

水溶液中对磺酸钠杯[8]芳烴醚与芘间的相互作用

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摘要 用荧光法研究了一个长链水溶性杯芳烴醚-十二烷基对磺酸钠杯[8]芳烴醚与芘在水溶液中的相互作用,以及盐氯化钠和共溶剂甲醇对此作用的影响。结果表明:芘进入了此杯芳烴醚的疏水孔穴形成了包合物;其复合常数和短链对磺酸钠杯芳烴醚的复合常数相近,但其疏水孔穴的非极性明显加大;且在盐及甲醇浓度较小时,它们对上述相互作用及复合常数的影响都不大。

关键词 [磺酸钠](#) [杯芳烴](#) [醚](#) [芘](#) [相互作用](#) [溶剂效应](#) [盐效应](#)

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Interactions between octasulfonato-octakis(dodecyloxy) calix[8] arene and pyrene in aqueous solutions

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Abstract The interactions between octasulfonato-octakis (dodecyloxy) calix[8] arene and pyrene in aqueous solutions were investigated by fluorescence spectroscopy. In water, pyrene was incorporated in the hydrophobic domain of this calixarene forming inclusion complex. The association constant for 1:1 complex is $5.0 \times 10^6 \text{ mol}^{-1} \cdot \text{dm}^3$. Compared with the interactions between octasulfonato-octakis (butyloxy) calixarene or octasulfonato-octakis (hexyloxy) calixarene and pyrene, the much longer hydrocarbon chains of our host lead to obvious enhancement on the apolarity of the cavity but no obvious increase in the association constant. Besides, the salt effect of NaCl and co-solvent effect of methanol on this interaction were also investigated. NaCl makes no obvious influence when its concentration is below $0.01 \text{ mol} \cdot \text{dm}^{-3}$. Methanol also causes no obvious influence when its volume concentration in water is lower than 10%, but gives an obvious decrease in the association constant when its concentration is higher than 20%.

Key words [CALIXARENE](#) [ETHER](#) [PYRENE](#) [INTERACTIONS](#) [SOLVENT EFFECT](#) [SALT EFFECT](#)

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