



2nd Conference on Green Chemistry and Sustainable Coatings

greenchemco

Pisa, Italy, 28th-30th June 2023

Abstract Title: Whey protein-based films and coatings for food packaging applications

Author: Markus Schmid¹

*Affiliation: Albstadt-Sigmaringen University, Sustainable Packaging Institute SPI, Anton-Guenther-Straße 51, 72488 Sigmaringen, Germany,
Telephone: +49 (0) 7571 732 8402, schmid@hs-albsig.de*

Keywords: Whey protein; physical, chemical and biochemical modification; coatings; barrier properties, food packaging

Introduction

The 2nd Conference on Green Chemistry and Sustainable Coatings will feature this keynote presentation on whey protein-based films and coatings for food packaging applications. The growing focus on environmental sustainability has led to a renewed interest in the development of bio-based materials as a sustainable alternative to traditional plastics. Bio-based materials such as coatings are made from renewable raw materials such as proteins, polysaccharides or lipids, which can be derived from crops or waste streams from the agro-food industry.

The science behind whey protein-based films and coatings

In this keynote presentation, the use of whey proteins as raw materials for the production of films and coatings for food packaging applications will be presented. Whey protein-based films and coatings are more biodegradable than other polymeric materials, creating new market opportunities for agricultural products, by-products and waste streams within the food process chain. These films and coatings also have excellent barrier properties for oxygen, nitrogen and carbon dioxide, making them suitable for packaging applications.

The current state of the art in film-forming formulations for tailored barrier, mechanical, surface and end-of-life properties will be discussed. It will also cover the regulatory background to packaging use, end-of-life and prospects, with a focus on the environmental impact of such packaging materials. In addition, an overview of the effects of different mechanical, chemical and biochemical treatments on whey protein-based films and coatings will be given, with a focus on food packaging applications and strategies to overcome the limitations.

In addition, the latest findings from ongoing projects on this topic and future scenarios will be presented to round off this keynote.



Horizon 2020
European Union Funding
for Research & Innovation



Bio-based Industries
Consortium



2nd Conference on Green Chemistry and Sustainable Coatings

greenchemco

Pisa, Italy, 28th-30th June 2023

Key takeaways

The keynote will review the latest research on green chemistry and sustainable coatings in relation to the use of whey proteins as raw materials for the production of films and coatings for food packaging applications. Understanding these modifications is an important step towards the industrial implementation of protein-based films and coatings, and this keynote will provide a comprehensive overview of the current state of the field and future directions for research and development.

Biography of the speaker:

Prof. Dr. Markus Schmid is a graduate in business administration. He holds a diploma degree in Food Technology and a master degree in Food Processing from the University of Applied Sciences Fulda as well as a Doctor's degree from the Technical University of Munich, Germany. From 2008-2018 he was working as project manager at the Fraunhofer Institute for Process Engineering and Packaging IVV in Freising, Germany. In 2018, he was appointed professor at the Albstadt-Sigmaringen University. His major research and teaching areas are in the field of sustainable packaging concepts for the Life Sciences Industries. He is the director of the Sustainable Packaging Institute SPI at Albstadt-Sigmaringen University.

