

二吡咯甲烷与醌的电荷转移相互作用研究

郭勇*, 徐健, 邵士俊

中国科学院兰州化学物理研究所, 甘肃省天然药物重点实验室, 730000, 兰州

E-mail: shaoguo@lzb.ac.cn

随着理论研究的不断深入和在实际中的广泛应用积累, 近年来对电荷转移配合物的研究已深入光敏材料、超导材料、特殊高分子材料及药理学、生物学和材料科学等领域, 已引起了各方面专家的极大兴趣和深入开发。通过对二吡咯甲烷与醌类化合物紫外可见光谱、质谱、红外光谱和能谱的定性试验研究表明, 二吡咯甲烷作为电子给予体能够给出电子, 醌由于缺电子能够接受电子, 两者通过电子转移形成电荷转移配合物。

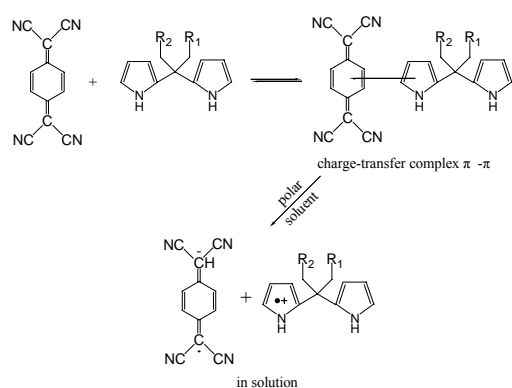


Fig. 1 mechanism of reaction between TCNQ and dipyrromethanes

Tab. 1 Stability Constants for dipyrromethanes with TCNQ in CH₃CN

主体	客体	稳定常数 K(Lmol ⁻¹)	- G (kcalmol ⁻¹)
	D1	596.5	53.1
	D2	418.0	50.2
TCNQ	D3	463.4	51.0
	D5	564.3	52.7
	D6	541.3	52.3
	D7	539.3	52.3

关键词: 二吡咯甲烷; 醌; 电荷转移配合物。

参考文献:

- [1] Uno B., Okumura N., Sato K., J. Phys. Chem. A, 2000, 104, 3064-3069
- [2] Shijun Shao, Yong Guo, Lijun He, Shengxiang Jiang and Xianda Yu, *Tetrahedron Lett.*, 2003, 44(10), 2175-2178.

Study on charge-transfer complexes of dipyrromethanes-quinone

Yong Guo*, Ji Xu, Shi-Jun Shao

Key Laboratory for Natural Medicine of Gansu Province, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000

A colorimetric recognition system, formed by the dipyrromethanes and quinone in solution through non-covalent π - π stacking interaction, has been explored by UV Vis spectroscopy method. The dipyrromethane-quinone molecular complexes were characterized by IR, FAB-MS, XPS pattern, etc.. The present results indicated that the dipyrromethanes could serve as electron donors to form colored charge-transfer complexes with tetracyanoquinodimethane (TCNQ).