

蒙脱石化学修饰电极的制备与电化学特性

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摘要 用预交换法和掺入法将某些荷阳电物(NR, MB)与荷阴电物[IC, Fe(CN)₆³⁻]吸附在蒙脱石膜中制备化学修饰电极(CME)。对不同电性的吸附物,用预交换法制备的CME在支持电解质溶液中显示不同的伏安响应。被吸附物在蒙脱石膜内的电活性浓度(c*)和总浓度(c-t)之比值较小,说明被吸附物中只有小部分表现有电化学特性。X衍射实验表明荷阳电的吸附物可能通过离子交换吸附而嵌入蒙脱石层间。吸收光谱实验亦表明荷阳电物与蒙脱石间有强的化学吸附作用。根据蒙脱石中各种不同的吸附位置,讨论了被吸附物对电化学响应的不同贡献。

关键词 X射线衍射分析 吸附 化学修饰电极 蒙脱石 中性红 靛红

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Preparation and electrochemical characteristics of montmorillonite chemical modified electrodes

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Abstract Montmorillonite chem. modified electrodes (CME) were prepared with certain cationic and anionic species absorbed in the montmorillonite film by both pre-exchange and incorporation methods. The cationic and anionic species absorbed exhibit different voltammetric response when the CME immersed in solns. containing only supporting electrolyte. Only a small fraction of the absorbed species is electrochem. active. X-ray diffraction and spectrophotometry reveal that cationic species can intercalate into the interlamellar spaces to form a clay-org. complex. The electroactivity of the absorbed species was discussed based on the different absorbed sites available in montmorillonite.

Key words X-RAY DIFFRACTION ANALYSIS ADSORPTION CHEMICAL MODIFIED ELECTRODE MONTMORILLONITE NEUTRAL RED ISATIN

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