



Preparation of hybrid by sol-gel method

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LAP Lambert Academic Publishing Apr 2015, 2015. Taschenbuch. Book Condition: Neu. 220x150x8 mm. This item is printed on demand - Print on Demand Neuware - The effect of water content in different ratio for water/Tetraethylorthosilicate (H₂O/TEOS molar ratio) (R=2,3,4, and 5) was studied. R=2 was chosen as best ratio for adding organic polymers (PMMA&PVC) to prepare films from organic-inorganic materials and organic dye to prepare films of hybrid materials. Two silica forms were prepared. Silica xerogel rod was Prepared by molding method and silica thin film were prepared spin coating method. Organic-inorganic hybrids films were prepared with different mixing ratios (20% Polymer+80% TEOS, 50% Polymer+50% TEOS, 80% Polymer+20% TEOS). The of X-ray diffraction showed the formation of amorphous structure. The transmission spectra for samples showed a good transparency and homogeneity. FTIR Spectroscopy was studied in the range 3700-3500 cm⁻¹ which correspond to O-H stretching vibration of molecular water. The band range 2200-1600 cm⁻¹ correspond to O-H bending vibration of molecular water and solvent (alcohol C₂H₅OH). In the range 1300-400 cm⁻¹ the band at 1378-1060 cm⁻¹ assigns to asymmetric stretching vibration of Si-O-Si and the band at 470-450 cm⁻¹ associated with Si-O-Si bond bending vibration. 140 pp. Englisch.



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Reviews

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