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分光光度法工作曲线不符线性关系的探讨 **II:** 关于在等色点波长测量

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摘要 光度法工作曲线不成线性关系的情况多数是由体系存在逐级配合物所致, 为获得线性关系, 有人提出在两逐级配合物的主要等色点波长测量, 认为这样可以避免同时生成第二配合物的影响, 但没有深入的理论分析。本文通过实验与理论分析, 证明此法在多数情况下仅可改善线性关系, 但不能得到直线, 经进一步研究, 找到了这个问题的另外解决办法。

关键词 分光光度法 比色法 络合物 二甲酚橙 波长 钪 曲线 线性方程 离子浓度

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Investigation on non-linear relationship of the calibration curve in spectrophotometric determination II: Measurement at isosbestic point wavelength

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Abstract If the deviation of calibration curve from linearity in spectrophotometry is generated by the simultaneous presence of a second complex in a stepwise complex system, it has been demonstrated theor. that a straight line can not be obtained by measuring at the wavelength of the isosbestic point of the two stepwise complexes. Because this wavelength only provides a condition, i.e. e1:2 = 2e1:1, where e is molar absorptivity, and according to the absorbance formula of a system in which both 1:2 and 1:1 complexes are present at the same time, a straight line can be obtained only when the requirement e1:2 = e1:1 + eL is met, where L is ligands. So, it is necessary to find another wavelength to meet this requirement. This wavelength was found theor. and used in the scandium-Xylenol Orange system. As a result, a calibration curve with satisfactory linear relationship was obtained.e

Key words SPECTROPHOTOMETRY COLORIMETRIC METHOD COMPLEX COMPOUNDS XYLENOL ORANGE WAVE LENGTH SCANDIUM CURVE LINEAR EQUATIONS ION CONCENTRATION

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