

## عنوان مقاله:

Simultaneous spectrophotometric determination of Zinc and Copper with 4-(2-thiazolylazo) resorcinol using parallel factor analysis (PARAFAC) and orthogonal signal correction- partial least squares (OSC-PLS).

## محل انتشار:

دومین همایش ملی پژوهش های کاربردی در علوم شیمی، زیست شناسی و زمین شناسی (سال: 1393)

تعداد صفحات اصل مقاله: 9

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## خلاصه مقاله:

An ultraviolet spectrophotometry method utilizing 4-(2-thiazolylazo)resorcinol (TAR) was developed to simultaneous determination of Zn(II) and Cu(II) using parallel factor analysis (PARAFAC) and partial least squares (PLS) and orthogonal signal correction partial least squares (OSC-PLS). TAR was chosen as the visible absorbing chelating ligand because of its ability to form stable complexes with a wide variety of metals. The work was carried out in pH range from 5.0 to 10.0 and wavelength range was from 200 to 500 nm. Multivariate calibration models using PLS, OSC-PLS and PARAFAC at different pH were elaborated for ultraviolet spectra deconvolution and metals quantitation. The calibration set was constructed with standard solutions in a concentration range of 2.0-20.0 ppm. The best model for the system were obtained with PARAFAC at pH=8 and. The capabilities of the method for the analysis of real samples were evaluated by determination of Zn(II) and Cu(II) in waste water. The accuracy of method, evaluated through the root mean square error of prediction (RMSEP), were 0.021 and 0.017 for Zn and Cu, respectively. This procedure allows the simultaneous determination of Cu(II) and Zn(II) with TAR in synthetic and real samples and good reliability of determination was proved.

## کلمات کلیدی:

TAR, PARAFAC, PLS, OSC-PLS, simultaneous determination

## لینک ثابت مقاله در پایگاه سیویلیکا:

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