

Nanomatch

NANO-SYSTEMS FOR THE CONSERVATION OF IMMOVABLE 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 PRECURSOR OF CORRESPONDING CARBOHYDRATE

FOR THE CONSERVATION OF GLASS:
ALUMINIUM ALKOXIDE PRECURSOR OF Al_2O_3 (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. ORTIZ CATHEDRAL FIRENZE (ITALY)
STAVROPOLOS MONASTERY BUCHAREST (ROMANIA)
COLOGNE CATHEDRAL (GERMANY)
OVIEDO CATHEDRAL (SPAIN)

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

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:
➤ MATERIAL SAFETY DATA SHEET (MSDS)
➤ INDUSTRIAL UP-SCALING: FROM LAB SCALE TO PILOT PLANT

LAB-SCALE PRODUCTION (80 TO 800MG METALLIC CALCIUM)
PILOT UP-SCALE (100-1000G) (1 TO 100G METALLIC CALCIUM)
INDUSTRIAL UP-SCALE (300KG METALLIC CALCIUM)

COSTS/BENEFITS ANALYSIS
MARKET RISK ASSESSMENT
BUSINESS PLAN

PARTNERS

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