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花生酸-钌有机螯合物**Ru(phen)_3~(2+)**的单分子膜和**LB**膜中分子聚集行为的研究

方堃,邹纲,吕卫星,何平笙

中国科学技术大学高分子科学与工程系,合肥(230026)

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摘要 以功能性的钌有机螯合物Ru(phen)_3~(2+)作为亚相离子，花生酸在亚相表面 上形成稳定的单分子膜。π-A等温线和动态弹性测量表明，此膜因花生酸与钌螯离 子发生了静电相互作用而有更大的可压缩性，并在固态区发生了分子聚集。用垂直 法成功地制备了嵌有Ru(phen)_3~(2+)离子的超薄有序Y-型LB膜。光谱实验表明， 所得LB膜是稳定、均匀的层状三明治结构，在层面内Ru(phen)_3~(2+)与花生酸结合成相对稳定的分子基团形成了J-聚体。

关键词 钌络合物 螯合物 弹性 花生酸

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Study of the Molecular Aggregation in Arachidic Acid-Ru(phen)_3~(2+) Monolayer and LB Films

Fang Kun,Zou Gang,Lu Weixing,He Pingsheng

Department of Polymer Science and Engineering, University of Science and Technology of China,Hefei(230026)

Abstract Stable Langmuir monolayer of arachidic acid (AA) was formed on a subphase of tris (1, 10-phenanthroline) ruthenium(II) [Ru(II)] aqueous solution. π-A isotherm and dynamic elasticity measurements indicated that the monolayer was more condensable than that on pure water due to the electrostatic interaction between AA and Ru(II) ions and would aggregate in solid-like state. Y-type AA LB films containing the photofunctional ions, Ru(II) were deposited successfully and characterized by UV-visible and low angle X-ray diffraction spectra respectively. It was proved that the obtained AA-Ru(II) LB films were stable, homogeneous and sandwich-like multilayers, in which the relatively stable AA-Ru(II) groups aggregated to form J-aggregate in each layer.

Key words RUTHENIUM COMPLEX CHELATES ELASTICITY Arachidic Acid

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通讯作者