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Extended Abstract

Overview of the Materials Used for the Conservation/Restoration of Traditional Buildings †

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† Presented at the 15th International Symposium "Priorities of Chemistry for a Sustainable Development" PRIOCHEM, Bucharest, Romania, 30th October–1st November 2019.

Published: 14 October 2019

Keywords: traditional buildings; conservation; restoration; commercial materials

The restoration and conservation of traditional buildings (Figure 1) represents an important topic, both at an international and national level. The selection of the materials used for preserving the heritage constructions must be made using a complex approach, using both the literature data regarding the properties of such materials and physico-chemical analyses of the support materials.

The present paper aims to review the recent progress regarding the development and application of traditional/modern materials used for the restoration and conservation of traditional buildings, both at an international and national level.

Several authors and reports all over the world present the use of classical and innovative recipes for the restoration and conservation of buildings, including lime mortar prepared by traditional techniques, or composite materials based on organic and inorganic fibers incorporated in polymeric matrixes applied to the surface of masonry [1]. Some authors suggest the reinterpretation of old construction materials, by incorporating additives such as animal glue, nopal, or olive oil to obtain lime mortars compatible with traditional buildings [2], while others present the damages induced to the heritage buildings when not all elements are considered (including the social value of the building) [3]. A constant of all the studied works is that the proper material for the restoration is always selected after extensive laboratory testing, including characterization of the support material, the restoration material and their interaction [4].

Figure 1. Example of a Romanian traditional building [5].

For the selection of the proper materials for the restoration and conservation of traditional buildings, the first step of a truly scientific approach is represented by the analytical characterization of the materials (both support materials and restoration material), as well as their interaction. Those studies should usually be conducted in a trans-disciplinary manner, including specialists from different areas, such materials science, architecture, civil engineering, and cultural heritage.

Acknowledgments: The authors gratefully acknowledge the financial support obtained through the project No. 5PS/2019, from the Sectorial Program—Romanian Ministry of Research and Innovation.

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