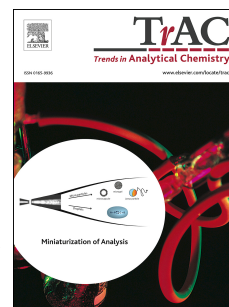


Accepted Manuscript

Chemical image moments and their applications

Hong Lin Zhai, Bao Qiong Li, Jing Chen, Xue Wang, Min Li Xu, Jin Jin Liu, Shao Hua Lu



PII: S0165-9936(18)30011-6

DOI: [10.1016/j.trac.2018.03.017](https://doi.org/10.1016/j.trac.2018.03.017)

Reference: TRAC 15126

To appear in: *Trends in Analytical Chemistry*

Received Date: 11 January 2018

Revised Date: 27 March 2018

Accepted Date: 27 March 2018

Please cite this article as: H.L. Zhai, B.Q. Li, J. Chen, X. Wang, M.L. Xu, J.J. Liu, S.H. Lu, Chemical image moments and their applications, *Trends in Analytical Chemistry* (2018), doi: 10.1016/j.trac.2018.03.017.

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 proof before it is published in its final 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.

Chemical image moments and their applications

Hong Lin Zhai*, Bao Qiong Li, Jing Chen, Xue Wang, Min Li Xu, Jin Jin Liu, Shao Hua Lu

College of Chemistry & Chemical Engineering, Lanzhou University, Lanzhou, 730000, P.R. China

Abstract

The extraction of chemical information in samples is essential to analytical modeling. In this contribution, the applications of several image moments on the analyses of chemical signals are introduced, including the quantitative analysis of multiple target components in mixture and the qualitative analysis of samples based on the chemical spectra obtained from HPLC coupled with photodiode array detector, LC-MS, Fluorescence, Terahertz, NMR or NIR analytical instruments. As the extension, chemical image moment approach has also been used in the prediction of protein phosphorylation sites as well as quantitative structure-activity relationship (QSAR) researches. The obtained satisfactory results indicate that the proposed approach is a convenient way to effectively extract target information and could reduce the difficulty of analytical experiments and improve the analytical speed, accuracy and reliability. Our study presents the specific charm of chemical image moments and provides novel insight into analytical chemistry.

Keywords: Chemical image; Moment; Chemometrics; Analytical chemistry; Data mining

* Correspondence to: Tel.: +86 931 8912596; fax: +86 931 8912582; E-mail address: zhahl@163.com (H.L. Zhai).

Download English Version:

<https://daneshyari.com/en/article/7687622>

Download Persian Version:

<https://daneshyari.com/article/7687622>

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