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## Wine authentication using spectroscopic techniques in conjunction with chemometry

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Now-a-days food and beverages authentication using rapid and non-expensive analytical tools represents an important challenge. From all investigated matrices, wine represents one of the commodities that benefit from an enhanced attention. Thus, for wine discrimination during the last years, different techniques in conjunction with chemometry was successfully proposed and applied. Studies involving vibrational spectroscopies (NIR/IR, Raman/SERS), corroborated with statistical treatment were reported to be utilized efficiently for wine classification. Besides these techniques, other analytical methods which proved their efficiency in wine classification are given by nuclear magnetic resonance profiling, <sup>1</sup>H NMR and fluorescence spectroscopies through which outstanding wine classifications were previously obtained. In this light, the present work presents a comparative study concerning the potential of Raman, <sup>1</sup>H NMR and fluorescence spectroscopies in conjunction with chemometry, for wine classification with respect to variety, geographical origin and vintage. For all classification types discrimination percentage of better than 90% was obtained in both, initial and cross-validation step. Apart from this, the potential and limitations of each of these techniques will be discussed.

### Biography

Dana Alina Magdas has completed her PhD at Babes-Bolyai University, Cluj-Napoca. She is Head of Mass Spectrometry, Chromatography and Applied Physics from National Institute for R&D of Isotopic and Molecular Technologies, Cluj-Napoca, Romania. She has published more than 60 papers in reputed journals and coordinates research projects and contracts with industry, in the field of food and beverages authenticity and traceability.

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