

FEATURE EXTRACTION METHODS FOR ELECTRONIC NOSE RESPONSES

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References:

1. Vitenberg A.G., Ioffe B.V. Gazovaya ekstraktsiya v khromatograficheskom analize: Parofaznyy analiz i rodstvennye metody. L.: Khimiya, 1982, 56–64. (in Russ.).
2. Arsen'yeva L.Yu., Kalinichenko A.O., Ivanov S.V., Kuchmenko T.A.: Pat. 111253 Ukrayina, Opubl. 11.04.2016. (in Ukr.).
3. Esbensen Kim H. Multivariate Data Analysis – in practice. An Introduction to Multivariate Data Analysis and Experimental Design, 5th Edition. Aalborg University, Esbjerg. Oslo: Camo Process AS, 2004, 75–78.
4. Zhiri roslinni ta oliyi. Metod viznachennya peroksidnogo chisla: DSTU 4570:2006. Chinniy vid 2008.01.01. K.: Derzhspozhivstandart Ukraini, 2007, 6. (in Ukr.).
5. Jia Yan, Xiuzhen Guo, Shukai Duan, Pengfei Jia, Lidan Wang, Chao Peng, Songlin Zhang. Electronic Nose Feature Extraction Methods: A Review. *Sensors*. 2015, 15 (11), 27804–27831.
6. Carmel L., Levy S., Lancet D., Harel D. A feature extraction method for chemical sensors in electronic noses. *Sensors and Actuators B*. 2003, 93, 67–76.
7. Yaqi Jing, Qinghao Meng, Peifeng Qi, Ming Zeng, Wei Li, Shugen Ma. Electronic nose with a new feature reduction method and a multi-linear classifier for Chinese liquor classification. Review of scientific instruments. 2014, 85, 055004-1–055004-10.
8. Eklov T., Mirtensson P., Lundstrom I. Enhanced selectivity of MOSFET gas sensors by systematical analysis of transient parameters. *Analytica Chimica Acta*. 1997, 353, 291–300.
9. Brudzewski K., Ulaczyk J. An effective method for analysis of dynamic electronic nose responses. *Sensors and Actuators B*. 2009, 140, 43–50.
10. Botre B.A., Gharpure D.C., Shaligram A.D. Embedded electronic nose and supporting software tool for its parameter optimization. *Sensors and Actuators B*. 2010, 146, 453–459.
11. Eugenio Martinelli, Christian Falconi, Arnaldo D'Amico, Corrado Di Natale. Feature Extraction of chemical sensors in phase space. *Sensors and Actuators B*. 2003, 95, 132–139.
12. Wei Z., Wang J., Zhang W. Detecting internal quality of peanuts during storage using electronic nose responses combined with physicochemical methods. *Food Chemistry*. 2015, 177, 89–96.
13. Prochaska K., Walczak M., Staszak K. Estimation of trioctylphosphine oxide (TOPO) diffusion coefficients by dynamic adsorption measurements in model extraction systems. *Journal of Colloid and Interface Science*. 2002, 248, 143–148.
14. Harald R. Stationary phases in gas chromatography. *Journal of chromatography library*. 1991, 48, 93.
15. Bingemann D., Ernsting N.P. Femtosecond solvation dynamics determining the band shape of stimulated emission from a polar styryl dye. *The Journal of Chemical Physics*. 1995, 102 (7), 2691–2700.
16. Press W., Teukolsky S., Vetterling W., Flannery B. Numerical recipes. The Art of Scientific Computing. Cambridge University Press, Third Edition, 2007, 778.
17. Rodionova O.E. Khemometricheskii podkhod k issledovaniyu bol'shikh massivov khimicheskikh dannykh. Ros. khim. zh. (Zh. Ros. khim. ob-va im. D.I. Mendeleeva). 2006, 2, 128–144. (in Russ.).