

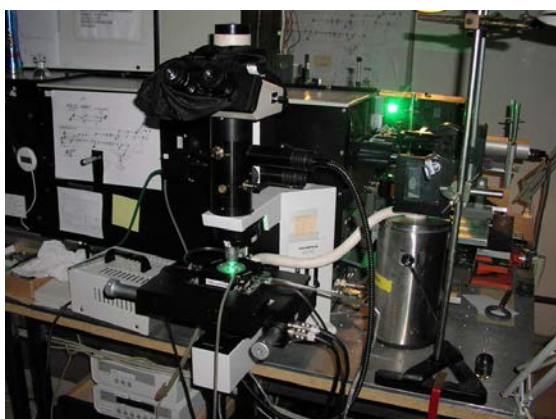
# Colour Pigment Grains on Art

Works of art, statues, paintings, ceramics, etc. commonly have solid color grains which can provide important information on the origin, authenticity, etc. We have recently conducted a study in cooperation with the Ny Carlsberg Glyptotek [1] in Copenhagen in order to examine the statues, mummies, paintings, pottery with a number of chemical analyzes. Among the most promising method were :

Raman spectroscopy (RS) and SERS (Surface Enhanced Raman Spectroscopy).

Our project included a study - with different instrumental techniques – on self-made and authentic pigments and pigments directly on works of art. The method is non-destructive. The project gave the opportunity to study new revelations about art and color pigments and the chance to try modern spectroscopic equipment, in collaboration with other universities.

## Raman Spectroscopy in the laboratory

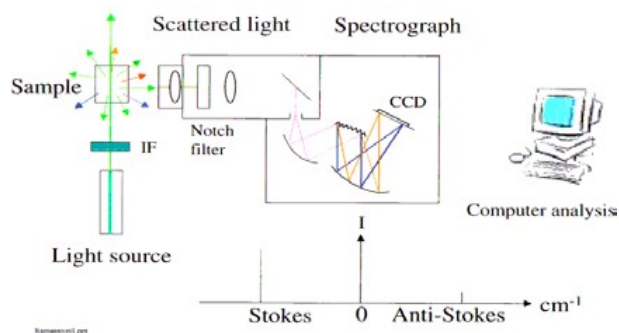


## In the Ny Carlberg Glyptotek

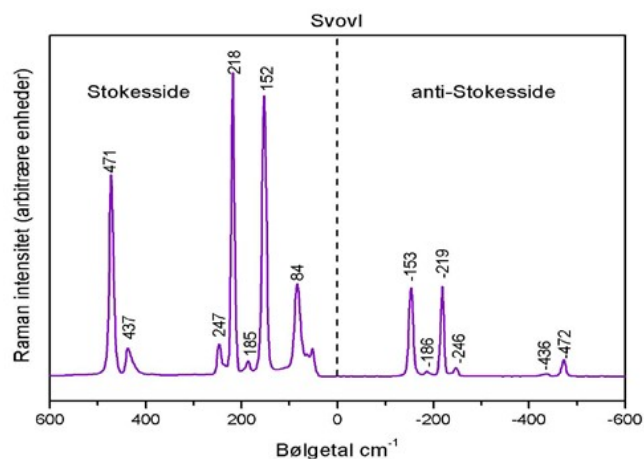


Raman spectroscopy is a universal analysis technique that uses laser light for the identification of molecules in solids, liquids and gases. You may select bachelor / intermediate / special / corporate / exam study projects on colors in art, analysis of processes in concrete / plastics / polymers or petroleum products.

## Raman Spectroscopy



## Principle



## Spectrum of sulfur

[1] [http://www.glyptoteket.com/sites/default/files/tracking-colour\\_report01\\_2009.pdf](http://www.glyptoteket.com/sites/default/files/tracking-colour_report01_2009.pdf) page 48 ff.

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