2D Elemental imaging tool with a mobile EDXRF system

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Imaging techniques are now commonly used in cultural heritage object analysis. It exists nowadays many different techniques in nature as well as many applications where they can be applied. The study of works of art requires usually these techniques to be non-destructive and non-invasive. Furthermore they are frequently asked to be adapted in order to perform analysis \textit{in situ}. Few years ago our laboratory developed a mobile EDXRF and UV-Vis-NIR coupled spectrometers, specially designed for fieldwork studies, where all the three techniques can be applied strictly on the same point of analysis\textsuperscript{1}. The EDXRF results obtained, though satisfactory, may still be improved by some technical development such as adding polycapillary X-ray optics to the system. Before to accomplish this step, recent developments on a new positioning system have now allowed to perform 2D elemental mappings with our mobile equipment, which is especially well adapted to paintings analysis. The control of the system is entirely carried out through a laptop computer running an homemade software written for this purpose. The positioning is achieved by means of a CCD camera embedded in the system and controlled via wifi connection through the computer. The acquisition system of the data, which is made through a homemade MCA, being also managed via the software mentioned above, goes through an ethernet connection. We will present here the new developments of the system as well as a example an \textit{in situ} 2D elemental mapping.