



Università  
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Venezia

Dipartimento di  
Scienze Molecolari  
e Nanosistemi



Seminario di conclusione del progetto PHOTOELECTROART  
**New insights on the mechanism and critical factors behind the deterioration of geranium lake pigments**

**22 aprile 2024**, ore 11.30

Epsilon 2, Campus Scientifico, Via Torino 155  
Mestre (Venezia)

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Safeguarding and enhancing Europe's cultural heritage is a EU policy. However, cultural heritage objects are usually affected by degradation reactions that endanger their preservation, leading to costly restorations procedures and, eventually, the partial or total loss of the pieces. Two lake pigments widely used in historic-artistic pieces are **madder lakes** and **geranium lakes**. Both pigments are known to react under light exposure leading to a fading of their color, although the precise photo-chemical reactions are not yet known. Consequently, the main goals of this MSCA-Postdoctoral Fellowship project were I) to understand the photo-reactivity of these pigments, II) to investigate the impact of

the environmental conditions in their degradation mechanism and III) based in the obtained information, to suggest mitigation strategies to improve the preservation of the historical objects which contains them.

To achieve this, PHOTOELECTROART has exploited a highly interdisciplinary approach and a wide scientific network, including scientific partners from Italy, Belgium and France. Results provided new information on the reactivity of these pigments, as well as new multitechnique approaches to study the photochemistry of cultural heritage materials.