

KN-6**PICKERING EMULSION BASED ON HALLOYSITE NANOTUBES:
APPLICATIONS AND STRATEGIES****Lorenzo Lisuzzo, Giuseppe Cavallaro, Stefana Milioto, Giuseppe Lazzara***^aDipartimento di Fisica e Chimica, Università degli Studi di Palermo, Viale delle Scienze, pad.
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Abstract. The design of novel composite based on wax/halloysite nanotubes hybrid microspheres will be reported.^{1,2}

We prepared wax/halloysite Pickering emulsions in various media. The stability and the structure of the obtained pickering and their stability which were characterized. SEM images allowed to have more detailed insights on the nanotubes disposition at the wax/water interface, acting as an outer stabilizing shell. Therefore, the cellulosic biopolymer was added and it was found that it enhances the colloidal stability of the particles, preventing their coalescence and sedimentation. The preparation of the composite films was carried out by solvent casting method, which enabled the development of very homogeneous materials with controlled wettability and heat reservoir features.

Finally, we have investigated the suitability for conservation protocols in Cultural Heritage restoration and in particular for waterlogged archaeological wood consolidation as well as stone surface protection.

References

1. Lisuzzo L., Caruso M. R., Cavallaro G., Milioto S., Lazzara G. Hydroxypropyl Cellulose Films Filled with Halloysite Nanotubes. Wax Hybrid Microspheres. *Ind. Eng. Chem. Res.* 2021. Vol. 60, pp. 1656–1665.
2. Lisuzzo L., Hueckel T., Cavallaro G., Sacanna S., Lazzara G. Pickering Emulsions Based on Wax and Halloysite Nanotubes: An Ecofriendly Protocol for the Treatment of Archeological Woods. *ACS Appl. Mater. Interfaces.* 2021. Vol.13, pp. 1651–1661.