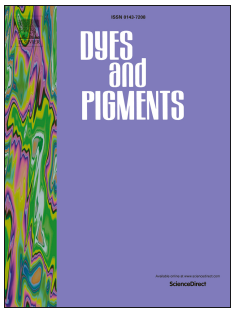
Accepted Manuscript



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PII: S0143-7208(18)30023-8

DOI: 10.1016/j.dyepig.2018.02.033

Reference: DYPI 6566

To appear in: *Dyes and Pigments*

Received Date: 4 January 2018

Revised Date: 19 February 2018

Accepted Date: 19 February 2018

Please cite this article as: Barbache S, Lamhasni T, El Bakkali A, Lyazidi SA, Haddad M, Ben-Ncer A, Hnach M, Optical analyses of wool dyeing materials in ancient Moroccan carpets “Zarbia(s)”: Combination of UV-vis diffuse reflectance, 3D-fluorescence and Raman spectroscopies, *Dyes and Pigments* (2018), doi: 10.1016/j.dyepig.2018.02.033.

Optical analyses of wool dyeing materials in ancient Moroccan carpets "Zarbia(s)": Combination of UV-vis diffuse reflectance, 3D-fluorescence and Raman spectroscopies

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Abstract

Two Moroccan antic wool carpets "zarbia(s)" registered at the Oudayas museum of Rabat, belonging to two main dyeing and weaving schools, Taznakht and Chiadma, have been expertized by means of UV-vis diffuse reflectance, 3D-fluorescence and Raman spectroscopies. All original dyeing materials were identified. Madder roots were used for red shades, *Reseda luteola* or *Rhamuns carthacus* plants for bright yellows, *Lawsonia inermis* for orange-yellows, *Indigofera tinctoria* for blues and the synthetic Malachite green for a particular bright green shade. Combined-dyes based recipes were also revealed by 3D-fluorescence; some green shades were identified as Indigo and flavonoids combined-dyes recipes and some reddish yellow shades identified as Madder and flavonoids combined-dyes ones. The study permitted also a spectrometric characterization of the most popular dyes used in ancient wool dyeing handcraft in Morocco; 3D-fluorescence seems a reliable tool to