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## OPTICAL MINERALOGY FOR PROVENANCING ARCHAEOLOGICAL CERAMICS IN THE DIGITAL-AGE: COLLECTING AND STORING DATA FOR PROCESSING AND PUBLICATION OF CERAMIC ARTIFACTS

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Optical Mineralogy analysis (OM), also known as petrography is a method for provenancing archaeological materials such as pottery, plasters, architectural fragments and sediments. The Samples are cut to 30 micrometer ( $\mu\text{m}$ ) in a conventional thin section and analyzed using a petrographic microscope under polarizing light, then, a written report is traditionally produced.

Transforming OM results into Manageable Data produces an issue with the subjective nature of the written description that can lead to inconsistencies. The description transforms the information from the visual platform, as seen through the microscopic lens, to the printed word which, by its nature, is an interpretation.

To overcome the subjectivity of the description, a method of data presentation that produces multiple pictures of each thin section in different scales (X40; X100 and X200). The visual data of the thin section is combined with additional textual information regarding the archaeological record (context, dating, date, technology, etc.) and is presented as a data sheet on a Filemaker database. Creating a visual, searchable, comparable and accessible database provides a platform suitable both for the processing and publication of ceramic artifacts (Fig. 1). Sharing this knowledge within the archaeological community is critical. Today, such platforms are offered online, for example The Levantine Ceramics Project (LCP) directed by A. Berlin from Boston University. This is an open, interactive website that provides with a digital resource that for comparative information regarding Levantine ceramics including much photographed OM data.

## **Three-Dimensional Recording at Tel Beth-Shemesh**

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Archaeological excavations and their publication suffer from two inherent problems:

1. Though fieldwork is an ongoing destructive process, publications are mainly a 'frozen' moment in time – presenting the final phase of the excavation accompanied by its interpretation
2. While excavation is conducted in a three-dimensional environment its results are normally displayed by two-dimensional paper publications (books, journals, etc.)