

MATERIALS SCIENCE AND TECHNOLOGY

DISAT - Paint consolidation: towards the use of natural polymers for more sustainable products

Funded By	Dipartimento DISAT
Supervisor	CIMINO DAFNE - dafne.cimino@polito.it
Contact	
Context of the research activity	<p>The doctoral project is part of the FISA 2022 'COME-IN!' project concerning the consolidation of paintings on canvas and wood with polymeric materials of various chemical nature.</p> <p>Progetto FISA 2022 'COME-IN!' codice FISA-2022-00965 CUP E13C24001370001.</p>
Objectives	<p>The PhD student will develop new consolidating products for applications in the field of heritage conservation, in particular traditional paintings on canvas and wooden panel.</p> <p>The first phase of the study will be the characterisation of formulations currently used by conservators, identifying the criticalities and advantages of the application of each according to the context of degradation in which they are applied. It is indeed necessary to identify the main properties that a consolidating adhesive must have, analysing the products as they are and in the pictorial/material context of application.</p> <p>The current trend is a return to natural polymers of different chemical natures, so the result of the research will be one or more formulations capable of satisfying this condition, as well as the proposal of solvents that are healthier than aromatics and other irritating and/or toxic organic solvents currently used.</p> <p>The experimental formulations will be tested on ad hoc specimens and on real artworks to verify their compatibility with the materials used by the artist and with any restoration products applied that might be found on paintings due to previous conservation treatments. This exercise will make it possible to refine what has been obtained and functionalise the molecules used in order to increase affinity and compatibility.</p>
Skills and competencies for the development of the activity	<p>Basic knowledge of organic chemistry and polymeric materials.</p> <p>Degree in materials science and engineering (LM-53), chemical engineering (LM-22), chemical sciences (LM-54), science and technology for the cultural heritage (LM-11) and similar according to Italian academic curricula.</p> <p>Equivalence of foreign degrees based on academic courses.</p>