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Color Reaction of 2-(2-Quinolylazo)-5-Dimethylaminoaniline with Palladium and Its Application

Yunsen SI[1,2], Qiufen HU[1], Zhangjie HUANG[1],
Guangyu YANG[1], Jiayuan YIN[1]
[1]Department of Chemistry, Yunnan University; Kunming 650091, P.R. CHINA
e-mail: huqiufena@163.com
[2]Science College, Kunming University of Technology; Kunming 650031, P.R. CHINA

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Authors

Abstract: A new chromogenic reagent, 2-(2-quinolylazo)-5-dimethylaminoaniline (QADMAA) was synthesized. A sensitive, selective and rapid method for the determination of palladium based on the rapid reaction of palladium(II) with QADMAA was developed. In the presence of 0.5-2.5 mol L^{-1} of hydrochloric acid solution and cetyl trimethylammonium bromide medium QADMAA reacts with palladium to form a violet complex with a molar ratio of 1:2 (palladium to QADMAA). The molar absorptivity of the chelate is 1.35×10^5 L mol^{-1} cm^{-1} at 600 nm. Beer's law is obeyed in the range of 0.01 to 0.6 μ g mL^{-1}. The detection limit is 1.2 μ g L^{-1}. This method has been applied to the determination of palladium with good results.

Key Words: 2-(2-quinolylazo)-5-dimethylaminoaniline, palladium, spectrophotometry

chem@tubitak.gov.tr

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