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Laser induced breakdown spectroscopy 2D mapping combined with 3D X-ray tomography: first results

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Laser induced breakdown spectroscopy can be used to provide 2D chemical image maps by using a 2D raster-scanning method. Such a setup was implemented using a very basic laser and spectrometer with 2D sample raster-scanning and data acquisition. First results from this setup are shown as applied to a gold ore sample containing different minerals. The different minerals are identified and a 2D false colour map generated.

Extension of 2D image data into 3D is demonstrated by making use of 3D X-ray micro computed tomography and correlation of the 2D and 3D information. This is done for all minerals that are identified by LIBS on the surface, and can hence be identified subsurface and quantified in 3D. The advantages of the combination of these two techniques are outlined in this presentation.

