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Characterization of Selenite Interactions

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The IR spectrum for the FDP (Fine Decomposed Peat) peat-Al(III)-selenite system appears in Figure 1. It shows that the Se-O stretching absorption is in 970 cm^{-1}, obscured by Si-O stretching absorption in 1035 cm^{-1}. This band appears in FDP peat and it is very intense. The distribution of selenite and Al(III) ion interactions on FDP peat surface previously determined showed that selenite interacts well in acidic and neutral pH values. IR spectra of two kinds of peat are shown, the carbonyls appear above 1500 cm-1 assigned to stretching of C=O with low intensity due to coordination with the aluminum. Also noticed the stretching of phenolics groups near to 3500 cm-1, associated to phthalic acids, for example. This results shows the effective interactions between the metals and the peat, additional to equilibrium previous studies using potentiometric titration. Selenium is both essential and toxic to life, depending on its concentration to living beings. The Peat-Al(III)-Selenite system can be used to control this chemical species in the environment.

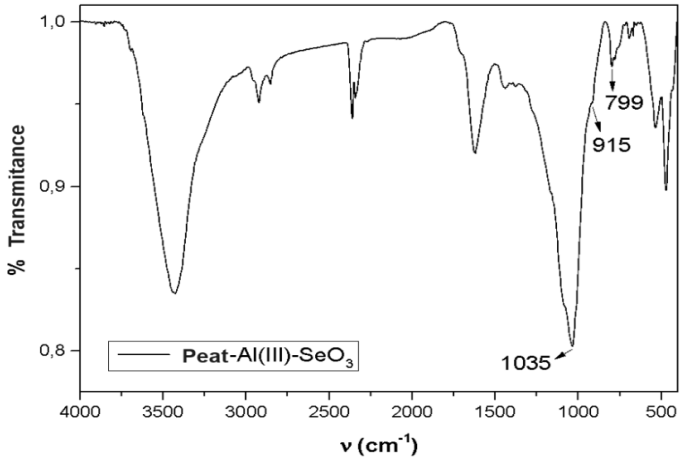

Figure1. IR spectrum of selenite-Al(III)-peat system at pH 4.0.

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References

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