

10th International Food Operations and Processing Simulation Workshop (FOODOPS 2024)

Held at the 21st International Multidisciplinary Modeling and
Simulation Multiconference (I3M 2024)

Tenerife, Spain
18 – 20 September 2024

Editors:

**Agostino G. Bruzzone
Francesco Longo**

**Vittorio Solina
Giuseppe Vignali**

ISBN: 979-8-3313-0715-8

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 4.0 International License.
License details: <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination, and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2024)

For permission requests, please contact CAL-TEK S.r.l.
at the address below.

CAL-TEK S.r.l.
Via Umberto Nobile 80
87036 Rende (CS)
Italy

Phone: +39 333 7042 612
Fax: +39 0984 937849

info@cal-tek.eu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Index

Packaging and technologies for food products: a state-of-the art survey Eleonora Bottani, Martina Nicoletti and Giuseppe Vignali	1
Resilience in the Food Industry: Interviews-based evidences Letizia Tebaldi, Andrea Volpi and Giuseppe Vignali	8
Radio Frequency Identification in the Food Industry: Preliminary results from a bibliometric analysis on case studies Letizia Tebaldi, Andrea Volpi, Claudio Suppini, Natalya Lysova, Roberto Montanari and Eleonora Bottani	16
Exploring Novel Sustainability Metrics for the Agri-Food Supply Chain Ayla Amamou, Chourouk Ben Taouess, Lilia Sidhom and Abdelkader Mami	25
Role of Life Cycle Assessment (LCA) in Promoting Olive Oil Sustainability: A State-of-the-Art Review Ilyes Dammak, Ayla Amamou, Lilia Sidhom and Abdelkader Mami	33
A Conceptual Framework for Predictive Digital Dairy Twins: Integrating Explainable AI and Hybrid Modeling Dana Jox, Darius Hummel, Jörg Hinrichs and Christian Krupitzer	43
Implementation of Automatic Identification and Data Capturing technologies in the Agri-Food Supply Chains: a review and framework Eleonora Bottani, Roberta Stefanini and Giuseppe Vignali	53
Life Cycle Assessment of pelletized compost from agricultural waste valorization processes Arianna Paini, Luca Preite and Giuseppe Vignali	62
Defining a Cognitive Digital Twin architecture in food supply chains: the early outcomes of DSS4LCO initiative Gabriele Pasetti Monizza, Maryam Mozaffari, Simone Fabbrizzi, Johann Gamper, Oswald Lanz and Dominik Matt	68
Artificial intelligence-based soil moisture estimation using a combination of in-situ measurements and open-source data Luca Preite, Arianna Paini and Giuseppe Vignali	81
Finding the Perfect Match: Smallholder Selection in Short Food Supply Chains Manuella Germanos, Oussama Ben-Ammar and Greg Zacharewicz	89
Generative AI for Business Model Generation (GAI4BM): from Textual Description to Business Process Model Nicolas Daclin, Sihem Mallek-Daclin and Gregory Zacharewicz	96
Mitigating Design Errors in Standardized Food Processing Plants: Insights from CFD Simulation of a Tomato Concentration Process Federico Solari, Natalya Lysova, Alex Dalla Fiora, Andrea Volpi, Antonio Rizzi and Roberto Montanari	104
Assessing Agri-food supply chain multi-capital sustainability using Simple Multi-Attribute Rating Technique: the policy maker case study Safa Chabouh, Lilia Sidhom, Ala Zammiti and Abdelkader Mami	111

CoAP-based Digital Twin Modelling of Heterogeneous IoT Scenarios 120
Luca Davoli, Hafiz Humza Mahmood Ramzan, Laura Belli and Gianluigi Ferrari

Optimization based on Innovative Models for Online Food Delivery and Supply Chain Management 125
Agostino G. Bruzzone, Giovanni Maria Ferraris, and Fabio Ferrero