



IR Investigation of Some Organotin(IV) Compounds Immobilized on Mesoporous Silica

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The IR-ATR and IR transmittance spectra of (4-*O*-acetyl ferulato)triphenyltin(IV) and (fenoprofenato)tributyltin(IV)¹ were recorded and analyzed. It was possible using the splitting of the $\nu(\text{COO})$ band in the IR spectrum of the compounds to prove a monodentate binding mode of the carboxylate group to the Sn atom. Also, the IR-ATR spectrum of the MCM-41 and SBA-15 mesoporous silica nanoparticles (MSNs)² were recorded and analyzed in order to check the mesoporous structure of the synthesized materials. The changes of the band profile, assigned to the Si-OH(H₂O) stretching vibration of the non-bridging oxygen atoms on heating the samples, prove that the two MSNs are mesoporous. Finally, the organotin (IV) compounds immobilized in both MSNs were analyzed using IR-ATR and IR transmittance spectroscopy, in order to assess the loading into the MSNs and the changes in their spectra connected to the interaction with the silica matrix.

Keywords: Infrared spectroscopy; Organotin(IV) compound; Mesoporous silica

References

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