



ANTIQUÉ AUTHENTICATION

authenticating antiques
through science

Raman Spectrometry

Raman spectrometry is a non-invasive analysis technique. It uses a laser beam and is able to define the composition of minerals, pigments and gems. This technique is dedicated to the analysis of mineral compounds and is not relevant for organic compounds and amorphous compounds; such as glass, enamel and porcelain.

If Raman spectrometry is used on porcelain, it will obtain the signal of the silicated amorphous matrix and eventually the nature of the colored pigments. From these results, it is possible to determine if the pigments are modern (19th century or later), but it cannot define if they are ancient.

From a Raman analysis, it is possible to conclude that a porcelain is modern, but it cannot prove it is ancient. For example, if natural pigments are detected like cobalt, copper or iron oxide, one could only state that the pigments are natural and were known during ancient times. But that does not mean that they were used in ancient times.

Raman spectrometry is an interesting technique because it is non-invasive, but it cannot be used by itself to determine the antiquity of a porcelain or a pigment.

The best way to authenticate porcelain remains TL testing, even if samples are required.