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**BOOK OF
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XRF ANALYSES ON MOSAIC TESSERAE OF THE PALATINE CHAPEL OF PALERMO

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A first archaeometric study was carried out on the mosaic wall decoration at the Palatine Chapel aimed at identifying the raw materials used for the creation of the different coloured glass and metallic foil tiles. For the first time, a technical-material study of the precious mosaic decorations that decorate the walls of the Palatine Chapel in the Royal Palace of Palermo was proposed and carried out. This unique site, built at the behest of King Roger II of Sicily in 1129 and completed in 1143 AD, was registered by UNESCO in the WHL since 2015. Investigations were carried out using X-ray fluorescence spectrometry and scanning electron microscopy on glass tesserae used in the original mosaic surfaces and/or restoration areas. XRF *in situ* measurements were performed by using a mobile micro-XRF spectrometer for elemental analysis (Bruker Biospin ArtTAX 200), equipped with a low-power X-ray tube using a molybdenum anode as target. For the study of the non-coloured vitreous matrices (bottom and top glass layer called “*cartellina*” of the golden tesserae) the XRF analytical data were integrated with those performed on some samples analysed in scanning electron microscopy (SEM-EDS). The results of the investigations have allowed the identification of the chromophore chemical elements, the executive techniques, verifying the original areas or subsequent mosaic integration over time, and confirming the hypotheses established on the stylistic analysis proposed by art historians. This work was funded by the project coordinated by Ruggero Longo and aimed to “Valorizzazione e fruizione del Palazzo Reale di Palermo” (Po-Fesr 2014-15) and partly by the Project MIUR PON03PE_00214_2 “Sviluppo e Applicazioni di Materiali e Processi Innovativi per la Diagnostica e il Restauro di Beni Culturali (DELIAS)” provided by the National Ministry of Education and Research (MIUR).