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THz wave for Cultural Heritage @ IREA-CNR

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Nowadays, Teraherz (THz) waves are receiving huge attention in the frame of cultural heritage [1], [2]. THz imaging and spectroscopy are, indeed, useful tools for gathering high-resolution (of the order of mm) information about construction modality, preparing drawings and author's re-paintings, conservation state of artworks as well as to identify previous restoration actions, mainly of paintings and frescos. THz time-domain systems are part of the imaging/mapping technological tools of the Italian node of the European research infrastructure for heritage science (E-RIHS.it) [3]. Since 2014, research activities regarding the design of strategies for improving the imaging capabilities of THz waves and their application in artworks surveys are carried out at the Institute for Electromagnetic Sensing of the Environment, National Research Council of Italy (IREA-CNR) [4]. This communication aims at providing a critical overview of the THz potentialities and describing the main challenges for a reliable and accurate data interpretation; finally, some results mainly regarding majolica and ancient decorated mortar specimens will be presented, even with the aim to point out the developed strategies to solve issues in data acquisition and processing. [5], [6].

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