



Defence announcement

Public Defence on 15 November 2023

Paperboard packaging: The role of fillers in biodegradable barriers

Title of the doctoral thesis Pilot-scale filler-reinforced biodegradable coatings for paperboard packaging

Content of the doctoral thesis Conventional fossil-based barriers on paperboard packaging materials can be replaced with bioplastics. This thesis focused on investigating the effects of mineral fillers on the processability and properties of biobarriers. The use of talc, kaolin and calcium carbonate enhanced processability by reducing neck-in and improving adhesion in pilot-scale extrusion coating process. Furthermore, the addition of fillers improved the barrier properties of the packaging material. The observed drawback caused by the fillers was the formation of pinholes in extrusion coating process with high filler content and low coating thickness. This thesis contributes to the development of sustainable packaging materials by representing the benefits and future development gaps of mineral filler addition in bioplastic-based extrusion coatings in paperboard packaging materials.

Field of the doctoral thesis Bioproduct Technology

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Remote defence <https://aalto.zoom.us/j/64535181660>

Place of public defence Aalto University School of Chemical Engineering, Aalto Bioproduct Centre, Lecture hall L1, Vuorimiehentie 1, Espoo

Opponent(s) Technical Service Specialist, Janet Preston, Ph.D., Imerys Minerals, UK

Custos Professor Orlando Rojas, Aalto University School of Chemical Engineering

Link to electronic thesis https://aaltodoc.aalto.fi/doc_public/eonly/riiputus/

Keywords Biodegradability, barrier, paperboard, packaging, extrusion