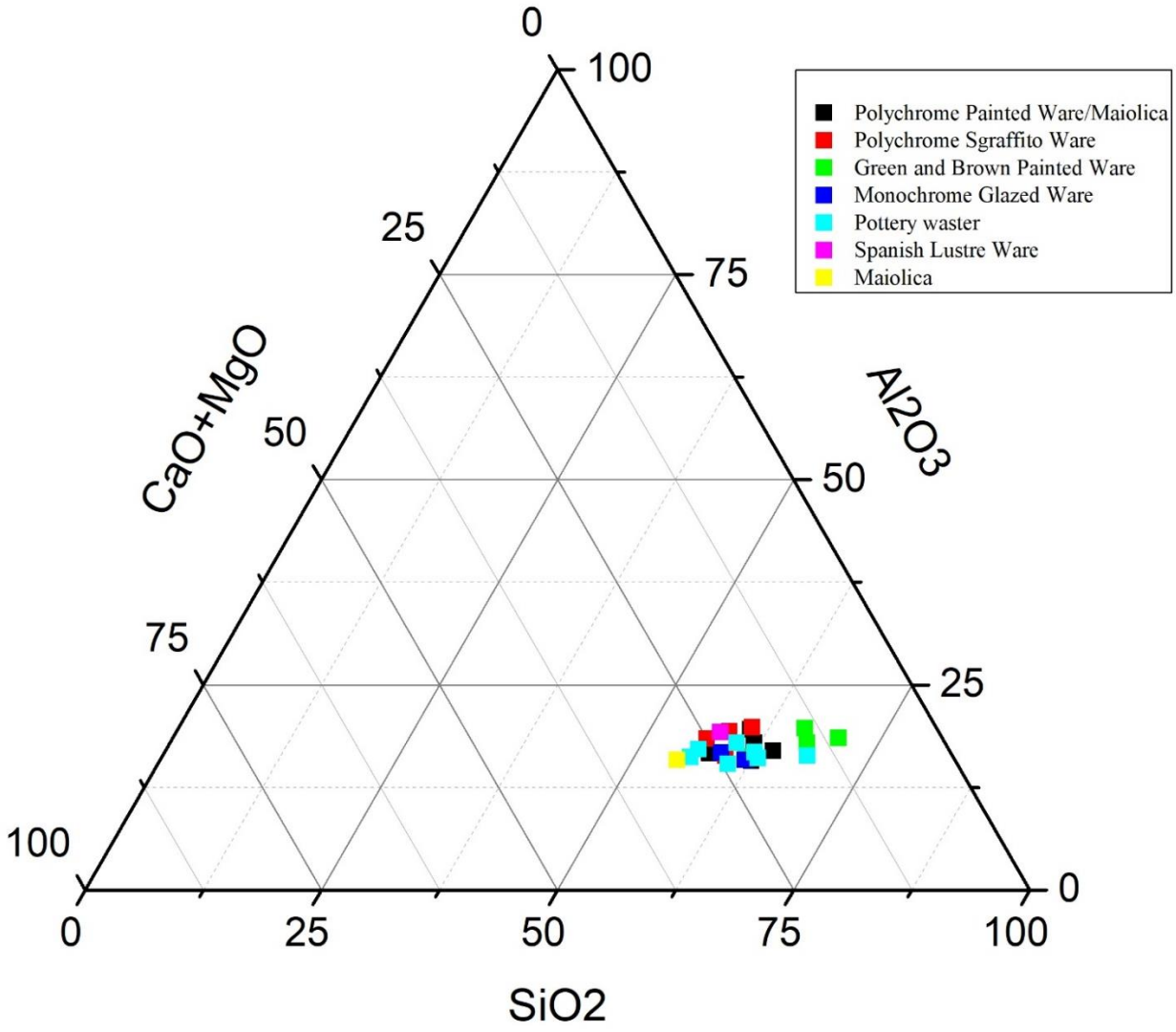


Figure 171 Correlation of the SiO_2, Al_2O_3, CaO+MgO for the fabrics from the Athenian Agora in Attica through Scanning Electron Microscopy (SEM). The samples have been separated based on their pottery types.

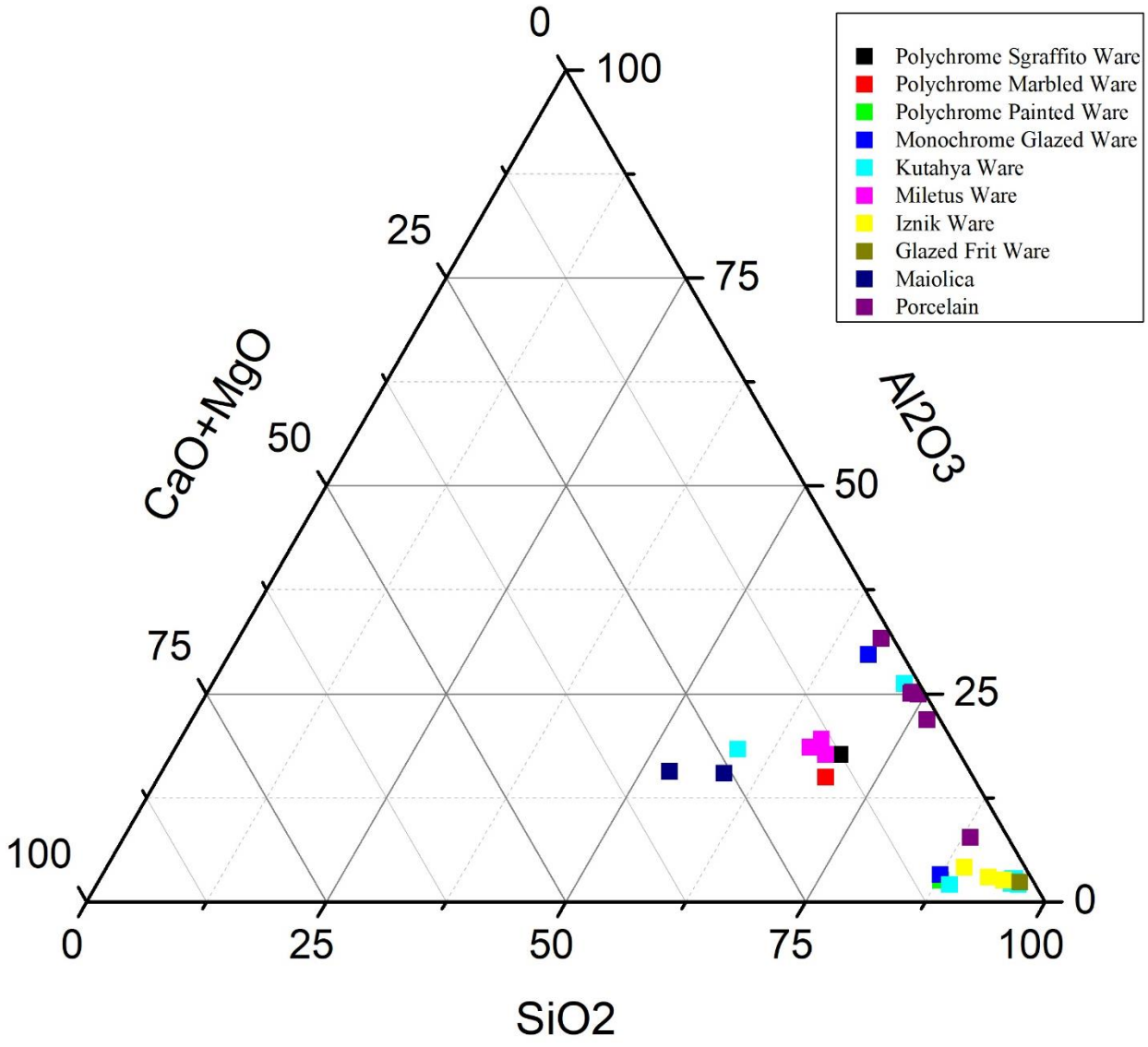


Figure 172 Correlation of the SiO_2, Al_2O_3, CaO+MgO for the fabrics from the Castle of Mytilene in Lesvos through Scanning Electron Microscopy (SEM). The samples have been separated based on their pottery types.

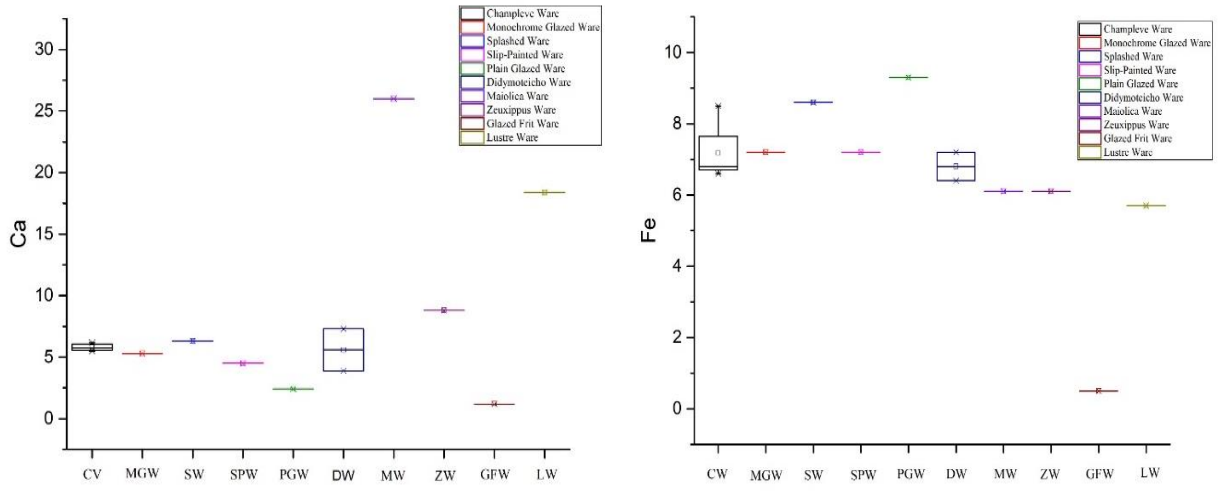


Figure 173 The proportion of Ca or Fe in the body fabrics of local and imported pottery from Chalcis in Euboea through Scanning Electron Microscopy (SEM). The samples have separated based on their pottery types.

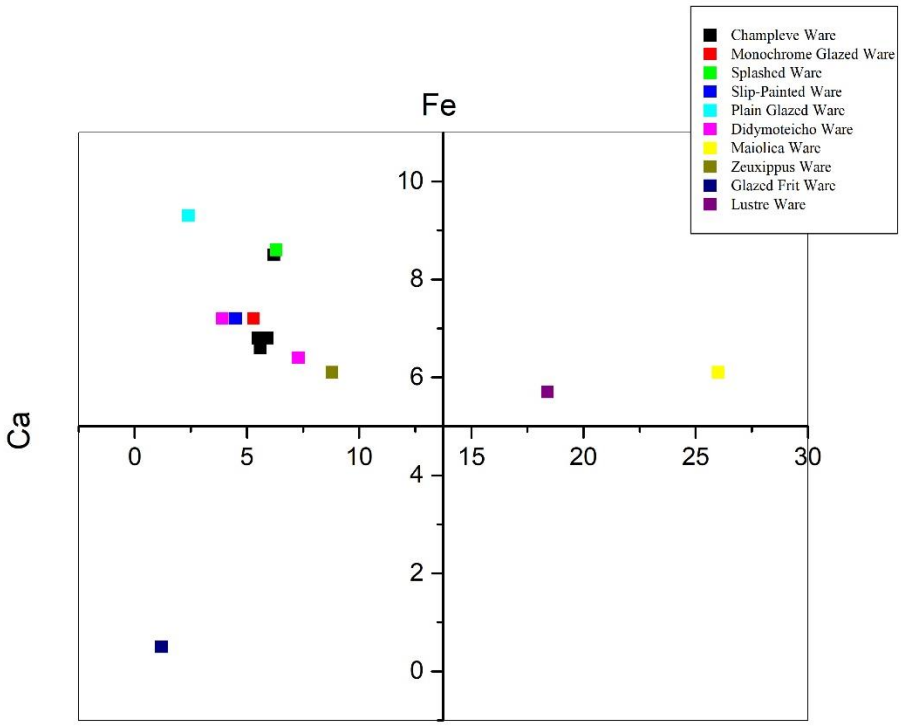


Figure 174 The correlation of Ca, Fe in the body fabrics of local and imported pottery from Chalcis in Euboea through Scanning Electron Microscopy (SEM). The samples have separated based on their pottery types.

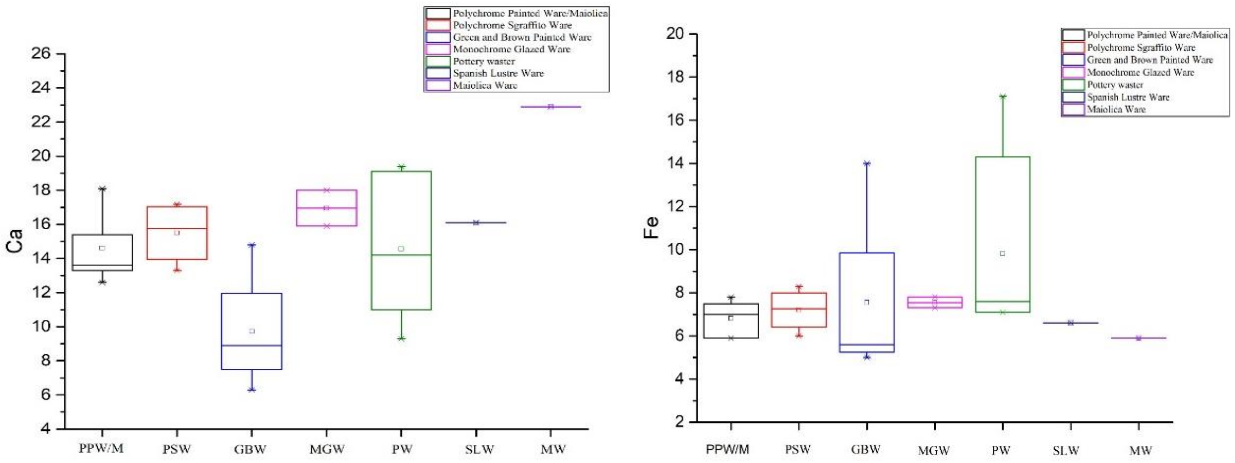


Figure 175 The proportion of Ca or Fe in the body fabrics of local and imported pottery from the Athenian Agora in Attica through Scanning Electron Microscopy (SEM). The samples have separated based on their pottery types.

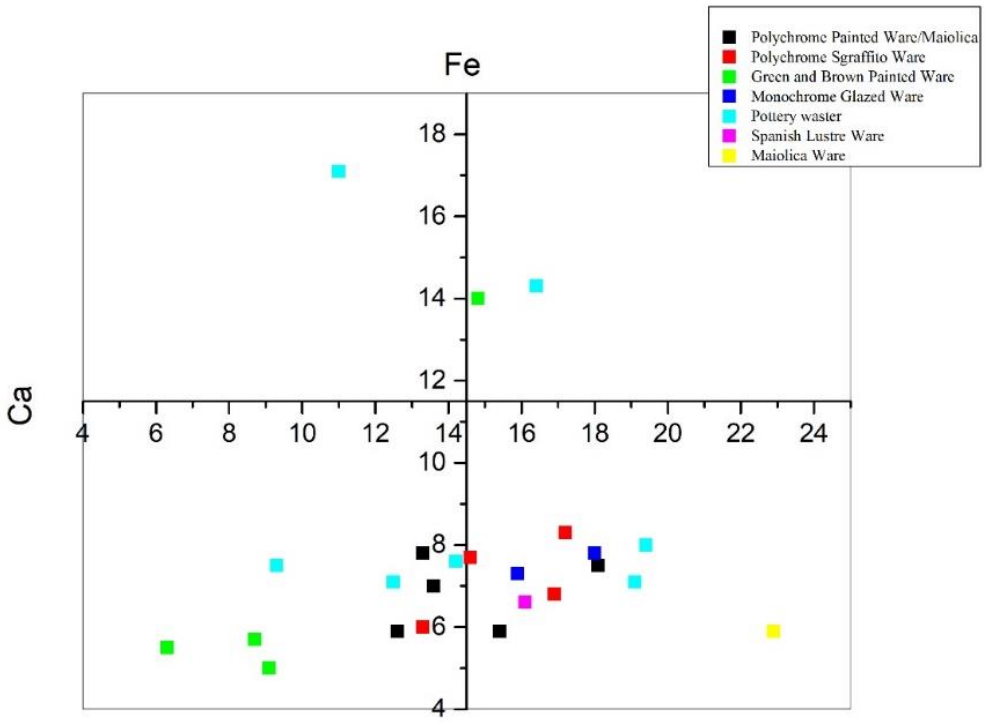


Figure 176 The correlation of Ca, Fe in the body fabrics of local and imported pottery from the Athenian Agora in Attica through Scanning Electron Microscopy (SEM). The samples have separated based on their pottery types.

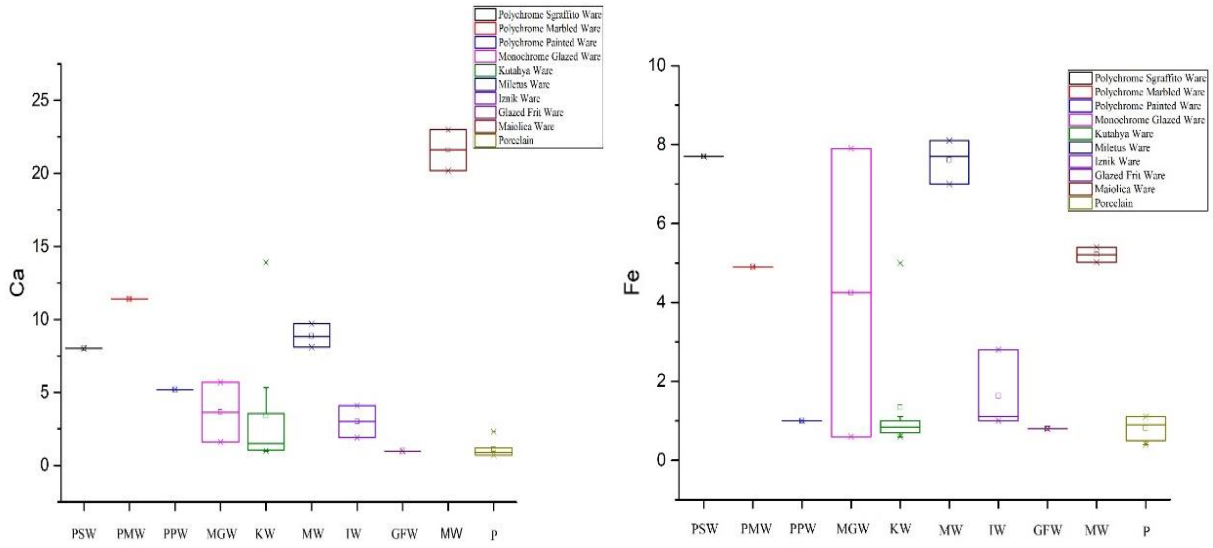


Figure 177 The proportion of Ca or Fe in the body fabrics of local and imported pottery from the Castle of Mytilene in Lesvos through Scanning Electron Microscopy (SEM). The samples have separated based on their pottery types.

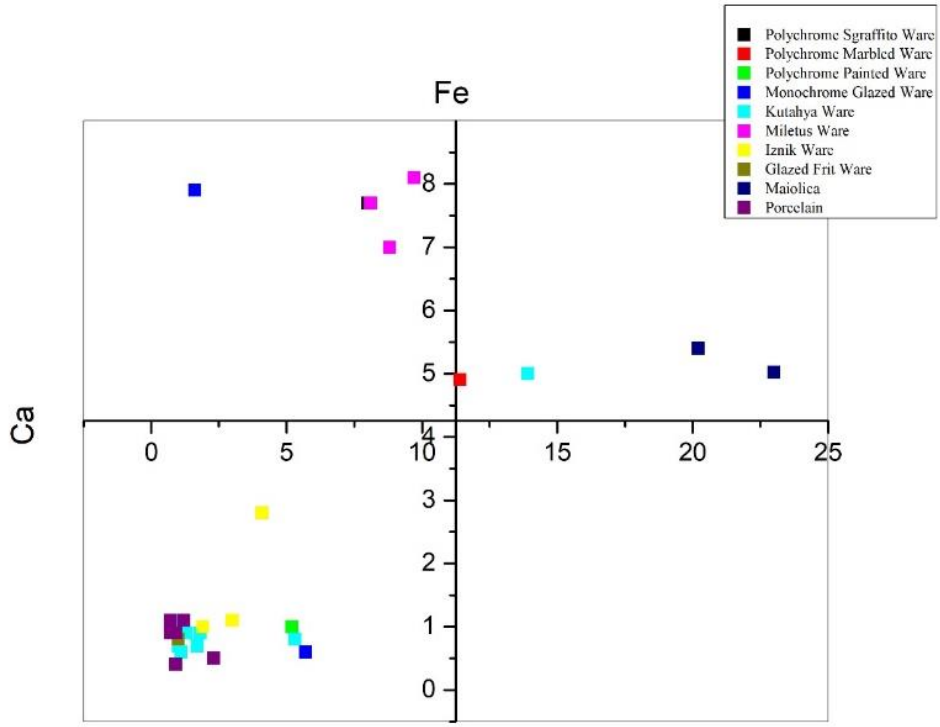
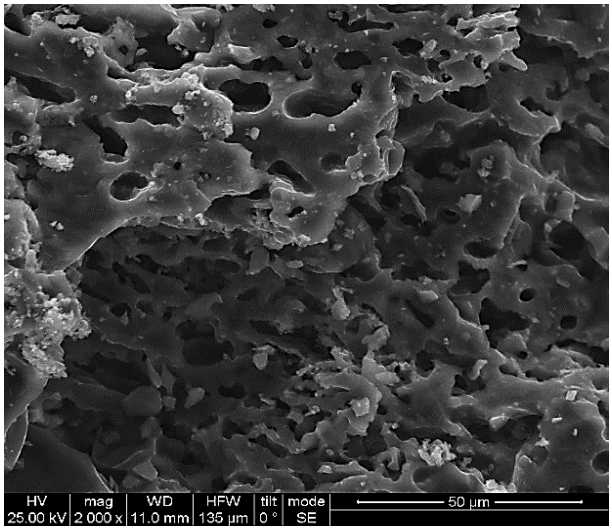
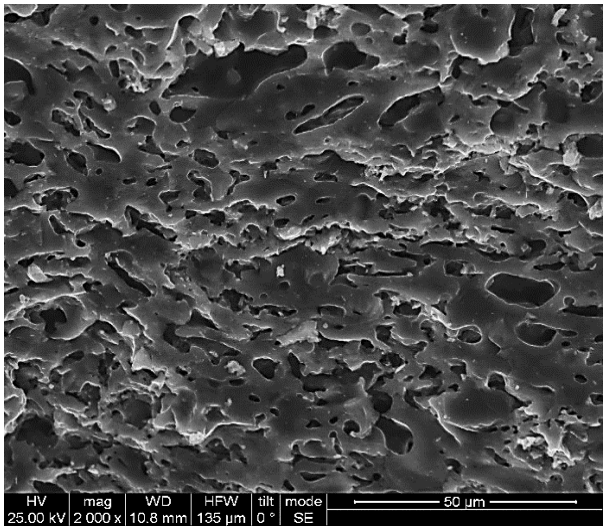


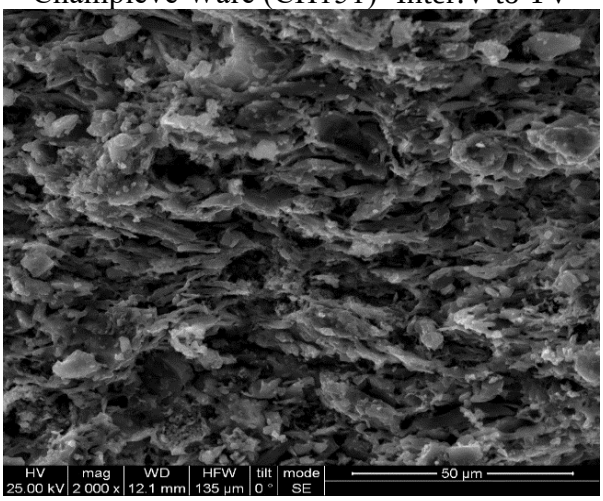
Figure 178 The correlation of Ca, Fe in the body fabrics of local and imported pottery from the Castle of Mytilene in Lesvos through Scanning Electron Microscopy (SEM). The samples have separated based on their pottery types.



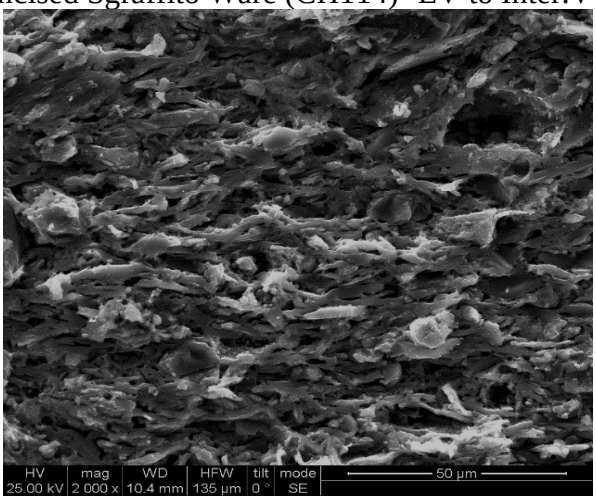
Champlevé Ware (CH151) -Inter.V to TV



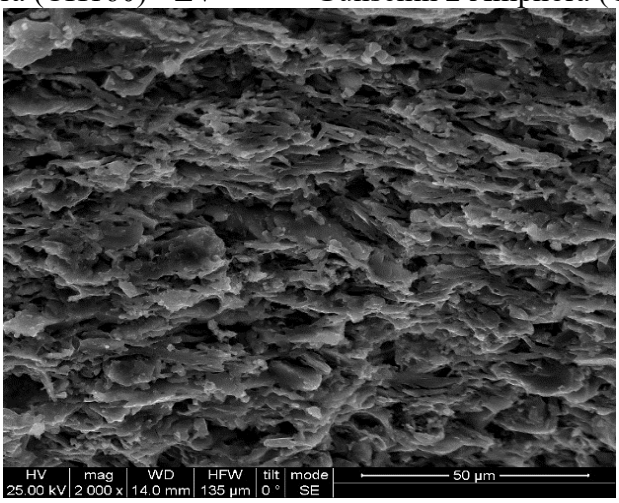
Incised Sgraffito Ware (CH114) -EV to Inter.V



Günsenin 3 Amphora (CH160) - EV

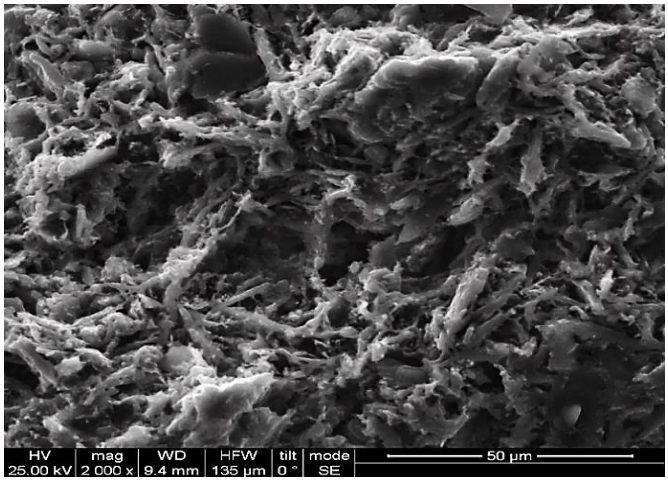


Günsenin 2 Amphora (CH162) - EV

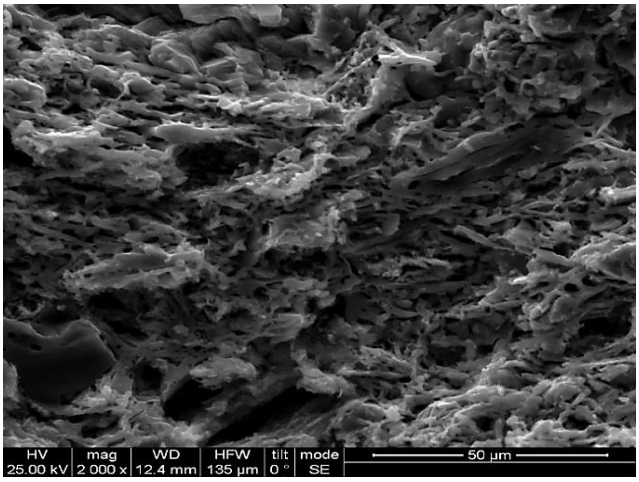


A8A Amphora (CH155) -IV to EV

Figure 179 Stages of Vitrification in the sampled pottery collection from Chalcis in Euboea.

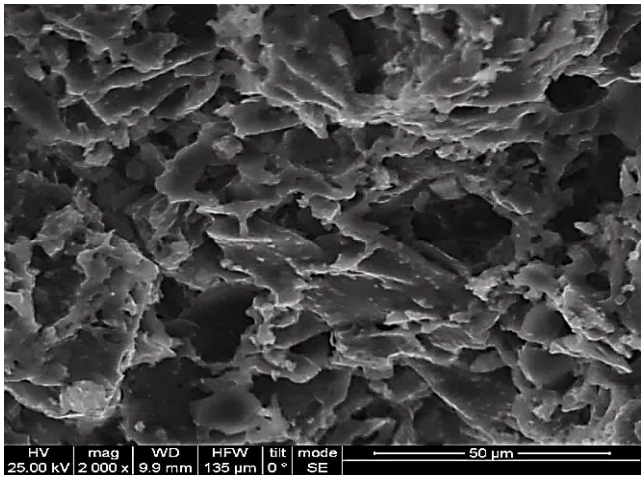


Polychrome Painted Ware/Maiolica (AAG30)- EV

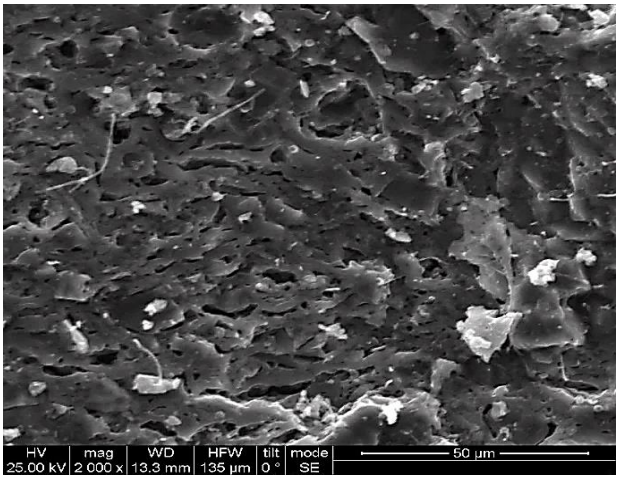


Green and Brown Painted Ware (AAG69)- EV-Int.V

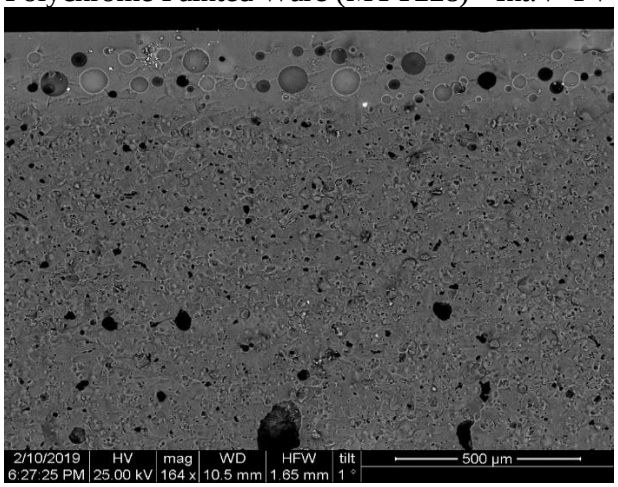
Figure 180 Stages of Vitrification in the sampled pottery collection from the Athenian Agora in Attica.



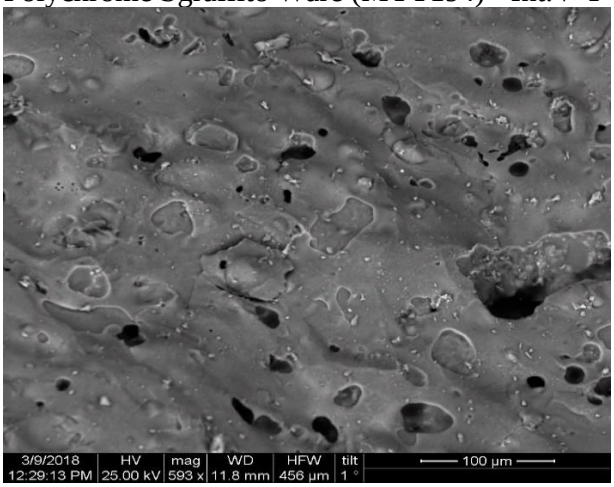
Polychrome Painted Ware (MYT228) - Int.V-TV



Polychrome Sgraffito Ware (MYT194) - Int.V-TV

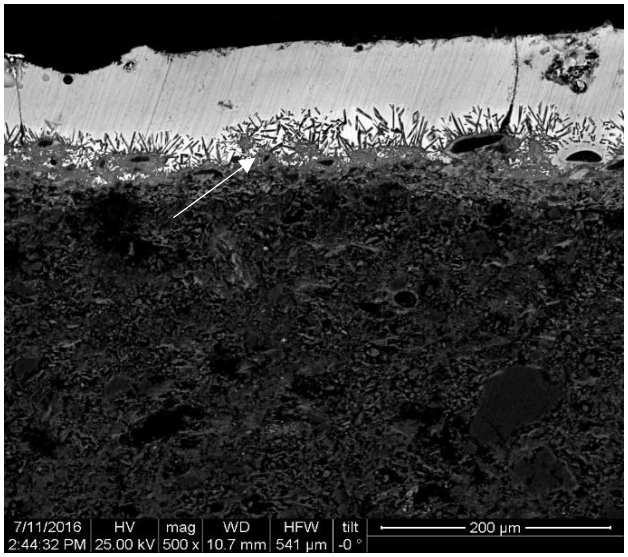


Porcelain (MYT222)- TV

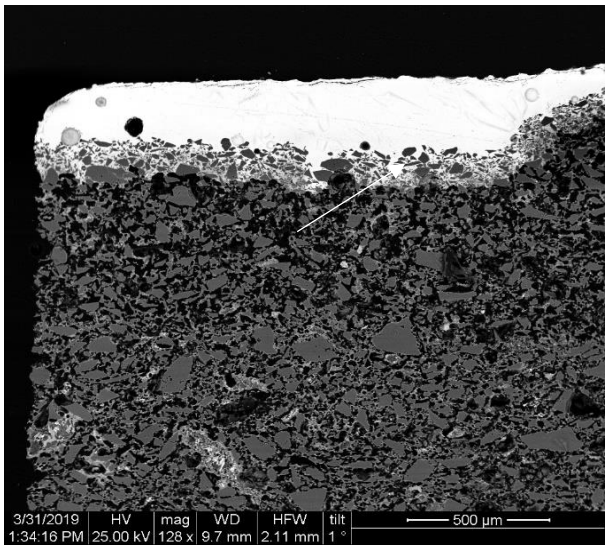


Porcelain (MYT180)- TV

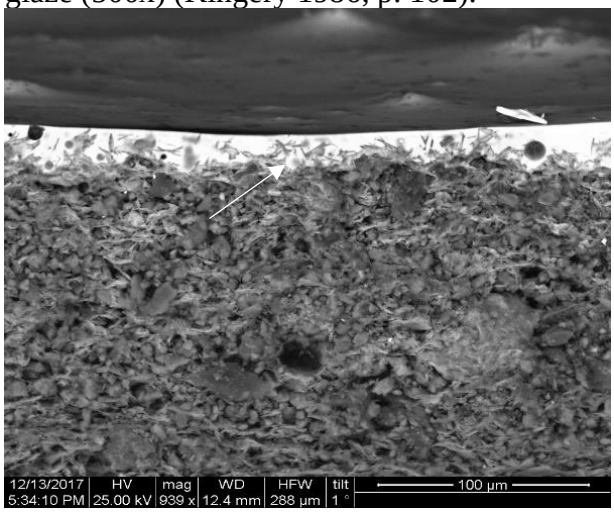
Figure 181 Stages of Vitrification in the sampled pottery collection from the Castle of Mytilene in Lesvos.



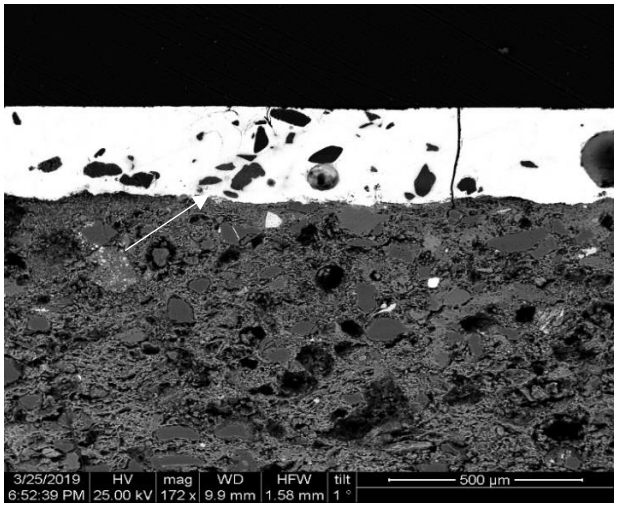
A fresh fractured cross section of the Pottery waster (AGBZY859) glaze, slip and body shows the growth of **Anorthite** crystals from the slip into the glaze to form a white layer that serves as a reflective ground for the glaze. This white ground has a rough surface that scatters the light, thus adding to the soft, diffuse appearance of the glaze (500x) (Kingery 1986, p. 102).



A fresh fractured cross section of the Iznik Ware (MYT168) glaze, slip and body shows the **Alkaline-lead glaze.** Addition of **Tin oxide**, the upper dark particles, in suspension that give the desired white translucence (130x) (Kingery 1986, p. 117).

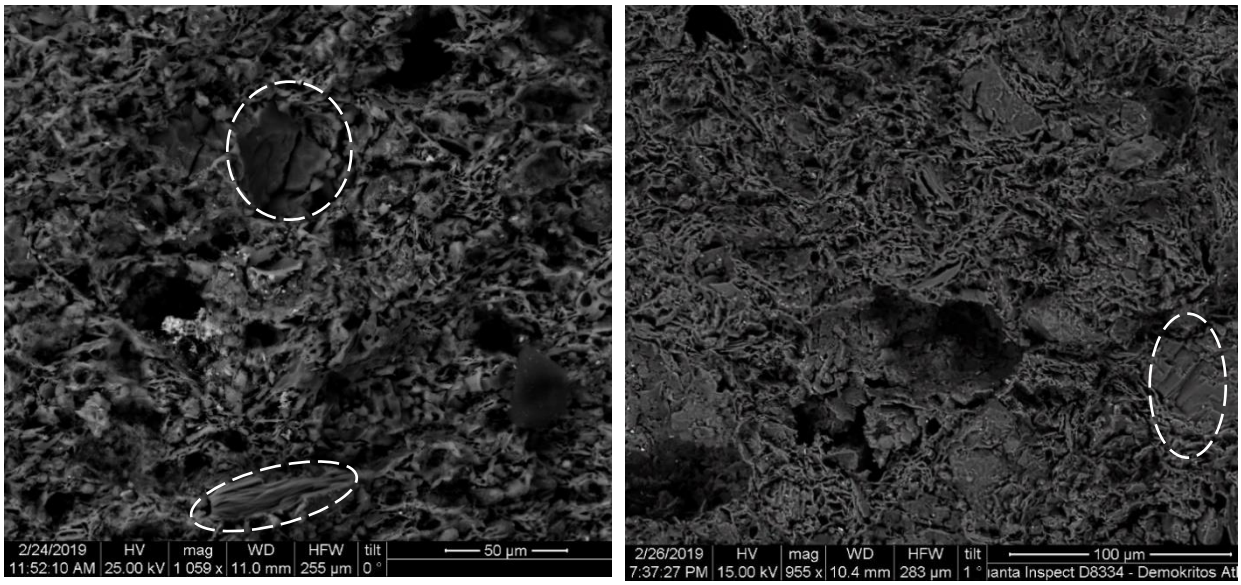


A fresh fractured cross section of the Splashed Ware (CH89) glaze, slip and body shows tiny crystals of **Mullite** derived from the clay material, and also from the feldspar, are immersed in the continuous glass phase (900x) (Kingery 1986, pp. 22,23,82).

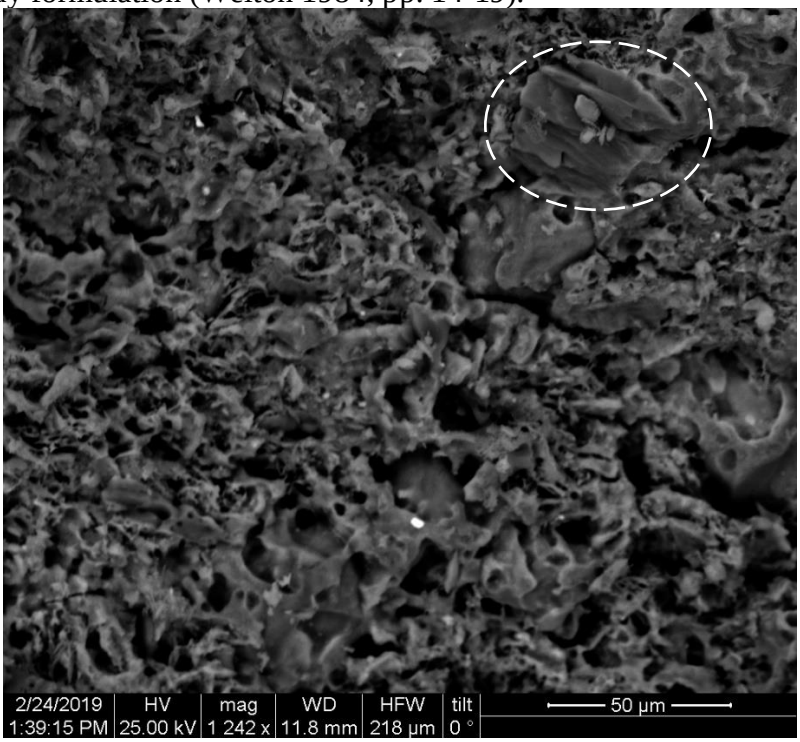


A fresh fractured cross section of the Lustre Ware (CH110) glaze, slip and body shows the **Alkaline-Lead** glaze. Addition of **Tin oxide**, large dark particles, the upper dark particles, in suspension that give the desired white translucence (170x) (Kingery 1986, p. 117).

Figure 182 The formation of new minerals in the glaze under firing process.

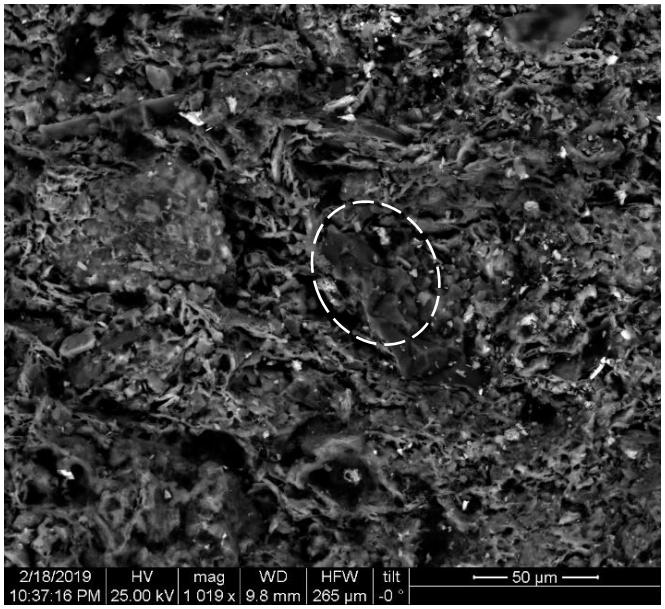


A fresh fractured cross section of the Monochrome Glazed Ware (AAG53, left 1000x) and Green and Brown Painted Ware (AAG61, right 1000x) shows the **Cristobalite** grains derived from quartz in the body formulation (Welton 1984, pp. 14-19).

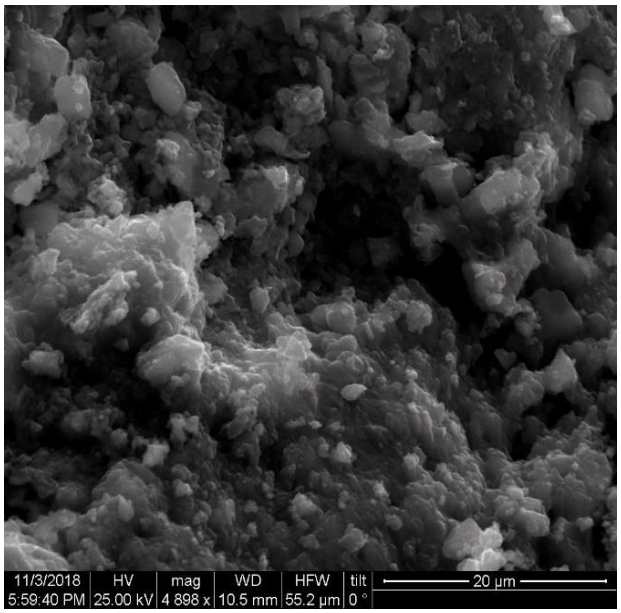


Monochrome Glazed Ware (AAG71) shows the **Cristobalite** grains derived from quartz in the body formulation (1200x) (Welton 1984, pp. 14-19).

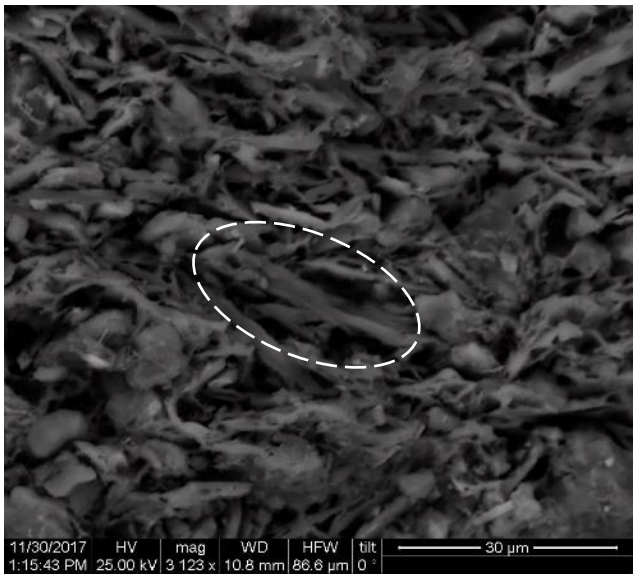
Figure 183 The formation of Cristobalite in the body fabric under firing process.



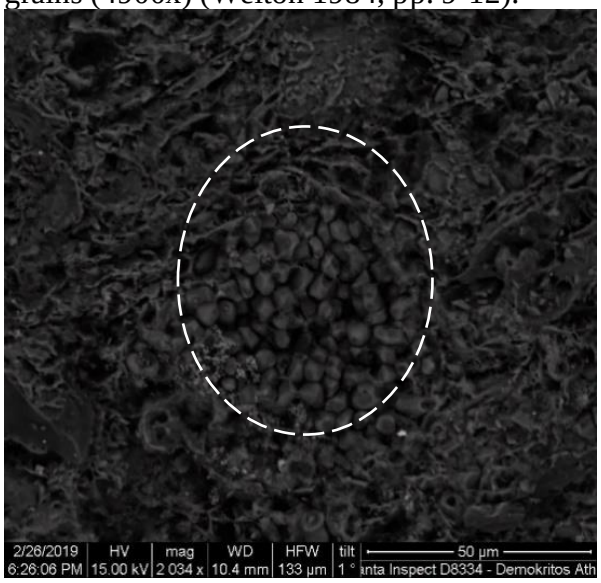
A fresh fractured cross section of the Zeuxippus Ware Subtype (AAG50) shows this formation of **Halite** in the body fabric (1000x).



A fresh fractured cross section of the Maiolica (CH154) shows the Authigenic **Quartz** overgrowth quartz development, the formation of a uniform rim of small rhombic quartz crysrals or druse around the detrital quartz grains (4900x) (Welton 1984, pp. 9-12).



A fresh fractured cross section of the Roulette/Veneto Ware (CH85) shows this formation of **Mullite** in the body fabric (3.100x) (Kingery 1986, pp. 22,23,82).



A fresh fractured cross section of the Polychrome Painted Ware/Maiolica (AAG29) shows this formation of **Calcium** in the body formulation (2000x).

Figure 184 The formation of new minerals in the body fabric under firing process or deterioration (as Halite).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	MnO	Fe2O3	CoO	NiO	CuO	ZnO	SnO2	PbO
GREEN																				
Splashed Ware	**CH89**	*average*	0.0	0.6	4.4	18.6	0.0	22.6	0.0	0.4	0.8	0.0	0.0	1	0.0	0.0	0.8	0.0	0.0	50.8
YELLOW																				
Splashed Ware	**CH89**	*average*	0.0	0.5	5.0	21.3	0.0	21.3	0.0	0.7	0.8	0.0	0.0	1	0.0	0.0	0.0	0.0	0.0	49.4
Lustre Ware	**CH110**	*average*	2.1	0.0	2.2	42.3	0.0	17.6	1.4	1.9	1.1	0.0	0.0	0.8	0.0	0.0	0.0	0.0	5.2	25.5
Maiolica	**CH154**	*average*	1.6	1.3	4.1	33.5	0.0	17.5	0.0	3.2	1.4	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	36.7
BROWN																				
Didymoteicho Ware	**CH135**	*average*	0.3	0.5	5.9	47.3	0.0	16.5	0.0	1.3	1.3	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	23.9
TURQUOISE																				
Glazed Frit Ware	**CH106**	*average*	8.7	2.9	1.7	47	0.0	12.5	1.01	0.8	3.9	0.0	0.0	0.5	0.0	0.0	0.9	0.0	6.8	13.4
BLUE																				
Maiolica	**CH154**	*average*	1	0.8	4.2	44.2	0.0	20.2	0.84	3.9	0.9	0.0	0.0	1.1	0.6	0.5	0.0	0.0	0.0	21.9
DARK																				
Didymoteicho Ware	**CH135**	*average*	0.6	1.3	8.4	47.2	0.0	16.8	0.42	1.5	1.7	0.27	0.0	3.6	0.0	0.0	0.0	0.0	0.0	18.2

Table 38 Scanning Electron Microscopy analysis of the pigments in the sampled pottery collection from Chalcis in Euboea (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	MnO	Fe2O3	CoO	NiO	CuO	ZnO	SnO2	PbO
Champlevé Ware	**CH84**	*average*	0.0	0.6	5.3	20.6	0.0	21.8	1.1	0.3	0.9	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	48.3
		stdev	0.0	0.2	0.2	0.1	0.0	0.5	0.1	0.1	0.5	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.8
Champlevé Ware	**CH92**	*average*	0.4	0.8	5.9	22.3	0.0	25.8	1.1	0.5	1.1	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	40.4
		stdev	0.03	0.1	0.4	0.4	0.0	0.7	0.1	0.1	0.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2
Monochrome Glazed Ware	**CH137**	*average*	0.5	1.1	8.8	35.5	0.0	19.6	0.0	1.4	1.5	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	28.9
		stdev	0.2	0.1	0.3	1.2	0.0	0.3	0.0	0.2	0.4	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.9
Slip-Painted Ware	**CH94**	*average*	0.0	0.9	5.03	26.7	0.0	25.7	0.0	0.1	1.7	0.0	0.0	1.7	0.0	0.0	1.5	0.0	0.0	36.6
		stdev	0.0	0.3	0.2	1.3	0.0	1	0.0	0.2	0.8	0.0	0.0	0.7	0.0	0.0	0.04	0.0	0.0	2
Plain Glazed Ware	**CH88**	*average*	0.0	1.3	5.0	19.6	0.0	21.8	0.0	0.3	0.6	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	49.1
		stdev	0.0	0.2	0.2	0.7	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Didymoteicho Ware	**CH100**	*average*	0.0	0.8	3.4	29.8	0.0	25.5	0.0	0.4	1.4	0.0	0.0	1.5	0.0	0.0	0.8	0.0	0.0	36.5
		stdev	0.0	0.3	0.2	1.5	0.0	1	0.0	0.2	0.8	0.0	0.0	0.7	0.0	0.0	0.1	0.0	0.0	2.1
Maiolica	**CH154**	*average*	1.6	1.3	5.4	42.6	0.0	14.3	0.0	4.9	1.4	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	28
		stdev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Zeuxippus Ware	**CH101**	*average*	0.3	0.7	4.7	32	0.0	27.2	1.1	0.4	0.9	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	31.9
		stdev	0.1	0.2	0.7	1.9	0.0	0.4	0.1	0.2	0.5	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	1.5
Lustre Ware	**CH110**	*average*	1.9	0	2.4	46.9	0.0	16.4	1.3	1.9	1	0.0	0.0	0.7	0.0	0.0	0.0	0.0	4.5	23
		stdev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 39 Scanning Electron Microscopy analysis of polished samples' glazes in the sampled pottery collection from Chalcis in Euboea (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	K2O	CaO	TiO2	Fe2O3	CuO	PbO
Champlevé Ware	**CH84**	*average*	0.7	0.4	18.6	53.4	0.0	7.4	2.7	0.7	0.0	1	0.0	15
		stdev	0.1	0.1	0.3	1.1	0.0	0.2	0.4	0.2	0.0	0.4	0.0	0.5
Champlevé Ware	**CH92**	*average*	1.4	2.4	18.1	57.5	0.0	2.9	3.5	3.5	0.8	5.8	0.0	4.2
		stdev	0.03	0.1	0.2	0.8	0.0	0.7	0.2	0.5	0.1	0.3	0.0	0.4
Champlevé Ware	**CH141**	*average*	1.3	2.1	16.2	57.3	0.0	2.1	3.6	5.2	0.92	6.5	0.0	4.8
		stdev	0.1	0.2	0.4	0.6	0.0	0.3	0.1	0.2	0.06	0.2	0.0	0.6
Champlevé Ware	**CH148**	*average*	1	0.7	13.3	56.4	0.0	6.7	4	2.8	0.39	1.5	0.0	13.3
		stdev	0.1	0.1	0.8	2.07	0.0	0.1	0.5	0.7	0.02	0.1	0.0	0.1
Monochrome Glazed Ware	**CH137**	*average*	1.2	1.7	17.7	56.4	0.0	2.6	3.7	4.7	0.39	6	0.0	5.6
		stdev	0.2	0.3	0.1	3.2	0.0	0.8	1.2	1.1	0.55	0.1	0.0	2.6
Splashed Ware	**CH89**	*average*	0.6	1	12.3	61.1	0.0	5.9	3.3	1.1	0.32	2	0.0	12.5
		stdev	0.03	0.2	1.1	2.9	0.0	0.5	0.3	0.1	0.05	0.3	0.0	0.8
Slip-Painted Ware	**CH94**	*average*	1.7	2.5	18.6	51.1	0.0	3.5	4	4.7	0.92	6.5	0.0	6.5
		stdev	0.6	0.1	0.3	1.3	0.0	1	0.8	0.3	0.11	0.7	0.0	0.4
Didymoteicho Ware	**CH100**	*average*	0.8	1.1	26.7	64	0.0	0.0	3.3	1.3	1.26	1.5	0.0	0.0
		stdev	0.3	0.2	0.4	0.4	0.0	0.0	0.1	0.04	0.66	0.2	0.0	0.0
Didymoteicho Ware	**CH135**	*average*	0.6	0.8	13.1	61.6	0.0	5.8	3.2	3.7	0.0	1.8	0.0	9.6
		stdev	0.1	0.01	1.2	0.6	0.0	1.3	0.2	0.5	0.0	0.7	0.0	0.1
Maiolica	**CH154**	*average*	0.6	3.8	12.2	50.3	0.0	0.8	1.2	24.9	0.57	4.7	0.0	1.1
		stdev	0.5	0.1	3.04	2.5	0.0	0.2	0.8	5.1	0.21	0.2	0.0	1.6
Zeuxippus Ware	**CH101**	*average*	1.3	3.9	14.5	62.1	0.0	0.8	2	8.3	0.84	6.3	0.0	0.0
		stdev	0.1	0.3	0.5	0.5	0.0	0.7	0.3	1.1	0.09	0.6	0.0	0.0
Lustre Ware	**CH110**	*average*	1.2	3.2	10.2	60.1	0.0	1.5	1	15.9	1.01	5.9	0.0	0.0
		stdev	0.4	1	2.2	8	0.0	0.2	0.01	5.2	0.16	0.0	0.0	0.0

Table 40 Scanning Electron Microscopy analysis of polished samples' slips layers in the sampled pottery collection from Chalcis in Euboea (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Fe2O3	PbO
Champlevé Ware	**CH84**	*average*	1.1	2.1	19.5	57.3	0.0	0.0	0.0	4.2	6.2	1	8.5	0.0
		stdev	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.03	0.01	0.1	0.1	0.0
Champlevé Ware	**CH92**	*average*	1.6	2.7	20.1	58.6	0.0	0.0	0.0	3.8	5.5	0.9	6.8	0.0
		stdev	0.1	0.1	0.6	0.7	0.0	0.0	0.0	0.1	0.4	0.1	0.4	0.0
Champlevé Ware	**CH141**	*average*	1.3	2.2	17.1	62.4	0.0	0.0	0.0	3.4	5.9	0.9	6.8	0.0
		stdev	0.3	0.1	0.4	1.4	0.0	0.0	0.0	0.2	0.4	0.1	0.2	0.0
Champlevé Ware	**CH148**	*average*	1.3	2.1	17.4	62.3	0.0	0.0	0.0	3.8	5.6	1	6.6	0.0
		stdev	0.1	0.1	0.4	0.4	0.0	0.0	0.0	0.1	0.2	0.1	0.1	0.0
Monochrome Glazed Ware	**CH137**	*average*	1.3	2	19.4	59	0.0	1.1	0.0	3.8	5.3	1	7.2	0.0
		stdev	0.2	0.1	0.7	0.9	0.0	0.3	0.0	0.2	0.1	0.1	0.3	0.0
Splashed Ware	**CH89**	*average*	0.9	2.3	18.9	57.6	0.0	0.0	0.0	4.5	6.3	1	8.6	0.0
		stdev	0.2	0.1	0.3	0.8	0.0	0.0	0.0	0.04	0.5	0.1	0.04	0.0
Slip-Painted Ware	**CH94**	*average*	1.6	2.6	20.4	58.7	0.0	0.0	0.0	4.1	4.5	0.9	7.2	0.0
		stdev	0.3	0.04	0.2	1	0.0	0.0	0.0	0.1	0.3	0.1	0.3	0.0
Plain Glazed Ware	**CH88**	*average*	0.5	2.8	16.9	63.8	0.0	0.0	0.0	3.3	2.4	1.1	9.3	0.0
		stdev	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.04	0.2	0.01	0.2	0.0
Didymoteicho Ware	**CH100**	*average*	1.4	3.3	14.1	63.9	0.0	0.0	0.0	2.8	7.3	0.8	6.4	0.0
		stdev	0.3	0.2	0.5	0.9	0.0	0.0	0.0	0.1	0.1	0.02	0.1	0.0
Didymoteicho Ware	**CH135**	*average*	1	2.3	19.4	61.3	0.0	0.3	0.0	3.8	3.9	0.9	7.2	0.0
		stdev	0.1	0.03	0.3	0.9	0.0	0.5	0.0	0.1	0.2	0.1	0.4	0.0
Maiolica	**CH154**	*average*	0.7	3.1	12.8	48.7	0.0	0.6	0.0	1.4	26	0.7	6.1	0.0
		stdev	0.1	0.2	0.2	0.3	0.0	0.1	0.0	0.1	0.6	0.1	0.3	0.0
Zeuxippus Ware	**CH101**	*average*	1.5	4.1	15	61.4	0.0	0.0	0.0	2.3	8.8	0.9	6.1	0.0
		stdev	0.2	0.1	0.3	1.8	0.0	0.0	0.0	0.1	1.9	0.1	0.03	0.0
Glazed Frit Ware	**CH106**	*average*	1.9	1.1	7.3	85.5	0.0	0.1	0.4	1.1	1.2	0.0	0.5	0.8
		stdev	0.2	0.2	0.1	0.4	0.0	0.2	0.06	0.1	0.1	0.0	0.1	0.6
Lustre Ware	**CH110**	*average*	0.8	2.7	11.5	57.8	0.0	0.6	0.0	1.5	18.4	1.03	5.7	0.0
		stdev	0.1	0.2	0.7	0.6	0.0	0.5	0.0	0.2	0.9	0.2	0.4	0.0

Table 41 Scanning Electron Microscopy analysis of polished samples' fabrics in the sampled pottery collection from Chalcis in Euboea (%).

SAMPLES		Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CoO	NiO	CuO	ZnO	SnO2	PbO
YELLOW																				
Polychrome Painted Ware/Maiolica	AAG29	0.5	0.7	4.4	28.2	0.0	26.2	1	1.4	0.9	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	34.2
Polychrome Painted Ware/Maiolica	AAG30	0.6	0.5	3.2	25.5	0.0	28.8	1.2	1.1	1.6	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	34.7
Polychrome Painted Ware/Maiolica	AGBZY862	0.8	0.3	1.7	25.1	23.7	0.0	1.3	3	1.2	0.0	0.0	0.1	0.8	0.0	0.0	0.3	0.0	0.0	41.6
Polychrome Painted Ware/Maiolica	AGBZY863	0.3	0.3	2.5	23.3	0.0	25.1	1.4	1	1.7	0.0	0.0	0.0	2.4	0.0	0.0	0.4	0.0	0.0	41.7
Green and Brown Painted Ware	AAG69	0.5	0.8	7.6	30.7	0.0	16.9	0.0	1.1	1.5	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	38.2
Monochrome Glazed Ware	AGBZY837	0.0	0.0	5.2	25.7	0.0	24.1	1	0.5	0.6	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	42.1
Pottery waster	AGBZY827	0.8	0.8	18.2	60.6	0.0	2.2	0.9	8.9	2.5	0.8	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	3.2
Maiolica	AAG70	1.2	0.8	5.3	43.9	0.0	12.1	0.0	5.5	3.2	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	27.4
BROWN											0.0									
Polychrome Painted Ware/Maiolica	AGBZY862	0.8	0.8	2.2	23.8	22	0.0	1.4	2	1.9	0.0	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	39
Polychrome Painted Ware/Maiolica	AAG29	0.4	0.7	3.7	27.1	0.0	26.2	1.1	1.4	1.3	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.0	0.0	33.6
Polychrome Sgraffito Ware	AGBZY828	0.0	0.0	2.4	31.8	0.0	22.2	1.1	2	1	0.0	0.0	0.0	1.2	0.0	0.0	0.6	0.0	0.0	37.8
Polychrome Sgraffito Ware	AAG37	0.7	1	3.6	27.7	0.0	26.7	0.0	1.2	1.2	0.0	0.0	0.0	4.1	0.0	0.0	1.2	0.0	0.0	32.6
Monochrome Glazed Ware	AGBZY837	0.6	1.1	3.9	22.8	1.3	24.6	1.2	0.6	1.5	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	40.5
Pottery waster	AGBZY868	0.1	0.9	5.2	21.6	0.0	22.6	1.1	0.5	4.6	0.2	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	39.9
Maiolica	AAG70	1.2	0.8	6.4	47.9	0.0	9.8	0.0	6.4	2.8	0.0	0.0	1.4	0.9	0.0	0.0	0.0	0.0	0.0	22.5
GREEN																				
Polychrome Painted Ware/Maiolica	AGBZY862	1.5	1.3	2.9	23.7	23.5	0.0	1.6	2.5	1	0.0	0.0	0.0	0.7	0.0	0.0	0.7	0.0	0.0	40.5
Polychrome Painted Ware/Maiolica	AAG29	0.5	0.8	4.6	30.9	0.0	24.5	1	1.6	0.9	0.0	0.0	0.0	1.1	0.4	0.0	0.5	0.0	0.0	33.2
Polychrome Painted Ware/Maiolica	AAG30	0.9	0.8	3.7	27	0.0	27.3	1	1.7	2.4	0.4	0.0	0.0	1	0.0	0.0	0.6	0.0	0.0	33.3
Polychrome Painted Ware/Maiolica	AGBZY863	0.3	0.6	2.3	25	0.0	24.6	1.4	1.2	1.2	0.0	0.0	0.0	0.7	0.0	0.0	1.1	0.0	0.0	41.7
Polychrome Sgraffito Ware	AAG37	0.2	0.7	4.9	28.6	0.0	26.7	0.0	1.8	1.3	0.0	0.0	0.0	1.1	0.0	0.0	2	0.0	0.0	31.8
Polychrome Sgraffito Ware	AGBZY828	0.0	0.0	3.1	28.1	0.0	22.6	0.7	2.1	1.2	0.0	0.0	0.0	1.3	0.0	0.0	1.9	0.0	0.0	39.2
Polychrome Sgraffito Ware	AGBZY829	0.4	0.7	4.02	39.7	0.1	0.0	0.2	2.5	1.6	0.4	0.2	0.2	1.5	0.0	0.0	1.3	0.0	0.0	47.5
Green and Brown Painted Ware	AGBZY854	0.5	1.9	13.4	20.7	0.0	9.9	0.6	0.9	1.1	0.0	0.0	10.1	6.3	0.0	0.0	16.7	0.0	0.0	68.2
Monochrome Glazed Ware	AGBZY838	0.4	0.6	4.7	22.7	0.0	21.8	0.9	1.5	2.5	0.1	0.0	0.0	1.5	0.0	0.0	1	0.0	0.0	42.6
BLUE																				
Polychrome Painted Ware/Maiolica	AAG29	0.5	0.8	3.8	31.9	0.0	25.5	1	1.5	1	0.0	0.0	0.0	1.3	0.5	0.3	0.1	0.0	0.0	31.7
Polychrome Painted Ware/Maiolica	AAG30	0.7	0.7	3.7	25.9	0.0	27.7	1.1	1.3	1.6	0.3	0.0	0.0	2.7	0.4	0.0	0.0	0.0	0.0	34.1
Spanish Lustre Ware	AAG68	0.5	1	5	26.8	0.0	17.5	0.9	1	1.6	0.0	0.0	0.0	1.8	0.5	0.0	0.0	0.0	0.0	43.5
Maiolica	AAG70	1.1	1.2	5.6	56.3	0.0	0.0	0.0	6.1	3	0.0	0.0	0.0	1.1	0.6	1.2	0.0	0.0	0.0	23.9
TURQUOISE																				
Maiolica	AAG70	0.6	0.6	6.6	47.8	0.0	9.5	0.0	6.4	2.8	0.0	0.0	0.0	1.5	0.0	0.0	1.8	0.0	0.0	22.4
DARK																				
Green and Brown Painted Ware	AGBZY847	0.0	0.0	0.4	2.6	0.0	2.5	0.1	0.1	0.3	0.0	0.0	1.4	0.5	0.0	0.0	0.0	0.0	0.0	92.2
Green and Brown Painted Ware	AGBZY854	1	1.4	14.7	50.2	0.0	7.7	1.1	4.2	5.6	1	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0	11

Table 42 Scanning Electron Microscopy analysis of the pigments in the sampled pottery collection from the Athenian Agora in Attica (%).

GLAZE	SAMPLE		Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CoO	NiO	CuO	ZnO	SnO2	PbO
Polychrome Painted Ware/Maiolica	**AGBZY861**	*average*	0.0	0.8	3.1	42.5	0.0	2.5	0.1	2.5	5.2	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	41.1
		stdev	0.0	0.0	0.01	0.02	0.0	0.01	0.01	0.0	0.04	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Polychrome Painted Ware/Maiolica	**AGBZY863**	*average*	0.4	1	3.7	31.9	0.0	19.1	1.8	3.1	6	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	31
		stdev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Polychrome Sgraffito Ware	**AGBZY860**	*average*	0.6	0.9	3.4	42.7	0.4	0.0	0.2	4.5	2.6	0.4	0.3	0.0	1.5	0.0	0.0	0.0	0.0	0.0	42.5
		stdev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pottery waster	**AGBZY859**	*average*	1.4	0.5	4.3	42.9	0.2	0.0	0.4	4.8	2.2	0.7	0.4	0.4	1.4	0.0	0.0	0.0	0.0	0.0	41.7
		stdev	0.2	0.1	0.01	1.7	0.0	0.0	0.1	0.01	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.4
Pottery waster	**AGBZY868**	*average*	0.1	0.4	3.1	25.1	0.0	24.8	1.4	0.6	2.1	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	41.5
		stdev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spanish Lustre Ware	**AAG68**	*average*	0.6	0.8	3.7	29.4	0.0	18.4	1	0.9	1.1	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	43.5
		stdev	0.2	0.1	0.1	0.28	0.0	0.29	0.1	0.1	0.17	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.6
Maiolica	**AAG70**	*average*	1.4	0.7	6.6	52.6	0.0	9.9	0.0	6.1	2.9	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	19.3
		stdev	0.3	0.3	0.7	2.6	0.0	0.3	0.0	0.3	0.03	0.0	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	3.7

Table 43 Scanning Electron Microscopy analysis of polished samples' glazes in the sampled pottery collection from the Athenian Agora in Attica (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CoO	CuO	PbO
Polychrome Painted Ware/Maiolica	**AGBZY861**	*average*	0.0	0.1	2.5	5.8	0.0	0.0	0.4	0.5	1.7	0.0	0.0	0.0	0.7	0.0	0.0	88.3
		stdev	0.0	0.1	0.1	0.01	0.0	0.0	0.01	0.1	0.3	0.0	0.0	0.0	0.2	0.0	0.0	0.4
Polychrome Painted Ware/Maiolica	**AGBZY862**	*average*	0.5	0.5	16.4	42.5	0.0	11.2	1.7	3.4	1.1	0.6	0.0	0.0	1.2	0.0	0.0	20.9
		stdev	0.1	0.1	0.9	1.8	0.0	1.4	0.03	0.3	0.1	0.2	0.0	0.0	0.6	0.0	0.0	0.2
Polychrome Painted Ware/Maiolica	**AGBZY863**	*average*	0.4	1.7	16.9	44.8	0.0	8.5	1.3	4.7	4.8	0.8	0.0	0.0	2.6	0.0	0.0	13.6
		stdev	0.2	1.7	2.4	1.4	0.0	2.7	0.2	0.4	4.5	0.2	0.0	0.0	2.9	0.0	0.0	4.1
Polychrome Painted Ware/Maiolica	**AAG29**	*average*	0.6	4.2	13.7	55.6	0.0	1.5	0.4	2.7	10.2	0.7	0.0	0.0	6.9	0.0	0.0	3.5
		stdev	0.1	0.1	0.6	1.8	0.0	0.5	0.3	0.04	0.5	0.0	0.0	0.0	2.6	0.0	0.0	0.5
Polychrome Painted Ware/Maiolica	**AAG30**	*average*	0.6	0.7	14.7	56	0.0	8.7	0.6	4.2	1.9	0.7	0.0	0.0	1.3	0.0	0.0	10.7
		stdev	0.2	0.1	1.8	6.9	0.0	0.6	0.1	0.8	1.3	0.4	0.0	0.0	0.4	0.0	0.0	1.5
Polychrome Sgraffito Ware	**AGBZY828**	*average*	0.5	1.8	15.6	37.3	0.0	9.2	1.4	4.8	7.6	1	0.0	0.0	3.6	0.0	0.0	17.2
		stdev	0.0	1.8	1.1	5.8	0.0	6.1	0.1	1.6	9.2	0.5	0.0	0.0	3.4	0.0	0.0	10.1
Polychrome Sgraffito Ware	**AGBZY829**	*average*	0.5	0.5	22.8	38.4	0.1	0.0	1	5.6	0.7	1.1	0.1	0.1	0.8	0.0	0.0	28.4
		stdev	0.1	0.03	0.7	1	0.1	0.0	0.7	1.3	0.4	0.7	0.1	0.2	0.2	0.0	0.0	3.8
Polychrome Sgraffito Ware	**AGBZY860**	*average*	0.5	1.1	15.6	60.7	0.2	0.0	1.2	7.9	1.9	0.5	0.3	0.0	1.7	0.0	0.0	8.5
		stdev	0.1	0.2	0.2	0.3	0.1	0.0	0.01	0.2	0.4	0.3	0.01	0.0	0.3	0.0	0.0	0.3
Polychrome Sgraffito Ware	**AAG37**	*average*	0.7	1.7	20.1	44.2	0.0	10.1	0.0	4.5	4.5	0.6	0.0	0.0	2	0.0	0.0	11.6
		stdev	0.1	0.6	0.1	0.2	0.0	1.4	0.0	0.8	2.9	0.1	0.0	0.0	1	0.0	0.0	2
Green and Brown Painted Ware	**AGBZY854**	*average*	0.8	1.9	14.9	47.1	0.0	9.4	0.9	3.3	3.9	0.0	0.0	0.0	2.8	0.0	0.0	15.1
		stdev	0.1	0.2	0.7	0.5	0.0	0.8	0.1	0.2	0.8	0.0	0.0	0.0	0.2	0.0	0.0	1.7
Green and Brown Painted Ware	**AAG69**	*average*	0.8	0.7	15.9	52.1	0.0	7.9	0.0	3	0.9	0.3	0.0	0.0	0.9	0.0	0.0	17.5
		stdev	0.3	0.1	0.7	0.7	0.0	0.2	0.0	0.2	0.1	0.01	0.0	0.0	0.04	0.0	0.0	0.4
Monochrome Glazed Ware	**AGBZY837**	*average*	0.6	0.7	19.2	53.5	0.0	6	0.5	5.3	1.7	0.6	0.0	0.0	1.2	0.0	0.0	10.8
		stdev	0.1	0.1	1.3	3.9	0.0	0.6	0.03	1.4	0.5	0.02	0.0	0.0	0.1	0.0	0.0	1.5
Pottery waster	**AGBZY827**	*average*	0.3	2.9	13.3	44.2	0.0	2.3	1.5	1.7	26.9	0.8	0.0	0.0	6.2	0.0	0.0	0.0
		stdev	0.1	0.2	0.3	0.3	0.0	0.1	0.01	0.2	0.4	0.1	0.0	0.0	0.3	0.0	0.0	0.0
Pottery waster	**AGBZY832**	*average*	0.4	1.1	21.7	66	0.0	1.03	1.1	2.4	1.9	0.7	0.0	0.0	2.3	0.0	0.0	1.6
		stdev	0.01	0.2	3.2	1	0.0	0.0	0.1	0.3	0.6	0.1	0.0	0.0	0.3	0.0	0.0	0.0
Pottery waster	**AGBZY859**	*average*	0.9	0.4	18.3	49.3	0.1	0.0	0.8	9.1	1	0.5	0.2	0.1	1	0.0	0.0	18.3
		stdev	0.1	0.2	0.2	0.4	0.1	0.0	0.01	0.3	0.4	0.1	0.01	0.01	0.1	0.0	0.0	0.1
Pottery waster	**AGBZY867**	*average*	0.6	2.3	11.8	49.4	0.0	4.03	1.2	5.2	9.4	2.2	0.0	0.0	14	0.0	0.0	0.0
		stdev	0.1	0.3	1.7	1.1	0.0	0.04	0.3	0.1	2.8	0.1	0.0	0.0	2.1	0.0	0.0	0.0
Pottery waster	**AGBZY868**	*average*	0.4	2.03	14.1	47.4	0.0	7.4	1.6	3.4	5.5	0.9	0.0	0.0	6	0.0	0.0	11.5
		stdev	0.2	1	0.1	1.1	0.0	2.6	0.4	0.3	3.1	0.2	0.0	0.0	0.3	0.0	0.0	2.9
Spanish Lustre Ware	**AAG68**	*average*	0.6	0.9	28.3	60.2	0.0	1.9	0.6	2.3	2.01	1.2	0.0	0.0	1.1	0.0	0.0	1
		stdev	0.1	0.2	0.8	5.4	0.0	2.3	0.7	0.1	1.3	0.1	0.0	0.0	0.2	0.0	0.0	0.0
Maiolica	**AAG70**	*average*	1.1	5.02	13.7	46.8	0.0	0.0	0.0	3.9	25.9	0.8	0.0	0.0	2.9	0.0	0.0	0.0
		stdev	0.2	0.4	0.6	2.2	0.0	0.0	0.0	0.8	2.8	0.1	0.0	0.0	1	0.0	0.0	0.0

Table 44 Scanning Electron Microscopy analysis of polished samples' slips in the sampled pottery collection from the Athenian Agora in Attica (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CuO	PbO
Polychrome Painted Ware/Maiolica	**AGBZY861**	*average*	0.0	3.5	14.1	48.7	0.0	2.2	1.3	4	18.1	0.6	0.0	0.0	7.5	0.0	0.0
		stdev	0.0	0.03	0.1	0.5	0.0	0.7	0.1	0.01	0.4	0	0.0	0.0	0.8	0.0	0.0
Polychrome Painted Ware/Maiolica	**AGBZY862**	*average*	0.1	3.3	16.4	50.8	0.0	1.1	2.2	4.1	13.3	1.1	0.0	0.0	7.8	0.0	0.0
		stdev	0.01	0.1	0.1	1.1	0.0	0.5	0.2	0.3	0.4	0.1	0.0	0.0	0.1	0.0	0.0
Polychrome Painted Ware/Maiolica	**AGBZY863**	*average*	0.5	3.7	15.3	52.8	0.0	1.4	1.4	3.3	13.6	1.1	0.0	0.0	7	0.0	0.0
		stdev	0.1	0.1	0.04	0.8	0.0	0.4	0.1	0.1	1.5	0.01	0.0	0.0	0.1	0.0	0.0
Polychrome Painted Ware/Maiolica	**AAG29**	*average*	0.5	4.1	15.2	57.5	0.0	0.0	0.6	2.9	12.6	0.9	0.0	0.0	5.9	0.0	0.0
		stdev	0.1	0.2	0.2	0.3	0.0	0.0	0.1	0.1	0.1	0.04	0.0	0.0	0.4	0.0	0.0
Polychrome Painted Ware/Maiolica	**AAG30**	*average*	1	3.8	14	55.6	0.0	0.0	0.5	3	15.4	0.8	0.0	0.0	5.9	0.0	0.0
		stdev	0.6	0.3	0.2	1.6	0.0	0.0	0.5	0.3	0.5	0.1	0.0	0.0	0.2	0.0	0.0
Polychrome Sgraffito Ware	**AGBZY828**	*average*	0.6	3.8	15.5	47.5	0.0	1.1	1.2	3.5	17.2	1.2	0.0	0.0	8.3	0.0	0.0
		stdev	0.1	0.1	0.2	0.5	0.0	0.4	0.4	0.1	0.6	0.2	0.0	0.0	0.2	0.0	0.0
Polychrome Sgraffito Ware	**AGBZY829**	*average*	0.6	3.8	16.1	48.6	0.4	0.9	0.9	3.2	14.6	1.2	0.2	0.3	7.7	0.2	1
		stdev	0.1	0.2	0.3	2.3	0.1	0.04	0.01	0.3	0.9	0.1	0.2	0.2	0.1	0.0	0.0
Polychrome Sgraffito Ware	**AGBZY860**	*average*	0.4	3.6	14	50.9	0.3	0.0	1.1	3.1	16.9	1.1	0.2	0.2	6.8	0.0	1.5
		stdev	0.2	0.3	0.6	1.7	0.2	0.0	0.1	0.5	0.6	0.1	0.1	0.1	0.2	0.0	1.7
Polychrome Sgraffito Ware	**AAG37**	*average*	0.7	4.3	17.9	54.8	0.0	0.0	0.0	2.1	13.3	0.9	0.0	0.0	6	0.0	0.0
		stdev	0.2	0.1	0.2	0.2	0.0	0.0	0.0	0.2	0.3	0.02	0.0	0.0	0.1	0.0	0.0
Green and Brown Painted Ware	**AGBZY847**	*average*	0	2.3	12.7	48.2	0.0	0.0	0.8	5.3	14.8	2.1	0.0	0.0	14	0.0	0.0
		stdev	0	0.1	0.2	0.1	0.0	0.0	0.3	0.2	0	0.6	0.0	0.0	0.9	0.0	0.0
Green and Brown Painted Ware	**AGBZY853**	*average*	0.6	3.6	15.5	58.4	0.5	0.6	1.1	4	9.1	1.1	0.3	0.2	5	0.0	0.0
		stdev	0.1	0.2	0.5	1.7	0.1	0.3	0.3	0.2	1.3	0.1	0.1	0.1	0.3	0.0	0.0
Green and Brown Painted Ware	**AGBZY854**	*average*	0.7	3.3	16.2	61.6	0.0	0.6	0.7	4.1	6.3	1	0.0	0.0	5.5	0.0	0.0
		stdev	0.3	0.3	0.2	2.3	0.0	0.0	0.1	0.1	0.7	0.1	0.0	0.0	0.4	0.0	0.0
Green and Brown Painted Ware	**AAG69**	*average*	0.6	3.8	17.6	59.3	0.0	0.0	0.0	3.5	8.7	0.9	0.0	0.0	5.7	0.0	0.0
		stdev	0.2	0.3	0.4	0.6	0.0	0.0	0	0.1	0.3	0.1	0.0	0.0	0.3	0.0	0.0

Table 45 Scanning Electron Microscopy analysis of polished samples' fabrics in the sampled pottery collection from the Athenian Agora in Attica (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CuO	PbO
Monochrome Glazed Ware	**AGBZY837**	*average*	0.1	3.2	14.6	51.4	0.0	0.3	0.1	3.1	18	1.1	0.0	0.0	7.8	0.0	0.0
		stdev	0.1	0.2	0.1	0.5	0.0	0.0	0.1	0.4	1.2	0.2	0.0	0.0	0.1	0.0	0.0
Monochrome Glazed Ware	**AGBZY838**	*average*	0.4	3.3	13.7	53.5	0.0	0.8	1.1	3.2	15.9	1	0.0	0.0	7.3	0.0	0.0
		stdev	0.4	0.4	0.3	1.9	0.0	0.1	0.02	0.1	0.5	0.1	0.0	0.0	0.5	0.0	0.0
Pottery waster	**AGBZY827**	*average*	0.2	3.5	14.8	48.6	0.0	0.6	1.2	2.9	19.4	0.9	0.0	0.0	8	0.0	0.0
		stdev	0.1	0.1	0.5	2.1	0.0	0.04	0.8	0.3	3.7	0.1	0.0	0.0	0.1	0.0	0.0
Pottery waster	**AGBZY832**	*average*	0.3	4.5	15.2	50.8	0.0	0.0	1.2	4.5	14.2	1.1	0.0	0.0	7.6	0.0	0.6
		stdev	0.01	0.1	0.2	0.5	0.0	0.0	0.02	0.2	1.3	0.04	0.0	0.0	0.2	0.0	0.2
Pottery waster	**AGBZY836**	*average*	0.4	2.5	12	47	0.0	0.0	2.3	5.2	16.4	0	0.0	0.0	14.3	0.0	0.0
		stdev	0.1	0.1	0.1	0.5	0.0	0.0	0.02	0.1	0.1	0	0.0	0.0	0.7	0.0	0.0
Pottery waster	**AGBZY859**	*average*	0.8	4.4	13.7	47.2	0.3	0.8	1.4	2.9	19.1	1	0.3	0.2	7.1	0.0	0.7
		stdev	0.2	0.3	0.8	1	0.2	0.7	0.3	0.4	2	0.2	0.1	0.2	0.5	0.0	1.2
Pottery waster	**AGBZY864**	*average*	0.5	5.3	13.8	54.2	0.0	0.0	1.5	3.8	12.5	1.3	0.0	0.0	7.1	0.0	0.0
		stdev	0.1	1.1	1.8	2.3	0.0	0.0	0.2	0.7	6	0.3	0.0	0.0	2.3	0.0	0.0
Pottery waster	**AGBZY867**	*average*	1.4	3.1	11.4	42.4	3.1	2	1.4	5.1	11	2.1	0.0	0.0	17.1	0.0	0.0
		stdev	1.4	0.5	0.9	3.2	0.0	1.2	0.4	0.1	4.6	0.6	0.0	0.0	2.3	0.0	0.0
Pottery waster	**AGBZY868**	*average*	0.6	3.7	13.9	57.8	0.0	1.1	1.3	3.9	9.3	0.9	0.0	0.0	7.5	0.0	0.0
		stdev	0.1	0.2	0.7	2.4	0.0	0.6	0.1	0.2	0.6	0.02	0.0	0.0	0.4	0.0	0.0
Spanish Lustre Ware	**AAG68**	*average*	0.6	4.4	17	50.9	0.0	0.6	0.0	3.3	16.1	1.1	0.0	0.0	6.6	0.0	0.0
		stdev	0.02	0.2	0.2	0.2	0.0	0.6	0.0	0.1	0.7	0.2	0.0	0.0	0.2	0.0	0.0
Maiolica	**AAG70**	*average*	1.2	3.5	14.2	49.1	0.0	0.6	0.0	2.3	22.9	0.7	0.0	0.0	5.9	0.0	0.0
		stdev	0.1	0.03	0.4	0.5	0.0	0.6	0.0	0.1	1	0.01	0.0	0.0	0.04	0.0	0.0

Table 46 Scanning Electron Microscopy analysis of polished samples' fabrics in the sampled pottery collection from the Athenian Agora in Attica (%).

SAMPLES		Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CoO	NiO	CuO	ZnO	SnO2	PbO
GREEN																				
Polychrome Sgraffito Ware	MYT209	0.0	0.6	1.8	21.3	0.0	30.1	0.0	0.3	0.5	0.0	0.0	0.0	0.6	0.0	0.0	0.4	0.0	0.0	44.3
Polychrome Marbled Ware	MYT208	0.3	0.6	3.5	24.6	0.0	27.7	0.0	0.5	0.7	0.0	0.0	0.0	0.7	0.0	0.0	2.3	0.0	0.0	39.1
Kütahya Ware	MYT181	7.6	1.4	1.9	52.1	0.0	13.1	0.9	0.9	2.8	0.0	0.0	0.0	1	0.0	0.0	2.4	0.0	0.0	16
Kütahya Ware	MYT181	7.5	1.3	1.9	53.6	0.0	12.5	0.9	0.9	2.8	0.0	0.0	0.0	0.8	0.0	0.0	2.2	0.0	0.0	15.6
Kütahya Ware	MYT242	7.8	1.3	1.4	51.2	0.0	10.4	1	0.8	2.4	0.0	0.0	0.0	0.7	0.0	0.0	1	0.0	0.0	22.2
Iznik Ware	MYT168	4	1	0.0	41.1	11.9	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	2.4	0.0	4.1	28.8
Maiolica	MYT236	1.01	1	4.02	29.2	0.0	25.6	0.0	1.6	1.9	0.0	0.0	0.0	1.2	0.0	0.0	0.7	0.0	0.0	33.8
Porcelain	MYT180	1.7	0.0	15.1	72.3	0.0	0.0	0.0	2.9	5.7	0.0	0.0	0.0	2.1	0.0	0.0	0.2	0.0	0.0	0.0
YELLOW																				
Kütahya Ware	MYT181	8	1.5	2.3	53.8	0.0	12.7	1	0.8	3	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	16.1
Kütahya Ware	MYT242	8.1	1.3	1.4	51.8	0.0	10.2	1	1	2.8	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	21.9
RED																				
Polychrome Marbled Ware	MYT208	0.3	0.7	2.3	25.6	0.0	28.8	0.0	0.2	0.5	0.0	0.0	0.0	1.04	0.0	0.0	0.0	0.0	0.0	40.7
Monochrome Glazed Ware	MYT201	0.0	0.4	1.1	92.6	0.0	0.0	0.0	0.2	0.6	0.0	0.0	0.0	5.2	0.0	0.0	0.0	0.0	0.0	0.0
Kütahya Ware	MYT181	7.9	1.7	2.02	54.3	0.0	12.4	1.03	1.2	2.9	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	15.7
Kütahya Ware	MYT183	1.9	0.7	13.6	73.02	0.0	0.0	0.0	2.8	6.1	0.0	0.0	0.8	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Iznik Ware	MYT214	9.3	0.0	0.7	48.4	15.5	0.0	1	0.8	0.7	0.0	0.0	0.0	0.6	0.0	0.0	0.4	0.0	2.9	19.9
Porcelain	MYT223	0.7	0.5	18.2	71.5	0.0	0.0	0.0	3.2	5	0.0	0.0	0.0	1.01	0.0	0.0	0.0	0.0	0.0	0.0
BROWN																				
Polychrome Sgraffito Ware	MYT209	0.0	0.6	1.7	20.9	0.0	29.7	0.0	0.3	0.6	0.0	0.0	1.8	0.7	0.0	0.0	0.0	0.0	0.0	43.6
Maiolica	MYT227	1.1	0.9	4	38.9	0.0	20.7	0.0	3.2	1.8	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	27.4
Maiolica	MYT236	0.8	0.8	3.6	35.8	0.0	22.5	0.0	2.7	2	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	30.6
Kütahya Ware	MYT183	1.9	0.7	18	66.1	0.0	0.0	0.0	2.3	7.5	0.0	0.0	1.8	1.3	0.4	0.0	0.0	0.0	0.0	0.0
Porcelain	MYT186	2.4	1.2	17.3	69.7	0.0	0.0	0.0	3.1	3.1	0.46	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0
Porcelain	MYT222	1.9	0.8	17.1	70	0.0	0.0	0.0	3.2	3.2	0.47	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0
Porcelain	MYT185	1.3	0.6	15.1	68.2	0.0	0.0	0.0	2.8	8	0.0	0.0	2.3	1.2	0.5	0.0	0.0	0.0	0.0	0.0

Table 47 Scanning Electron Microscopy analysis of the pigments in the sampled pottery collection from the Castle of Mytilene in Lesvos (%).

SAMPLES		Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CoO	NiO	CuO	ZnO	SnO2	PbO
BLUE																				
Polychrome Painted Ware	MYT215	11.8	0.8	1.1	56.3	0.0	11.6	0.8	0.9	1.1	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.0	0.0	14.8
Kütahya Ware	MYT179	11.6	1.1	1.5	60.3	0.0	6.6	0.7	1.4	2.1	0.0	0.7	0.4	0.8	0.0	0.0	0.2	0.0	0.0	12.8
Kütahya Ware	MYT184	1.5	0.8	3.03	36.8	0.0	17.3	1	3.8	3.1	0.0	0.0	0.0	2.1	0.3	0.0	1.01	0.0	4.8	24.6
Kütahya Ware	MYT188	7.3	0.0	3.1	52.6	0.0	13.4	0.0	2.01	1.9	0.0	0.0	0.0	0.8	0.1	0.0	2.04	0.0	0.0	16.8
Kütahya Ware	MYT241	9.1	1.5	1.2	50	0.0	11.9	1.1	2.5	2.6	0.0	0.0	0.0	1.04	0.5	0.0	0.0	0.0	0.0	18.5
Kütahya Ware	MYT242	8.2	1.2	1.3	52.5	0.0	9.8	1.1	1.1	2.6	0.0	0.0	0.0	0.7	0.3	0.26	0.3	0.0	0.0	20.8
Miletus Ware	MYT167	8.8	0.7	1.7	47	0.0	11.6	0.8	1.3	0.8	0.0	0.0	0.0	5.8	1.6	2.83	1.3	0.0	0.0	15.2
Iznik Ware	MYT168	4.1	0.5	1.1	77.3	0.0	5.5	0.5	1.9	26.2	0.0	0.0	0.0	0.9	0.6	0.0	0.0	0.0	0.0	8.1
Iznik Ware	MYT170	7.8	1	1.1	44.7	0.0	15.5	0.0	0.7	0.9	0.0	0.0	0.0	0.8	0.6	0.0	0.0	0.0	2.2	24.7
Iznik Ware	MYT214	9.3	0.3	0.8	48.6	15	0.0	0.8	0.8	0.6	0.0	0.0	0.0	0.4	0.0	0.0	0.2	0.0	2.8	20.4
Maiolica	MYT227	0.9	0.6	3.6	34.9	0.0	23	0.0	2.3	1.4	0.0	0.0	0.0	1.4	0.6	0.0	0.0	0.0	0.0	31.1
Maiolica	MYT236	0.9	0.9	3.2	32.6	0.0	23.4	0.0	2.3	1.4	0.0	0.0	0.0	2	0.9	0.0	0.0	0.0	0.0	32.5
Porcelain	MYT185	1.3	6.3	15.1	68.2	0.0	0.0	0.0	2.8	8.0	0.0	0.0	2.3	1.2	0.5	0.0	0.0	0.0	0.0	0.0
Porcelain	MYT221	9.04	2.4	3.9	76.7	0.0	0.0	0.4	1.1	4.7	0.2	0.0	0.3	1.02	0.2	0.0	0.0	0.0	0.0	0.0
Porcelain	MYT223	0.5	0.4	16.1	73	0.0	0.0	0.0	3.2	3.9	0.0	0.0	0.0	1.2	1.4	0.0	0.0	0.0	0.0	0.0
Porcelain	MYT223	0.4	0.2	20.9	69.9	0.0	0.0	0.0	3.2	4.1	0.0	0.0	0.0	0.7	0.5	0.0	0.0	0.0	0.0	0.0
Glazed Frit Ware	MYT182	2.3	0.4	2	78.1	0.0	5.04	0.5	1.5	1.3	0.0	0.0	0.0	1	0.3	0.0	0.3	0.0	0.0	7.1
TURQUOISE																				
Monochrome Glazed Ware	MYT200	4.1	0.0	2.6	6.5	0.0	11.9	1	0.6	4.1	57.4	0.0	0.0	5.4	0.0	0.0	1.4	4.9	0.0	0.0
Kütahya Ware	MYT179	10.8	0.8	1.1	59.6	0.0	7.1	0.7	1.3	2.2	0.0	0.0	0.0	0.5	0.0	0.0	0.9	0.0	0.0	14.9
Kütahya Ware	MYT230	7.7	0.5	1.7	55.7	0.0	10.5	0.0	1.3	2.1	0.0	0.0	0.0	0.7	0.3	0.0	4.9	0.0	0.0	14.6
PURPLE																				
Monochrome Glazed Ware	MYT200	2.1	0.0	16.7	17.3	0.0	20.9	1.6	0.8	2.9	31.1	0.0	0.0	2.1	0.4	0.0	0.6	2.9	0.0	0.0
Kütahya Ware	MYT179	11.1	1.1	1.8	58.7	0.0	6.4	0.7	1.3	1.8	0.1	0.9	1.5	0.9	0.3	0.0	0	0.0	0.0	13.6
Kütahya Ware	MYT242	1.8	0.4	2.2	68.4	0.0	5.02	0.5	0.7	2.5	0.0	0.0	0.8	1.7	0.4	0.0	0.2	0.0	0.0	14.9
DARK																				
Kütahya Ware	MYT188	7.1	1.4	2.7	48.8	0.0	12	0.0	1.9	1.7	0.0	4.1	0.4	2.2	0.0	0.0	2.1	0.0	0.0	15.8
Kütahya Ware	MYT230	7.2	1.5	2.2	52.7	0.0	12.4	0.0	1.3	3	0.0	0.4	0.0	1.2	0.3	0.0	3.2	0.0	0.0	14.7
Miletus Ware	MYT204	7.6	1.1	2.8	46.2	0.0	16.7	0.0	1.1	0.6	0.0	1.5	0.0	1	0.0	0.0	0.0	0.0	0.0	21.5
Miletus Ware	MYT226	5.4	2.7	3.5	50.9	0.0	10.5	0.0	1.3	0.7	0.0	8.6	0.3	2.7	0.0	0.0	0.0	0.0	0.0	13.4
Iznik Ware	MYT170	9	0.9	1.04	47.6	0.0	16.1	0.0	0.8	0.8	0.0	0.3	0.0	0.8	0.7	0.0	0.0	0.0	2.6	19.4
Polychrome Painted Ware	MYT215	9.6	3.3	3.3	57.01	0.0	5.5	0.6	1.1	1.04	0.0	5.6	0.7	2.7	0.9	0.57	0.0	0.0	0.0	8.2
Miletus Ware	MYT167	8.8	0.7	1.7	47.0	0.0	11.6	0.8	1.3	0.8	0.0	0.6	0.0	5.8	1.6	2.8	0.0	1.3	0.0	15.2

Table 48 Scanning Electron Microscopy analysis of the pigments in the sampled pottery collection from the Castle of Mytilene in Lesvos (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CoO	NiO	CuO	ZnO	SnO2	PbO
Polychrome Painted Ware	**MYT215**	*average*	11.03	0.6	1.4	59.4	0.0	10.9	0.9	1.1	0.9	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	13.6
		stdev	0.3	0.3	0.4	0.1	0.0	0.4	0.02	0.02	0.1	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.3
Monochrome Glazed Ware	**MYT201**	*average*	0.0	3.4	3.3	87	0.0	0	0.0	0.5	5.3	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0
		stdev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monochrome Glazed Ware	**MYT200**	*average*	2.1	0.0	16.7	27.3	0.0	10.9	2.6	0.8	2.9	31.1	0.0	0.0	2.1	0.0	0.0	0.0	2.9	0.0	0.0
		stdev	0.6	0.0	3.3	2.1	0.0	5.5	0.2	0.04	1	7.5	0.0	0.0	1.5	0.2	0.0	0.01	0.8	0.0	0.0
Kütahya Ware	**MYT179**	*average*	11.9	0.9	1.2	59.3	0.0	7.2	0.7	1.2	1.9	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	15.3
		stdev	0.02	0.04	0.1	0.2	0.0	0.03	0.1	0.1	0.04	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
Kütahya Ware	**MYT184**	*average*	1.4	0.8	3.2	38.1	0.0	17.8	1.04	4	3.04	0.0	0.0	0.0	1.9	0.3	0.0	0.9	0.0	3.1	24.5
		stdev	0.1	0.01	0.2	0.5	0.0	0.4	0.2	0.1	0.7	0.0	0.0	0.0	0.1	0.1	0.0	0.9	0.0	2.1	0.3
Kütahya Ware	**MYT188**	*average*	1.1	0.0	2.3	64.1	5.4	10.2	0.0	0.7	3.5	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	12.3
		stdev	0.002	0.0	0.2	0.1	0.2	0.04	0.0	0.1	0.04	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
Kütahya Ware	**MYT242**	*average*	8.5	1.3	1.4	53.5	0.0	9.7	0.9	0.9	2.9	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	20.4
		stdev	0.03	0.2	0.4	0.7	0.0	0.3	0.3	0.1	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.5
Kütahya Ware	**MYT183**	*average*	1.7	0.5	13.7	74.2	0.0	0.0	0.0	2.8	6.2	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
		stdev	0.04	0.1	0.3	0.9	0.0	0.0	0.0	0.1	0.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Iznik Ware	**MYT168**	*average*	2.1	0.9	2.2	42	10.9	0.0	5.9	0.55	2.5	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	1.3	30.5
		stdev	1.4	0.5	1.04	2.1	0.4	0.0	3.5	0.8	3.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	1.8	7.1
Iznik Ware	**MYT170**	*average*	6.7	0.3	1	48.9	0.0	15.9	0.0	0.6	0.7	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.4	23
		stdev	0.2	0.1	0.8	1.6	0.0	0.5	0.0	0.1	0.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	1.2
Iznik Ware	**MYT214**	*average*	9	0.6	1.1	50.2	15.1	0.0	0.8	0.7	1	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	2.1	19
		stdev	0.4	0.3	0.1	0.9	0.03	0.0	0.2	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.3
Miletus Ware	**MYT167**	*average*	10.3	0.5	1.2	48.6	0.0	14.8	1.2	1.1	0.9	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	21
		stdev	0.1	0.1	0.1	0.7	0.0	0.3	0.0	0.02	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Miletus Ware	**MYT204**	*average*	7.3	0.7	1.4	42.5	0.0	19.6	0.0	0.9	0.6	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	26.2
		stdev	0.1	0.2	0.3	0.4	0.0	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
Miletus Ware	**MYT226**	*average*	7.6	0.7	4.9	50.5	0.0	14.5	0.0	1.9	0.7	1.03	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	17.5
		stdev	0.3	0.2	0.6	0.8	0.0	0.7	0.0	0.0	0.04	1.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1
Glazed Frit Ware	**MYT182**	*average*	6.5	0.7	0.9	51.3	0.0	14.7	0.8	1.7	2.8	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	20
		stdev	0.1	0.1	0.2	1.4	0.0	1	0.3	0.7	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Maiolica	**MYT227**	*average*	1.1	0.8	4	42.3	0.0	19.7	0.0	3.4	2	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	26
		stdev	0.4	0.2	0.1	1.6	0.0	0.8	0.0	0.2	0.03	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
Porcelain	**MYT180**	*average*	1.7	0.0	14.6	72	0.0	0.0	0.0	2.7	7.9	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
		stdev	0.2	0.0	0.5	1.7	0.0	0.0	0.0	0.3	2.5	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Porcelain	**MYT185**	*average*	1.2	0.6	14.2	70.6	0.0	0.0	0.0	2.8	9.7	0.0	0.0	0.0	1	0.0	0.0	0.0	0.0	0.0	0.0
		stdev	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Porcelain	**MYT186**	*average*	2	0.5	14.6	73.8	0.0	0.0	0.0	2.9	5.3	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0
		stdev	0.1	0.1	0.9	1.5	0.0	0.0	0.0	0.1	0.7	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Porcelain	**MYT221**	*average*	11.1	3.02	2.6	74.3	0.0	0.0	0.5	1.1	6	0.2	0.0	0.3	0.9	0.0	0.0	0.0	0.0	0.0	0.0
		stdev	0.1	0.1	0.1	0.1	0.0	0.0	0.01	0.01	0.2	0.0	0.0	0.02	0.02	0.0	0.0	0.0	0.0	0.0	0.0
Porcelain	**MYT223**	*average*	0.5	0.3	17.2	72.7	0.0	0.0	0.0	3.5	5.2	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
		stdev	0.01	0.02	0.1	0.2	0.0	0.0	0.0	0.01	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 49 Scanning Electron Microscopy analysis of polished samples' glazes in the sampled pottery collection from the Castle of Mytilene in Lesvos (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	Cr2O3	MnO	Fe2O3	CoO	CuO	ZnO	SnO2	PbO
Polychrome Sgraffito Ware	**MYT209**	*average*	0	1.5	21.6	64.6	0.0	1.4	0.0	5.4	1.7	0.8	0.0	0.0	0.8	0.0	0.0	0.0	0.0	2.3
		stdev	0	0.02	0.4	0.1	0.0	0.2	0.0	0.02	0.3	0.1	0.0	0.0	0.04	0.0	0.0	0.0	0.0	0.2
Polychrome Marbled Ware	**MYT208**	*average*	1.1	2.3	17.5	53.8	0.0	4.1	0.0	3.9	8.4	0.8	0.0	0.0	4	0.0	0.9	0.0	0.0	3.3
		stdev	0.04	0.4	0.2	1.3	0.0	4	0.0	0.4	4.4	0.1	0.0	0.0	1.2	0.0	0.2	0.0	0.0	1.2
Polychrome Painted Ware	**MYT215**	*average*	3.5	1.3	3.5	74.5	0.0	4.7	0.6	0.8	2.1	0.0	0.0	0.0	0.6	0.4	0.0	0.0	0.0	8
		stdev	0.1	0.1	0.3	0.4	0.0	0.1	0.01	0.1	0.1	0.0	0.0	0.0	0.1	0.01	0.0	0.0	0.0	0.3
Monochrome Glazed Ware	**MYT200**	*average*	9.1	0	1.2	42.4	0.6	0.0	0.0	0	1.3	33.2	0.0	0.0	1.1	0.0	0.0	11.1	0.0	0.0
		stdev	1.3	0	0.6	1.2	0.8	0.0	0.0	0	0.1	4.7	0.0	0.0	0.5	0.0	0.0	2	0.0	0.0
Kütahya Ware	**MYT179**	*average*	1	0.1	2.9	87.5	0.0	0.0	0.0	3	5.7	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
		stdev	0.1	0.3	0.3	0.4	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Kütahya Ware	**MYT181**	*average*	2.1	0.9	3.3	87.4	0.0	1.1	0.3	0.9	1.2	0.0	0.0	0.0	1	0.0	0.0	0.0	0.0	1.9
		stdev	0.2	0.1	0.4	0.5	0.0	0.1	0.1	0	0.02	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.4
Kütahya Ware	**MYT230**	*average*	3.7	8.2	10.9	36.8	0.0	0.0	0.0	0.9	2.7	0.0	24.5	0.0	9.3	0.6	2.3	0.0	0.0	0.0
		stdev	0.1	0.7	0.9	3.4	0.0	0.0	0.0	0.01	0.3	0.0	1.4	0.0	0.7	0.1	0.2	0.0	0.0	0.0
Miletus Ware	**MYT167**	*average*	0.8	1.4	24	64.2	0.0	0.0	0.0	4.6	3.2	0.7	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0
		stdev	0.2	0.2	0.4	0.8	0.0	0.0	0.0	0.1	0.2	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Miletus Ware	**MYT204**	*average*	2	2.2	23.2	65.6	0.0	0.0	0.0	3.1	2.1	0.8	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0
		stdev	0.2	0.1	1.8	1.7	0.0	0.0	0.0	0.3	0.8	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Miletus Ware	**MYT226**	*average*	5.8	1.1	25.9	59.3	0.0	0.0	0.0	5.2	0.4	0.6	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.9
		stdev	0.1	0.2	0.2	0.4	0.0	0.0	0.0	0.3	0.3	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1
Iznik Ware	**MYT168**	*average*	1.1	1.1	2.2	77.3	0.0	4.1	4.8	0.8	3.7	0.0	0.0	0.0	0.8	0.0	0.3	0.0	0.0	4.3
		stdev	0.2	0.1	0.9	2.3	0.0	0.5	0.5	0.3	0.4	0.0	0.0	0.0	0.9	0.0	0.5	0.0	0.0	3.7
Iznik Ware	**MYT170**	*average*	3.8	0.6	1.5	77.6	0.0	0.0	0.0	0.6	0.7	0.0	0.0	0.0	1.2	0.6	0.0	0.0	0.9	5.6
		stdev	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iznik Ware	**MYT214**	*average*	2.6	0.0	2.8	84.8	0.0	3	0.0	0.6	3.8	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0
		stdev	0.3	0.0	0.1	0.4	0.0	0	0.0	0.1	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Maiolica	**MYT227**	*average*	1	2.9	11.2	42.7	10.6	1.1	0.0	1.2	24.7	0.6	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0
		stdev	0.04	0.1	0.7	1.1	1	0.2	0.0	0.2	0.6	0.1	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Maiolica	**MYT236**	*average*	0.8	3.2	11.8	39	11.7	1.2	0.0	1.7	25.9	0.7	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0
		stdev	0.2	0.5	0.8	0.5	0.9	0.5	0.0	0.4	0.8	0.3	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0

Table 50 Scanning Electron Microscopy analysis of the polished samples' slips in the sampled pottery collection from the Castle of Mytilene in Lesvos (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	MnO	Fe2O3	PbO
Polychrome Sgraffito Ware	**MYT209**	*average*	0.0	3.1	15.6	61.6	0.0	0.0	0.0	3	8	1	0.0	7.7	0.0
		stdev	0.0	0.1	0.6	1.5	0.0	0.0	0.0	0.1	0.1	0.2	0.0	0.5	0.0
Polychrome Marbled Ware	**MYT208**	*average*	1.5	2.4	13.4	62.3	0.0	0.0	0.0	3.2	11.4	1.01	0.0	4.9	0.0
		stdev	0.1	0.1	0.4	2.4	0.0	0.0	0.0	0.3	3.5	0.5	0.0	0.2	0.0
Polychrome Painted Ware	**MYT215**	*average*	1.7	4.1	2.5	85.1	0.0	0.0	0.0	0.5	5.2	0.0	0.0	1	0.0
		stdev	0.2	0.2	0.2	0.8	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.04	0.0
Monochrome Glazed Ware	**MYT200**	*average*	0.0	1.5	25.8	58	0.0	0.0	0.0	4.2	1.6	1.02	0.0	7.9	0.0
		stdev	0.0	0.2	0.3	0.4	0.0	0.0	0.0	0.1	0.1	0.5	0.0	0.04	0.0
Monochrome Glazed Ware	**MYT201**	*average*	0.0	3.5	3.2	86.4	0.0	0.0	0.0	0.6	5.7	0.5	0.0	0.6	0.0
		stdev	0.0	0.5	0.02	1.7	0.0	0.0	0.0	0.1	1.2	0.5	0.0	0	0.0
Kütahya Ware	**MYT179**	*average*	1.2	3.4	2	86.9	0.0	0.0	0.0	0.5	5.3	0.5	0.0	0.8	0.0
		stdev	0.02	0.9	0.1	0.1	0.0	0.0	0.0	0.03	0.1	0.5	0.0	0.02	0.0
Kütahya Ware	**MYT181**	*average*	1.3	0.9	2.7	92.9	0.0	0.0	0.0	0.5	1	0.5	0.0	0.7	0.0
		stdev	0.1	0.1	0.1	0.4	0.0	0.0	0.0	0.1	0.1	0.5	0.0	0.1	0.0
Kütahya Ware	**MYT183**	*average*	1.8	0.5	24.6	67.8	0.0	0.0	0.0	3.3	1	0.5	0.0	1.1	0.0
		stdev	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.2	0.2	0.5	0.0	0.02	0.0
Kütahya Ware	**MYT184**	*average*	1	6.8	16.6	53.1	0.0	0.0	0.0	2.9	13.9	0.7	0.0	5	0.0
		stdev	0.2	0.4	0.1	0.3	0.0	0.0	0.0	0.2	0.4	0.1	0.0	0.2	0.0
Kütahya Ware	**MYT188**	*average*	0.8	0.0	2	94	0.0	0.0	0.0	0.8	1.7	0.0	0.0	0.7	0.0
		stdev	0.02	0.0	0.3	0.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.04	0.0
Kütahya Ware	**MYT230**	*average*	1.04	0.8	2.6	92.7	0.0	0.0	0.0	0.7	1.3	0.0	0.0	0.9	0.0
		stdev	0.1	0.1	0.1	0.4	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
Kütahya Ware	**MYT241**	*average*	1.01	0.6	2.1	92.3	0.0	0.0	0.0	1.2	1.8	0.0	0.0	0.9	0.0
		stdev	0.1	0.1	0.04	0.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
Kütahya Ware	**MYT242**	*average*	1.3	0.6	2.7	92.6	0.0	0.0	0.4	0.7	1.1	0.0	0.0	0.6	0.0
		stdev	0.02	0.1	0.7	0.3	0.0	0.0	0.1	0.1	0.2	0.0	0.0	0.03	0.0
Miletus Ware	**MYT167**	*average*	0.9	3.5	16.1	57.3	0.0	0.0	0.0	3.4	9.7	1.1	0.0	8.1	0.0
		stdev	0.04	0.1	0.7	1.9	0.0	0.0	0.0	0.3	0.8	0.2	0.0	0.3	0.0
Miletus Ware	**MYT204**	*average*	1	3.7	17.01	58.2	0.0	0.0	0.0	3.3	8.1	0.9	0.0	7.7	0.0
		stdev	0.13	0.3	0.7	2.8	0.0	0.0	0.0	0.3	1.4	0.1	0.0	0.5	0.0
Miletus Ware	**MYT226**	*average*	0.9	3.6	15.6	60.2	0.0	0.0	0.0	3.2	8.8	0.8	0.0	7	0.0
		stdev	0.13	0.3	1.9	3.9	0.0	0.0	0.0	0.4	0.6	0.04	0.0	0.8	0.0

Table 51 Scanning Electron Microscopy analysis of polished samples' fabrics in the sampled pottery collection from the Castle of Mytilene in Lesvos (%).

SAMPLES			Na2O	MgO	Al2O3	SiO2	P2O5	SO3	Cl2O	K2O	CaO	TiO2	MnO	Fe2O3	PbO
Iznik Ware	**MYT168**	*average*	1.8	1.6	3.7	80.4	0.0	2.2	2.3	1.1	4.1	0	0.0	2.8	0.0
		stdev	0.1	0.2	0.7	1.9	0.0	0.3	0.1	0.2	0.4	0	0.0	0.7	0.0
Iznik Ware	**MYT170**	*average*	1.8	1.2	2.8	87.7	0.0	1.3	0.5	0.7	3	0	0.0	1.1	0.0
		stdev	0.2	0.1	0.1	0.8	0.0	0.1	0.2	0.04	0.6	0	0.0	0.2	0.0
Iznik Ware	**MYT214**	*average*	1.6	1	2.5	90.3	0.0	1.1	0.0	0.6	1.9	0	0.0	1	0.0
		stdev	0.03	0.1	0.04	0.4	0.0	0.2	0.0	0.1	0.04	0	0.0	0.1	0.0
Glazed Frit Ware	**MYT182**	*average*	0.9	0.4	2.3	93.7	0.0	0.0	0.0	0.9	1	0	0.0	0.8	0.0
		stdev	0.1	0.1	0.2	0.3	0.0	0.0	0.0	0.2	0.2	0	0.0	0.2	0.0
Maiolica	**MYT227**	*average*	1.1	3.2	14	53.3	0.0	0.0	0.0	2.1	20.2	0.8	0.0	5.4	0.0
		stdev	0.2	0.1	0.1	1.23	0.0	0.0	0.0	0.04	1.3	0.1	0.0	0.2	0.0
Maiolica	**MYT236**	*average*	1.1	3.4	13.2	44.6	0.0	0.0	0.0	2.1	23	0.7	0.0	5.02	0.0
		stdev	0.2	0.5	1.5	3.2	0.0	0.0	0.0	0.2	2.3	0.2	0.0	0.8	0.0
Porcelain	**MYT180**	*average*	1.6	0.0	23.7	69.1	0.0	0.0	0.0	3.3	1.2	0.0	0.0	1.1	0.0
		stdev	0.02	0.0	0.3	0.4	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.03	0.0
Porcelain	**MYT185**	*average*	1.2	0.5	23.7	69.6	0.0	0.0	0.0	3.3	0.9	0.0	0.0	0.9	0.0
		stdev	0.2	0.2	0.3	0.2	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
Porcelain	**MYT186**	*average*	1.8	0.6	20.6	72.1	0.0	0.0	0.0	3.1	0.7	0.0	0.0	1.1	0.0
		stdev	0.2	0.2	0.3	0.5	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.0
Porcelain	**MYT221**	*average*	4.6	1.4	7.2	82.4	0.0	0.0	0.4	1.2	2.3	0.0	0.0	0.5	0.0
		stdev	0.1	0.1	0.04	0.4	0.0	0.0	0.03	0.01	0.1	0.0	0.0	0.01	0.0
Porcelain	**MYT222**	*average*	1.5	0.0	23.6	70.1	0.0	0.0	0.0	3.3	0.7	0.0	0.0	0.9	0.0
		stdev	0.1	0.0	0.2	0.2	0.0	0.0	0.0	0.04	0.01	0.0	0.0	0.03	0.0
Porcelain	**MYT223**	*average*	0.4	0.3	30.3	64.2	0.0	0.0	0.0	3.5	0.9	0.0	0.0	0.4	0.0
		stdev	0.1	0.1	0.6	0.6	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.02	0.0

Table 52 Scanning Electron Microscopy analysis of polished samples' fabrics in the sampled pottery collection from the Castle of Mytilene in Lesvos (%).

POTTERY TYPES	SAMPLES	XRD	VITRIFICATION STAGE	TEMPERATURE ºC
Roulette/Veneto Ware	CH82	Ms/Ilt, Cal	Initial to Extensive Vitrification	800-950
Roulette/Veneto Ware	CH85	Ms/Ilt	Initial to Extensive Vitrification	800-950
Champlevé Ware	CH84	Di	Intermediate to Total Vitrification	1050-1150
Champlevé Ware	CH92	Di	Intermediate to Total Vitrification	1050-1150
Champlevé Ware	CH124	Di	Intermediate to Total Vitrification	1050-1150
Champlevé Ware	CH141	Di	Intermediate to Total Vitrification	1050-1150
Champlevé Ware	CH148	Di	Intermediate to Total Vitrification	1050-1150
Champlevé Ware	CH151	Di	Intermediate to Total Vitrification	1050-1150
Incised Sgraffito Ware	CH113	Ms/Ilt	Extensive Vitrification	850-950
Incised Sgraffito Ware	CH114	-----	Extensive Vitrification	---
Incised Sgraffito Ware	CH150	Ms/Ilt	Extensive Vitrification	850-950
Incised Sgraffito Ware	CH133	Crs	Total Vitrification	> 1150
Zeuxippus Ware	CH101	-----	Intermediate Vitrification	1050-1150
Splashed Ware	CH89	Ms/Ilt	Extensive Vitrification	850-950
Splashed Ware	CH145	Crs	Extensive to Intermediate Vitrification	850-1150
Slip-Painted Ware	CH94	Ms/Ilt	Extensive Vitrification	850-950
Slip-Painted Ware	CH121	Di, Crs	Extensive to Intermediate Vitrification	1000-1150
Slip-Painted Ware	CH138	Ms/Ilt	Extensive Vitrification	850-950
Polychrome Marbled Ware	CH102	Di	Intermediate Vitrification	1050-1150
Polychrome Marbled Ware	CH103	---	Intermediate Vitrification	1050-1150
Polychrome White Ware	CH108	Qz	Initial Vitrification	800-850
Glazed White Ware II	CH107	Qz, Pl	Initial Vitrification	800-850
Plain Glazed Ware	CH88	Ms/Ilt	Extensive Vitrification	850-950
Plain Glazed Ware	CH125	Di, Crs	Extensive Vitrification	1000-1050
Unglazed Plain Ware	CH134	---	Intermediate to Total Vitrification	>1050
Monochrome Glazed Ware	CH126	---	Extensive Vitrification	850-1050
Monochrome Glazed Ware	CH128	---	Extensive Vitrification	850-1050
Monochrome Glazed Ware	CH137	---	Extensive to Intermediate Vitrification	850-1150
Didymoteicho Ware	CH135	---	Intermediate to Total Vitrification	>1050
Glazed Frit Ware	CH106	Di	Intermediate to Total Vitrification	>1050
Glazed Frit Ware	CH109	---	Intermediate to Total Vitrification	>1050
Frit Ware	CH147	Di, Mul	Intermediate to Total Vitrification	>1050
Lustre Ware	CH110	Di, Ge	Extensive Vitrification	950-1050
Maiolica	CH154	Di, Ge	Extensive Vitrification	950-1050
A8A amphora	CH155	Ms/Ilt	Initial to Extensive Vitrification	800-900
A8A amphora	CH156	---	Initial to Extensive Vitrification	800-900
A8A amphora	CH157	---	Initial to Extensive Vitrification	800-900
Günsenin 3 Amphora	CH158	Qz, Pl, Kfs	Extensive Vitrification	850-1050
Günsenin 3 Amphora	CH159	Crs	Extensive Vitrification	1000-1050
Günsenin 3 Amphora	CH160	Di	Extensive Vitrification	950-1050
Günsenin 2 Amphora	CH161	Ms/Ilt	Extensive Vitrification	850-1050
Günsenin 2 Amphora	CH162	Ms/Ilt	Extensive Vitrification	850-1050
Günsenin 2 Amphora	CH163	Di	Extensive Vitrification	950-1050

Table 53 Stages of Vitrification, Temperatures of the sampled pottery collection from Chalcis in Euboea through Scanning Electron Microscopy (SEM).

TYPOLOGY	SAMPLES	XRD	VITRIFICATION STAGE	TEMPERATURE °C
Polychrome Painted Ware/Maiolica	AGBZY861	---	Extensive Vitrification	850-1050
Polychrome Painted Ware/Maiolica	AGBZY862	---	Extensive Vitrification	850-1050
Polychrome Painted Ware/Maiolica	AGBZY863	---	Extensive Vitrification	850-1050
Polychrome Painted Ware/Maiolica	AAG29	Di, Ge	Extensive Vitrification	950-1050
Polychrome Painted Ware/Maiolica	AAG30	Di, Ge	Extensive Vitrification	950-1050
Polychrome Painted Ware/Maiolica	AAG31	Di, Ge	Extensive Vitrification	950-1050
Polychrome Painted Ware/Maiolica	AAG32	Di, Ge	Extensive Vitrification	950-1050
Polychrome Painted Ware/Maiolica	AAG66	Di, Ge	Extensive Vitrification	950-1050
Polychrome Painted Ware/Maiolica	AAG67	Di, Ge	Extensive Vitrification	950-1050
Maiolica	AAG70	Di, Ge	Extensive Vitrification	950-1050
Polychrome Sgraffito Ware	AGBZY829	---	Extensive Vitrification	850-1050
Polychrome Sgraffito Ware	AGBZY860	---	Extensive Vitrification	850-1050
Polychrome Sgraffito Ware	AAG60	Di, Ge	Extensive Vitrification	950-1050
Polychrome Sgraffito Ware	AAG62	Di	Extensive Vitrification	950-1050
Incised Sgraffito Ware	AGBZY841	Di, Ge	Extensive Vitrification	950-1050
Incised Sgraffito Ware	AGBZY846	Crs	Extensive Vitrification	1000-1050
Green and Brown Painted Ware	AGBZY853	Di, Crs	Extensive to Intermediate Vitrification	1000-1150
Green and Brown Painted Ware	AGBZY854	---	Extensive to Intermediate Vitrification	1000-1150
Green and Brown Painted Ware	AAG61	Di, Crs	Extensive to Intermediate Vitrification	1000-1150
Green and Brown Painted Ware	AAG69	Di, Crs	Extensive to Intermediate Vitrification	1000-1150
Zeuxippus Ware Subtype	AAG43	Ms/Ilt	Initial to Extensive Vitrification	800-950
Zeuxippus Ware Subtype	AAG47	Ms/Ilt,Cal	Initial Vitrification	800-850
Zeuxippus Ware Subtype	AAG50	Ms/Ilt,Cal	Initial Vitrification	800-850
Monochrome Glazed Ware	AAG20	Di, Ge	Extensive Vitrification	950-1050
Monochrome Glazed Ware	AAG22	---	Extensive Vitrification	950-1050
Monochrome Glazed Ware	AAG26	Di, Ge	Extensive Vitrification	950-1050
Monochrome Glazed Ware	AAG33	Di, Ge	Extensive Vitrification	950-1050
Monochrome Glazed Ware	AAG36	Di	Extensive to Intermediate Vitrification	950-1150
Monochrome Glazed Ware	AAG53	Di	Extensive Vitrification	950-1050
Monochrome Glazed Ware	AAG54	Ms/Ilt	Extensive Vitrification	850-950
Monochrome Glazed Ware	AAG55	Di	Extensive to Intermediate Vitrification	950-1150
Monochrome Glazed Ware	AAG71	Di, Crs	Extensive to Intermediate Vitrification	1000-1150
Monochrome Glazed Ware	AGBZY837	---	Extensive to Intermediate Vitrification	850-1150
Slip-Painted Ware	AAG59	Ms/Ilt	Extensive Vitrification	850-950
Spanish Lustre Ware	AAG68	Di, Ge	Extensive Vitrification	950-1050
Pottery waster	AGBZY832	---	Initial Vitrification	800-850
Pottery waster	AGBZY859	---	Initial Vitrification	800-850
Pottery waster	AGBZY864	---	Initial Vitrification	800-850
Pottery waster	AGBZY868	---	Initial Vitrification	800-850

Table 54 Stages of Vitrification, Temperatures of the sampled pottery collection from the Athenian Agora in Attica through Scanning Electron Microscopy (SEM).

POTTERY TYPES	SAMPLES	XRD	VITRIFICATION STAGE	TEMPERATURE °C
Polychrome Sgraffito Ware	MYT229	Qz, Pl, Kfs	Intermediate to Total Vitrification	1050- >1150
Polychrome Sgraffito Ware	MYT194	Qz, Pl, Kfs, Sa	Intermediate to Total Vitrification	1050- >1150
Polychrome Sgraffito Ware	MYT217	Di, Crs, Ge	Intermediate to Total Vitrification	1050- >1150
Polychrome Sgraffito Ware	MYT209	Di, Ge	Intermediate to Total Vitrification	1050- >1150
Polychrome Painted Ware	MYT228	Crs	Intermediate to Total Vitrification	1050- >1150
Polychrome Painted Ware	MYT215	---	Intermediate to Total Vitrification	1050- >1150
Painted Ware	MYT191	Mul, Crs, Do	Intermediate to Total Vitrification	>1100
Painted Ware	MYT187	Di, Crs, Ge	Intermediate to Total Vitrification	>1100
Polychrome Marbled Ware	MYT197	Di, Ge	Extensive Vitrification	950-1050
Polychrome Marbled Ware	MYT208	Di,Ge	Extensive Vitrification	950-1050
Polychrome Marbled Ware	MYT211	Di, Ge, Crs	Extensive Vitrification	1000-1050
Monochrome Glazed Ware	MYT199	Qz, Pl, Kfs	Intermediate Vitrification	1050-1150
Monochrome Glazed Ware	MYT200	---	Intermediate Vitrification	1050-1150
Monochrome Glazed Ware	MYT201	---	Intermediate Vitrification	1050-1150
Monochrome Glazed Ware	MYT206	Mul	Intermediate Vitrification	1050-1150
Glazed White Ware IV	MYT203	Cal	Initial Vitrification	800-850
Roulette/Veneto Ware	MYT178	Ms/Ilt	Extensive Vitrification	850-950
Iznik Ware	MYT168	Crs	Intermediate Vitrification	>1000
Iznik Ware	MYT214	---	Intermediate Vitrification	1050-1100
Kütahya Ware	MYT188	---	Extensive Vitrification	1000-1050
Kütahya Ware	MYT195	---	Extensive Vitrification	1000-1050
Kütahya Ware	MYT169	---	Extensive Vitrification	1000-1050
Kütahya Ware	MYT179	Di, Crs	Extensive Vitrification	1000-1050
Kütahya Ware	MYT181	---	Extensive Vitrification	1000-1050
Kütahya Ware	MYT184	Crs	Extensive Vitrification	1000-1050
Miletus Ware	MYT167	Ms/Ilt	Initial to Extensive Vitrification	800-950
Miletus Ware	MYT204	Qz, Pl, Kfs	Initial to Extensive Vitrification	800-900
Miletus Ware	MYT226	Ms/Ilt, Cal	Initial to Extensive Vitrification	800-900
Overfired Stoneware	MYT202	---	Total Vitrification CB	>1100
Porcelain	MYT183	---	Total Vitrification FB	>1100
Porcelain	MYT221	---	Total Vitrification MB-FB	>1100
Porcelain	MYT222	---	Total Vitrification MB-FB	>1100
Porcelain	MYT223	---	Total Vitrification FB	>1100
Porcelain	MYT180	---	Total Vitrification FB	>1100
Porcelain	MYT185	---	Total Vitrification FB	>1100
Porcelain	MYT186	---	Total Vitrification FB	>1100

Table 55 Stages of Vitrification, Temperatures of the sampled pottery collection from the Castle of Mytilene in Lesvos through Scanning Electron Microscopy (SEM).

CHALCIS IN EUBOEA	STAGES OF VITRIFICATION	TEMPERATURE ºC
Champlevé Ware	Intermediate to Total Vitrification	1050-1150
Incised Sgraffito Ware	Extensive to Intermediate Vitrification	850->1150
Glazed Frit Ware	Intermediate to Total Vitrification	>1050
Didymoteicho Ware	Intermediate to Total Vitrification	>1050
Zeuxippus Ware	Intermediate Vitrification	1050-1150
Polychrome Marbled Ware	Intermediate Vitrification	1050-1150
Maiolica	Extensive Vitrification	950-1050
Polychrome White Ware	Initial Vitrification	800-850
Glazed White Ware II	Initial Vitrification	800-850
Lustre Ware	Extensive Vitrification	950-1050
Roulette/Veneto Ware	Initial to Extensive Vitrification	800-950
A8A Amphora	Initial to Extensive Vitrification	800-900
Günsenin 2 Amphora	Extensive Vitrification	850-1050
Günsenin 3 Amphora	Extensive Vitrification	850-1050
Splashed Ware	Extensive to Intermediate Vitrification	850-1150
Slip-Painted Ware	Extensive to Intermediate Vitrification	850-1150
Plain Glazed Ware	Extensive Vitrification	850-1050
Unglazed Plain Ware	Intermediate to Total Vitrification	>1050
Monochrome Glazed Ware	Extensive to Intermediate Vitrification	850-1150

Table 56 Total description of the Stages of Vitrification and Temperatures of the sampled pottery collection from Chalcis in Euboea through Scanning Electron Microscopy (SEM).

THE ATHENIAN AGORA IN ATTICA	STAGES OF VITRIFICATION	TEMPERATURE ºC
Polychrome Painted Ware/Maiolica	Extensive Vitrification	850-1050
Zeuxippus Ware Subtype	Initial to Extensive Vitrification	800-950
Polychrome Sgraffito Ware	Extensive Vitrification	850-1050
Spanish Lustre Ware	Extensive Vitrification	950-1050
Maiolica	Extensive Vitrification	950-1050
Incised Sgraffito Ware	Extensive Vitrification	950-1050
Green and Brown Ware	Extensive to Intermediate Vitrification	1000-1150
Monochrome Glazed Ware	Extensive to Intermediate Vitrification	850-1150
Slip-Painted Ware	Extensive Vitrification	850-950
Pottery Wasters	Initial Vitrification	800-850

Table 57 Total description of the Stages of Vitrification and Temperatures of the sampled pottery collection from the Athenian Agora in Attica through Scanning Electron Microscopy (SEM).

THE CASTLE OF MYTILENE IN LESVOS	**STAGES OF VITRIFICATION**	**TEMPERATURE ºC**
Miletus Ware	Initial to Extensive Vitrification	800-950
Roulette/Veneto Ware	Extensive Vitrification	850-950
Polychrome Painted Ware	Intermediate to Total Vitrification	1050- >1150
Painted Ware	Intermediate to Total Vitrification	>1100
Glazed White Ware IV	Initial Vitrification	800-850
Polychrome Marbled Ware	Extensive Vitrification	950-1050
Kütahya Ware	Extensive Vitrification	1000-1050
Iznik Ware	Intermediate Vitrification	1050-1100
Monochrome Glazed Ware	Intermediate Vitrification	1050-1150
Polychrome Sgraffito Ware	Intermediate to Total Vitrification	1050- >1150
Overfired Stoneware	Total Vitrification	>1100
Porcelain	Total Vitrification	>1100

Table 58 Total description of the Stages of Vitrification and Temperatures of the sampled pottery collection from the Castle of Mytilene through Scanning Electron Microscopy (SEM).