

研究论文

一代碳硅烷树枝状大分子钯配合物的液晶性

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摘要 合成了新的周边含12个4-硝基偶氮苯端基一代碳硅烷树枝状大分子的钯(II)配合物(G1Pd), 并用元素分析、核磁共振氢谱、碳谱、红外、紫外-可见光谱、能量色散X射线分析(EDXRA)、偏光显微镜、差示扫描量热法和广角X射线衍射法对其结构和液晶性质进行了表征.

配合物G1Pd的相行为是K122ch189I166ch90K. 给出一种具有新的结构特点的液晶性树枝状大分子, 它兼有配位金属和介晶基元.

在液晶和液晶高分子界观察到首例胆甾相的高强向错和首例树枝状大分子配合物的高强向错现象.

关键词 [高强向错](#) [钯-偶氮配合物](#) [胆甾相液晶](#) [树枝状大分子配合物](#)

分类号

Liquid Crystallinity of Palladium Complex of the First Generation Carbosilane Dendrimer

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Abstract The synthesis of a new palladium-azo complex of carbosilane dendrimer of the first generation (G1Pd) was described. Twelve 4-nitroazobenzene groups were used as fragments and attached on its periphery. Azobenzene groups of carbosilane dendrimer underwent *ortho*-metallation by reaction with PdCl₄²⁺ giving palladium(II)-azo complex. The structure and liquid crystallinity (LC) of G1Pd were characterized by elemental analysis, ¹H NMR, ¹³C NMR, IR, UV-vis, energy-dispersion X-ray analysis (EDXRA), polarizing optical micrography, DSC and WAXD. The phase behavior of G1Pd in LC state is K122ch189I166ch90K. An LC dendrimer having novel structure characteristic was given, which has metal coordination bond and mesomorphic moiety. The high-strength disclination was first observed from cholesteryl LC state and dendritic complexes of liquid crystal and LC polymers.

Key words [high-strength disclination](#) [palladium-azo complex](#) [cholesteryl liquid crystal](#) [dendritic polymeric complex](#)

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