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我国学者在分子液晶研究方面取得新进展

在国家自然科学基金重点项目和国家杰出青年基金支持下,北京大学高分子科学与工程系的液晶高分子研究又取得了一些重要进展并受到国际学术界关注. 1987年周其凤等提出的甲壳型液晶高分子的概念得到了各国学者的广泛关注,而北京大学在该方向的研究一直处于领先地位,已成功合成了上百个具有不同化学结构的甲壳型液晶高分子,并从不同的视角对其结构和性质开展了研究. 最近,陈尔强等对其中的聚乙烯基对苯二甲酸二烷基酯的相结构和相转变进行了深入研究. 研究表明,当其侧基中烷基为丙基至己基时,侧基的“甲壳效应”能诱导产生高阶有序的柱状液晶相;通过合成改变侧基的大小,该系列高分子的凝聚态相结构能在无定型及液晶相之间得到有效的调制. 这一工作为实现聚合物分子工程的构想提供了简洁的新途径. 该研究成果最近发表在化学领域重要期刊“*J Am Chem Soc*”(美国化学会志, 2003, 125: 6854~6855)上. 周其凤等关于利用可控自由基聚合制备以甲壳型液晶高分子为刚性链段和以聚硅氧烷为柔性链段的有机/无机杂化型嵌段高分子的工作,最近发表在分子领域重要国际刊物“*J Polym Sci, Part A: Polym Chem*”(高分子科学-高分子化学分刊, 2003, 41: 1799~1806)上,也引起了国际学术界关注.

(董建华 供稿)