The use of micro-Raman Spectroscopy in soils characterization

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Introduction

Micro-Raman Spectroscopy (MRS) is used to characterize materials since it provides unique spectra, which is as a sort of fingerprint of each material. MRS (Fig. 1) combines the attributes of reliability and sensitivity with the amenability of *in situ* studies, without previous sample preparation. Samples can be measure with high speed of analysis and preventing sample contamination (Figs. 2 and 3).

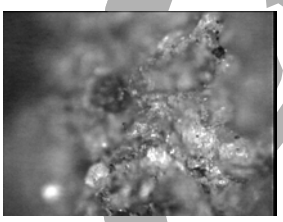
Fig. 1: Micro-Raman Spectrometer

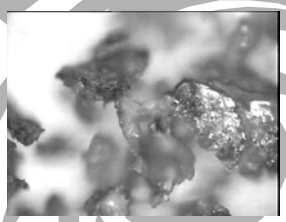
Fig. 2

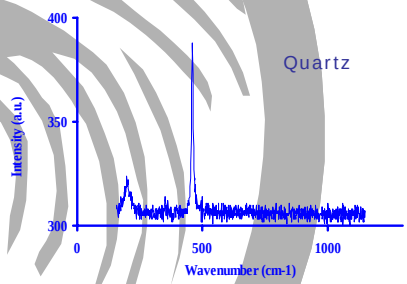
Fig. 3

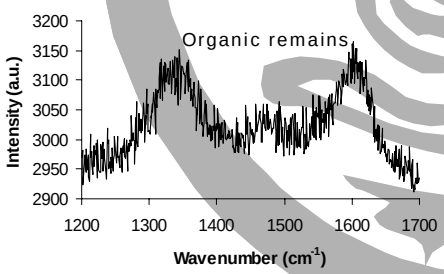
MRS analyses

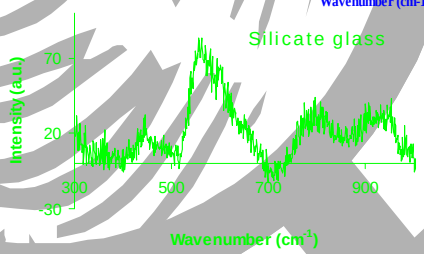
Soil sample nº 1: Quartz, organic matter and silicate glass.





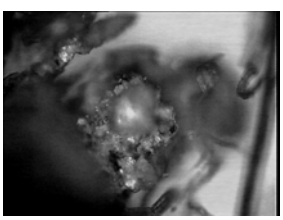


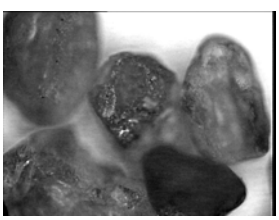


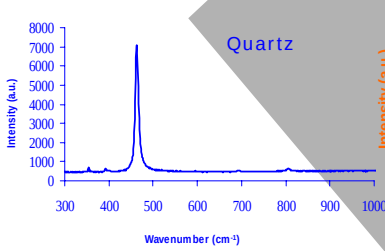


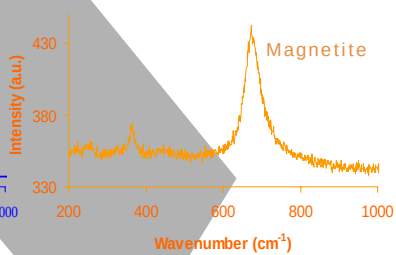
MRS analysis permitted not only the identification and characterization of mineral grains and unique particles by interpretation of Raman spectra, but also the visualisation of the grain morphology and size in each soil sample. Soil sample nº 1 and soil sample nº 2 were taken from different sites.

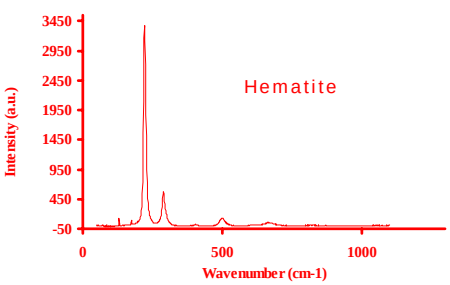
Soil sample nº 2: Quartz, magnetite, hematite, zircon and garnet.

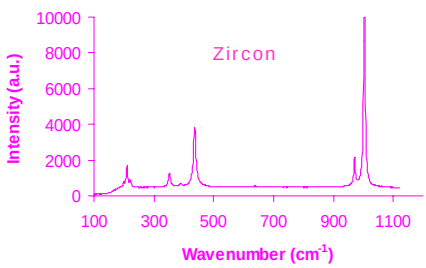


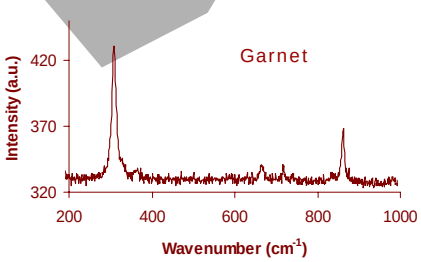












Acknowledgements
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