

3rd International Conference on

PAST AND PRESENT RESEARCH SYSTEMS OF GREEN CHEMISTRY

September 19-21, 2016 Las Vegas, USA

Instrumental evaluation of Chinese rice wine sensory attributes using near infrared spectroscopy combined with multivariate calibration**Qin Ouyang, Quansheng Chen, Zhiming Guo, Hao Lin, Huanhuan Li and Jiewen Zhao**
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Chinese rice wine sensory attributes including color, aroma, taste and style play a major role in product acceptability by directly influencing the success of a product in the marketplace. The estimation of the sensory attributes is generally done by human sensory analysis. However, the use of human for sensory evaluation entails several drawbacks, such as fatigue, stress and inconsistency etc. This study aimed to assess the feasibility of using Near Infrared (NIR) spectroscopy technique as an instrumental evaluation technique for predicting the sensory attributes (i.e., color, aroma, taste and style) in Chinese rice wine. Synergy interval partial least squares (si-PLS) was used to select the optimal spectral intervals and construct models between the NIR spectra and the reference scores of each sensory attribute, respectively. The performance of model was evaluated by the correlation coefficient (R_p) and the root mean square error (RMSEP) in the prediction set. The optimal performance by the si-PLS model for color was $R_p=0.8735$, RMSEP=0.274; the aroma was $R_p=0.8316$, RMSEP=0.893; the taste was $R_p=0.8791$, RMSEP=1.22; and the style was $R_p=0.7784$, RMSEP=0.557. This work demonstrated that the instrumental test using NIR spectroscopy technique has a high potential in predicting the sensory attributes in Chinese rice wine; it can overcome the drawbacks of human sensory analysis and achieve the objective measurements in a short time in a consistent and cost-effective manner.

Biography

Qin Ouyang has completed her PhD from Jiangsu University and currently working at Jiangsu University. She has published more than 20 papers in reputed journals.

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