

Book of Abstracts

**3rd Symposium of the
Balkan Archaeometry Network**

**29 - 30 October 2012
Bucharest, Romania**

Micro-Raman spectroscopy for the study of medieval art works

Biljana MINČEVA-ŠUKAROVA, Orhideja GRUPČE and Irena NASTOVA

*Institute of Chemistry, Faculty of Natural Sciences and Mathematics, "SS. Cyril and Methodius" University
Skopje, Republic of Macedonia*

In the last decades, Raman spectroscopy became one of the most widely used techniques for analysis of materials in the historical art works. This has been greatly utilized by the availability of databases of referent Raman spectra of substances (inorganic and organic) used in artworks.

In the course of our study on cultural heritage in our country, we have performed micro-Raman analysis of materials used in the wall paintings, icons, manuscripts and ceramics. In the present study, we present the results based on micro-Raman analysis of icons and manuscripts. This will include:

- Comparative pigment analysis on more than 20 icons, dated from 11th to 19th century, from different churches on the territory of the Republic of Macedonia.
- Comparative pigment and ink analysis in 4 old-Slavonic, 6 Greco-Byzantine and 4 Islamic manuscripts, mostly religious books.
- The multi-material application of Raman spectroscopy - demonstrated in the identification of pigments in the art work, coloured glass beads as well as pearls and semi-precious stones in the 18th - 19th century richly decorated Russian icon.

The analyses of pigments were performed in order to establish the development and specifics of color palette through centuries, to define a transfer of style, technology and artistic skills, and in some cases, to detect trails of interventions due to the conservation and restoration of the art works.

The information obtained from these studies gave some insight on the materials used in different historical periods in the medieval time.

Key words: *Micro-Raman spectroscopy, icons, manuscripts, pigments, glass beads*