

Nanomatch



NANO-SYSTEMS FOR THE CONSERVATION OF IMMOVEABLE AND MOVEABLE POLYMATERIAL CULTURAL HERITAGE IN A CHANGING ENVIRONMENT

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SYNTHESIS OF METAL ALKOXIDES

DEVELOPMENT OF TWO ALKOXIDE CONSOLIDANT PRECURSORS:

- **EVOLVING TO NANO-STRUCTURED ADHERENT COATINGS**
- **COMPATIBLE WITH THE MAIN MATERIALS USED IN HISTORIC BUILT HERITAGE**
- **ENSURING ENHANCED SUSTAINABILITY, DURABILITY AND EFFICIENCY COMPARED TO CONVENTIONAL CONSERVATION PRODUCTS**

FOR THE CONSERVATION OF STONE AND WOOD:

CALCIUM ALKOXIDE PRECURSORS OF CORRESPONDING CARBOHYDRATES



FOR THE CONSERVATION OF GLASS:

ALUMINIUM ALKOXIDE PRECURSOR OF AL₂O₃ (DEVELOPED IN EU PROJECT CONSTGLASS)



PERFORMANCE ASSESSMENT IN LABORATORY

STONE SUBSTRATES: CARRARA MARBLE, JAVONNIÈRES LIMESTONE, MAASTRICHT LIMESTONE

STONE LIKE SUBSTRATES: LIME MORTAR WALL PAINTING, REPLICA WITH FRESCO / EGG BINDER / OIL BINDER PAINT LAYER AND THREE DIFFERENT SETS OF FIGMENTS

WOODEN SUBSTRATES: PINE, POPLAR, LINDEN

GLASS SUBSTRATES: MODEL

PERFORMANCE ASSESSMENT OF MODEL SAMPLES WITH AND WITHOUT ARTIFICIAL AGEING IN COMPARISON TO COMMERCIAL PRODUCTS IN TERMS OF CONSOLIDATION AND BIDDIE EFFECT



PERFORMANCE ASSESSMENT IN FIELD

S. ORSO CATHEDRAL FIRENZE (ITALY)

STAVROPOLIS MONASTERY BUCHAREST (ROMANIA)

PERFORMANCE ASSESSMENT OF MODEL SAMPLES IN COMPARISON TO COMMERCIAL PRODUCTS IN TERMS OF CONSOLIDATION EFFECT

PERFORMANCE ASSESSMENT OF HISTORICAL SAMPLES

COLOGNE CATHEDRAL (GERMANY)

OVIEDO CATHEDRAL (SPAIN)



RISK ASSESSMENT & MARKET UP-SCALING

RISK ASSESSMENT FOR HEALTH & ENVIRONMENT IN RELATION TO:

- TOXICITY OF METAL ALKOXIDE SOLS AND SOLUTIONS
- NANO-PARTICLES EXPOSURE
- PRODUCTION OF:
- APPLICATION GUIDELINES
- MATERIAL SAFETY DATA SHEET (MSDS)

INDUSTRIAL UP-SCALING: FROM LAB SCALE TO PILOT PLANT

LAB-SCALE PRODUCTION: 100 TO 800MG METALLIC CALCIUM

FIRST UP-SCALE BULK-SCALE: (1 TO 100G METALLIC CALCIUM)

INDUSTRIAL UP-SCALE: 300KG METALLIC CALCIUM

100 LITRES BATCH SIZE OF A1B

COSTS/BENEFITS ANALYSIS

MARKET RISK ASSESSMENT

BUSINESS PLAN



PARTNERS



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