

吡啶酮系偶氮染料脞体结构中亚胺基质子的交换和解离动力学

彭勤纪,刘辉,李慕洁

大连理工大学化工学院

收稿日期 修回日期 网络版发布日期 接受日期

摘要 吡啶酮系偶氮染料脞体结构中,亚胺基质子能与水分子中的质子发生交换和解离。用核磁双共振实验测定了交换速率(k_a)和活化能(E_0)。两者均与染料结构、pH值、温度、

溶剂性质和水含量等因素有关。在重氮和偶合组分一的亲电取代基和溶液中的碱都能促进交换反应。本文进一步解释了该系列染料的变色机理和染料具有不同的pH值。

关键词 [活化能](#) [吡啶酮](#) [偶氮染料](#) [解离](#) [变色机理](#) [脞体结构](#) [亚胺基质子](#) [核磁双共振](#)

分类号 [0621](#)

Kinetic of exchange and dissociation for imino proton in hydrazone form of pyridone azo dyes

PENG QINJI,LIU HUI,LI MUJIE

Abstract Pyridone azo dyes usually exist in hydrazone form. The proton of imino group (δ 3.2-4.0). The proton lifetime (τ_A) and activation energy (E_0) can be determined by means of nuclear magnetic double resonance. It is discovered that the exchange rate (k_a) and E_0 are related to structure of the dyes, pH values, temperature, property of the solvents used and relative content of water in the solution. In this paper, the effect of dye structure on τ_A and E_0 has been investigated under similar experiment conditions. It is shown that the k_a can be promoted by both the electron-withdrawing substituents in diazo and coupling components. Alkali in the solution can accelerate k_a and decrease E_0 . The colour change mechanism and different pK values of the dyes have also been further explained in this paper.

Key words [ACTIVATION ENERGY](#) [PYRIDINONE](#) [AZO DYES](#) [DISSOCIATION](#)

DOI:

通讯作者

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF\(295KB\)](#)

▶ [\[HTML全文\]\(0KB\)](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“活化能”的 相关文章](#)

▶ 本文作者相关文章

· [彭勤纪](#)

· [刘辉](#)

· [李慕洁](#)