

COMPARARE A PROPRIETATILOR FIZICO-MECANICE ALE HARTIEI NETRATATE SI TRATATE DIN SECOLUL AL XX-lea

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Rezumat

In aceasta lucrare au fost studiate cateva proprietati fizico-mecanice ale hartiei cum ar fi: pH-ul, rezistenta la tractiune, modulul de elasticitatea, si proprietati optice ca: schimbarea in valoare absoluta a gradului de ingalbenire, reflectand acele modificari chimice care cauzeaza pierderea rezistentei, in timp, a documentelor de hartie.

Rezultatele s-au obtinut pentru niste probe de hartie, prelevate din carti din secolul al XX-lea (din colectii particulare), inainte si dupa tratarea cu nanoparticule de hidroxiapatita, ca o metoda noua si revolutionara de conservare preventiva.

Deasemeni, au fost evaluate si discutate influentele imbatranirii accelerate a hartiei, datorate luminii.

Proprietatile fizico-mecanice ale hartiei din cartile studiate au fost corelate cu unele investigatii spectrale ca: determinarile FTIR si UV-VIS.

Cuvinte cheie: *hartie de carte, pH, rezistenta la tractiune, elasticitate, grad de ingalbenire, nanoparticule de hidroxiapatita*

COMPARISON OF PHYSICAL-MECHANICAL PROPERTIES OF UNTREATED AND TREATED PAPER FROM XX-th CENTURY

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Abstract

In this paper, some physical-mechanical properties of paper as pH acidity, tensile strength, modulus of elasticity and optical properties as absolute change in yellowness, have been studied, reflecting chemical changes causing the loss of permanence in time for paper documents. The results have been obtained for some paper samples, prelevated from XX-th century books (private collections), before and after by treating with hydroxyapatite nanoparticles, as a new and revolutionary method for preventive conservation.

Also, the influence of accelerated light aging have been evaluated and discussed.

The physical-mechanical properties of the studied books paper have been correlated with some spectral investigations, as FTIR and UV-VIS.

Keywords: *books paper, pH, tensile strength, modulus of elasticity, yellowness, hydroxyapatite nanoparticles*