Hyperspectral Imaging Shines Light on Life in the Stone Age

The 5,500-year-old clay figurines found at community excavations in Vantaa, Finland, in the summer of 2014 were recently scanned with SPECIMâ€™s hyperspectral camera. The imaging revealed that clay in the figurines was similar to clay on the ground at the excavation site. The figurines were scanned with Fenix, the full-spectral sensor installed in the SisuROCK scanner. It is similar to the AisaFENIX, the full-spectral sensor for remote sensing.

Archaeologists' theory that the bigger of the two figurines would have been used as an oil lamp could not be verified. Spectral signatures of seal blubber, which is still used in oil lamps by indigenous peoples inhabiting the Arctic regions, were absent from the spectral profile of the figurine. There were no traces of other organic materials such as blood on either of the figurines. However, the absence of the traces does not mean that they were not used; they may have disintegrated in the course of the millenniums.

The conclusions were made by comparing spectral profiles of figurines and reference samples. It was interesting to notice that the method is suitable for the analysis of archaeological finds, said archaeologist Jan Fast, who brought the figurines to be scanned at SPECIM in Oulu. The analysis of the spectral profiles gave rise to several new questions regarding contacts in the Baltic Sea region during the Neolithic, the manufacturing techniques of the figurines as well as their ritual use, Fast continued.

The scanning of the figurines was done as pro bono work at SPECIM. The company was very excited by the opportunity to scan the archaeological figurines because it offered an opportunity to show how valuable 'spectral imaging' is in research and investigative work, said SPECIM's managing director, Georg Meissner.

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