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### **Monitoring a dynamic system with a low pressure liquid chromatography system: application to a vinification process**

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Monitoring dynamic systems requires a laborious sample pre-treatment due to its spatial and temporal variability and particular heterogeneity. The technological advancement has been of great support to implement selective and sensitive detection systems. However, the corresponding costs are usually too expensive for routine laboratories.

Flow analysis has started as an automation tool for wet chemical assays. Flow-based systems are well known by their efficiency in sample manipulation, therefore can lead to a significant progress in terms of reliability and robustness. One attributed disadvantage is their nonseparative nature; nevertheless, they can be easily coupled to other units responsible for the separation process. Combining the advantages of flow-based systems with separation techniques, it is possible to assemble more efficient tools. Therefore, its scope was further expanded to study chemical and biochemical processes. As a result of its versatility and possibility for real-time monitoring, it has also become a powerful tool to study dynamic systems.

The present paper describes a low pressure liquid chromatography (LPLC) flow system, by coupling of a flow injection system with a chromatographic column. This system was designed to monitor the vinification process, by the quantification of the sugars and ethanol content. A micro-guard cartridge, aminex type cation  $H^+$ , was used to separate the target analytes for subsequent quantification by molecular absorption spectrometry. It was possible to achieve a linear range up to 12 g/L of sugars and up to 2% (v/v) of ethanol concentrations. The proposed system was successfully applied to monitoring a vinification process.

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