

7th International Conference on

Food Technology and Nutrition

May 25-26, 2026 | Rome, Italy

Volume: 11

Digital Food Systems and Precision Nutrition: Integrating Omics Technologies into Modern Food Science

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The integration of omics technologies, digital health, and food science is transforming the future of personalized nutrition and sustainable food production. This presentation explores advances in metabolomics, foodomics, nutrigenomics, and systems biology for understanding the relationship between diet, metabolism, and health. Emerging analytical technologies enable more accurate assessment of food quality, nutritional composition, and individual dietary responses.

The session discusses artificial intelligence, big data analytics, blockchain-based food traceability, and digital food systems that improve food safety, transparency, and consumer confidence. Future developments include precision nutrition platforms, smart food manufacturing, and sustainable food innovation designed to support global health and food security.

Biography

Francesco Capozzi is Professor of Food Science and Human Nutrition at the University of Bologna, Italy. His research focuses on foodomics, metabolomics, food quality, precision nutrition, and sustainable food systems. He is internationally recognized for advancing the application of omics technologies in food science and human nutrition.