

## Reading the invisible: the role of optical investigations in the study of the Herculaneum papyri

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Herculaneum papyri found during the discovery of the Villa dei Papiri in the XVIII century are our only knowledge about Greek philosophical schools. Unfortunately, the original manuscripts are in a precarious state of conservation and the currently available editions of them have largely been made obsolete by the latest technological progress. The aim of the Advanced Grant ERC project ‘Greekschools’ is to provide a new protocol based on optical methods to increase the text reading and thus allow for a new critical edition of the whole treatise of Philodemus’ Arrangement of the Philosophers. A multi-disciplinary approach is adopted and non-invasive techniques to Herculaneum papyri investigations such as Macro X-Ray Fluorescence Imaging (MA-XRF), Shortwave-Infrared Hyperspectral Imaging (SWIR), high resolution digital microscopy and Technical Photography were applied to read the text hidden on the verso, detect, classify, and replace overlapping layers and read the text concealed inside them. In this work some first preliminary results will be reported.