Turin, June 16-17, 2017

Preconference Workshop:

Enabling Technologies in Food Processing and Innovative Food Analysis

The use of enabling technologies in crop processing is a means of advancing the sensorial properties of food, nutritional value and productivity. Our overarching goal is the cost-effective production of high-value products and ingredients, coupled with waste processing and the recovery of co-products from biomass. Ultrasound, hydrodynamic cavitation, microwaves, supercritical CO_2 and ball milling technologies can all play pivotal roles in reaching this goal.

The producers of several foods have progressively moved from traditional and handed-down views of nutritional properties to rigorous studies aimed at identifying the molecular mechanisms behind bio-activity and preventive roles. It should also be mentioned that most bioactive components (phytochemicals, antioxidants, micro-nutrients, odorants and tastants) can be modified by physico-chemical treatment, which may generate either positive or negative effects on properties, as compared to the original crop. Thermal treatment typically leads to a loss of fresh flavour notes and the degradation of thermo-sensitive components.

Recent advances in laboratory and bench-top scale systems have highlighted the significant advantages that cascade processes can offer, with enabling technologies furnishing reproducible results for effective process scale-up.

This attractive scenario of innovation makes the comprehensive chemical characterization of products mandatory in delineating any compositional changes against benchmark and traditional products, as well as in accurately defining nutritional profiles, bio-activity and hedonic value. This workshop is an opportunity to show how "omics" investigations can support the assessment of quality and safety in new products. High-throughput analytical platforms will be presented together with fully integrated and automated procedures as concrete opportunities for product valorization.

A group of eminent scientists from both academia and industry will discuss state-of-the-art procedures and future perspectives on how advanced processing can lead to better food of higher added-value.