



**ENVIRONMENTAL EFFECTS ON GLAZED CERAMICS: GREEN STAINS IN 18<sup>th</sup> CENTURY BLUE-AND-WHITE PORTUGUESE TILE GLAZES**

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**ABSTRACT**

Ancient ceramic tiles exposed to environmental conditions are liable to the development of micro-organisms that give rise to various pathologies and ultimately, to severe degradation. Decorated tiles are particularly vulnerable to environmental effect whenever exposed, as in the case of an 18<sup>th</sup> century blue-and-white Portuguese tile panel called “Cura do Cego”, belonging to the collection of the National Tile Museum (MNAz), where green stains are nowadays observable in the glaze.

The present work reports a prospective diagnosis of this green tarnishing. Chemical characterisation of the tile glaze was performed by irradiating small tile fragments in a wavelength-dispersive X-ray fluorescence spectrometer and phase constitution was concomitantly assessed using a powder diffractometer. Scanning electron microscopy with energy-dispersive system was applied to infer the chemical changes induced in the glaze and tentatively observe the morphology of green-staining micro-organisms.

Such tile pathologies are particularly suitable for testing an innovative non-destructive decontamination technique applying gamma radiation. Preliminary results of this study are reported and discussed.

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## Book of Abstracts



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