**Organized Session 3**

**CIGR-WG5 (Image Analysis for Agricultural Processes and Products)**

**VIII International Workshop on Computer Image Analysis and Spectroscopy in Agriculture**

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Concept of Organized Session

This event is open to those interested in using non-destructive optical techniques applied to agricultural processes and products. Recent advances in optical and spectral technologies open new lines of research that cause a constant need to develop new algorithms, methods and systems, which must be able to deal with the enormous amount of information they provide. Research on these new technologies is focused on acquiring knowledge and data to make our farms more competitive and sustainable through innovative developments that can be used by farmers and industry.

The workshop is aimed to gather knowledge on standard and non-standard techniques and technologies of artificial vision, image processing and spectroscopy oriented to the field and post-harvest agriculture, emphasizing trends in acquisition and data analysis technologies. Topics include applications related to crop monitoring, precision agriculture, remote sensing, robotics, fruit detection, plant phenotyping, weed detection, nutritional diagnostics, or rapid pre- and post-harvest quality inspection. In addition, acquisition technologies are included, such as spectroscopy and imaging for in-line/on-line/at-line applications, hyperspectral and multispectral imaging, thermal, fluorescence and microscopic imaging, and magnetic resonance imaging. Finally, the focus is also on analyzing the information generated through data mining, segmentation techniques, feature selection, real-time image processing, machine learning, deep learning or chemometrics.

**Keywords:** precision agriculture, remote sensing and robotics, crop monitoring and detection, automated plant phenotyping, weed detection, pre- and post-harvest quality inspection