Silver porphyrin molecular film alcohol gas sensor

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A new 5,10,15,20-tetrakis(4-butyloxy)phenyl porphyrinatosilver(II) [Ag-TOBPP] compound has been successfully synthesized and characterized. The structure of the synthesized compounds was confirmed by Infrared Spectroscopy (IR), Mass Spectroscopy (MS), Fluorescence and UV-Vis absorption spectra. In this work, [Ag-TOBPP] was modified for detecting specific alcoholic volatile organic compounds (VOCs) by dissolving the complex in dichloromethane and coated onto clean glass slides at ambient conditions. Methanol (MeOH), ethanol (EtOH) and isopropanol (PrOH) vapors were selected as samples which were detected by Electronic nose (E-nose). Principal component analysis (PCA) was used as a pattern recognition method to analyze the data set produced from an UV-Vis spectrophotometer. The result shows that [Ag-TOBPP] organic thin film can perform efficiently as a selective alcohol sensor.

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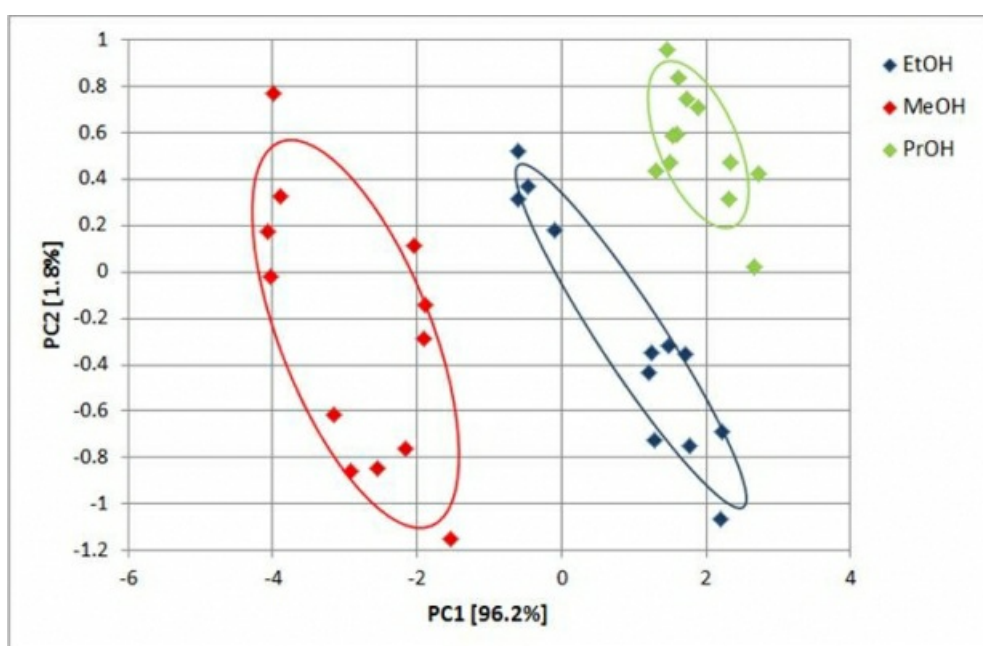
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