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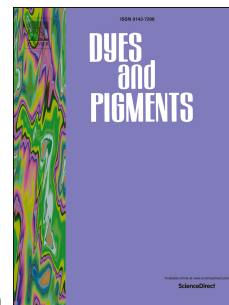
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Optical analyses of wool dyeing materials in ancient Moroccan carpets “Zarbia(s)”: Combination of UV-vis diffuse reflectance, 3D-fluorescence and Raman spectroscopies

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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 *Rhamnus 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

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