

Author's Accepted Manuscript

Coupling laser desorption with corona beam ionization for ambient mass spectrometric analysis of solution and powder samples

Hua Wang, Zhenghao Fei, Zhenxing Li, Rong Xing, Zhengming Liu, Yangyang Zhang, Hui Ding



PII: S0039-9140(17)31176-1
DOI: <https://doi.org/10.1016/j.talanta.2017.11.039>
Reference: TAL18101

To appear in: *Talanta*

Received date: 27 June 2017
Revised date: 21 October 2017
Accepted date: 16 November 2017

Cite this article as: Hua Wang, Zhenghao Fei, Zhenxing Li, Rong Xing, Zhengming Liu, Yangyang Zhang and Hui Ding, Coupling laser desorption with corona beam ionization for ambient mass spectrometric analysis of solution and powder samples, *Talanta*, <https://doi.org/10.1016/j.talanta.2017.11.039>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Coupling laser desorption with corona beam ionization for ambient mass spectrometric analysis of solution and powder samples

Hua Wang^{a,b}, Zhenghao Fei^a, Zhenxing Li^a, Rong Xing^a, Zhengming Liu^a, Yangyang Zhang^b, Hui Ding^{a*}

^aInstrumental Analysis Center, School of Pharmacy, Yancheng Teachers University, Yancheng 224007, People's Republic of China

^bNanjing University & Yancheng Academy of Environmental Protection Technology and Engineering, Yancheng 224005, People's Republic of China

*Corresponding author. Tel.: +86 515 88258773. hui_0325@foxmail.com

Abstract

An infrared (940 nm) laser desorption coupled with corona beam ionization (LD-CBI) technique was developed for expanding the application of the ambient mass spectrometry (AMS). A black ceramic sample plate was employed to facilitate the non-resonance absorption of laser energy. Solution and powder samples were immobilized in the shallow depression on ceramic plate and desorbed precisely since there was not gas disturbing. The dimer ion (m/z 1216.51) of reserpine was detected without any matrix assistance. In comparison with similar APCI-related ambient technique, the upper mass rang of analyte was broadened significantly. The feasibility of LD-CBI approach was demonstrated with 10 model pesticides. Typically, the limit of detection (LOD) of Malation was as low as 6 pg in the selected reaction monitoring (SRM) mode. The value is 166 times lower than the results from preceding technique desorption corona beam ionization (DCBI). As an APCI related ambient desorption ionization approach, LD-CBI technique could be a well complementary tool for direct detection of solution and powder samples.

Download English Version:

<https://daneshyari.com/en/article/7677320>

Download Persian Version:

<https://daneshyari.com/article/7677320>

[Daneshyari.com](https://daneshyari.com)