

## **Nanocellulose as bio-inspired consolidant for degraded wood**

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The development of science and nanotechnology brings forward higher and higher requirements for the properties of materials. In this contest nanocellulose, with many fascinating properties including high specific surface area, good possibility for chemical modification, biodegradability and outstanding mechanical strength, has wide application prospects. In this work, multifunctional nanocellulosic materials have been studied as new bio-inspired consolidants for the recovery and conservation of Cultural Heritage.

In particular, the aim of this work was to evaluate the effectiveness of nanocellulose as a consolidant for degraded wood and to compare it with two of the most used traditional consolidants: the synthetic resins Paraloid B-72 and Regalrez 1126. The crystalline nanocellulose (CNC) was supplied by High Materials Innovation (HMI) (a spin-off company from Parma University) and the degraded wood samples were provided by the Cabinet of Scientific Research applied to Cultural Heritage of Vatican Museums.