Unconventional thermographic and ultrasonic tests for a case study of the stone decoration of St. Leo Chapel, in Bova-Italy

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The poster aims to report the scientific findings of diagnostic tests carried out in the private St. Leo Chapel in Bova, Reggio Calabria-Italy. The chapel was constructed in the late seventeenth century and contains a Baroque altar dedicated to Saint Leo built between 1722 and 1732. The altar comprises four columns, which are painted to imitate marble, placed above a stone altar slab fronted with marble cladding.

The unsatisfactory condition of this cladding required careful investigation and documentation before a suitable treatment was selected. Sections of cladding requiring removal before re-adherence could occur needed to be distinguished from those which required little or no intervention. Thermographic and ultrasonic analysis was used to determine the structural condition of the cladding substrate and identify detached areas. These techniques exploit the differences in emissive power and in ultrasonic speed between sections of stone that are well-adhered and those that are detached. The non-invasive technique provided conservators with a cognitive instrument that gave additional information to simple visual inspection.

**INVESTIGATION PROTOCOL**

**VISUAL INSPECTION:** preliminary identification

**THERMOGRAPHIC TESTS:** identification of detached areas

**ULTRASONIC TESTS:** Assessment of degree of detachment

**DIAGNOSIS**

**INTERVENTION**