Sustainable production of Cellulose-based products and additives to be used in SMEs and rural areas
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Lignocellulosic materials in packaging and building materials towards Green Deal

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Paper packaging with chitosan and nanocellulose

Objective of the study:

Improve paper properties especially in wet strength by natural additives.

The final goal of the project:

To produce improved quality egg box from waste paper without any fosil additives

Our focus: stronger fibres, chitosan, nanocellulose

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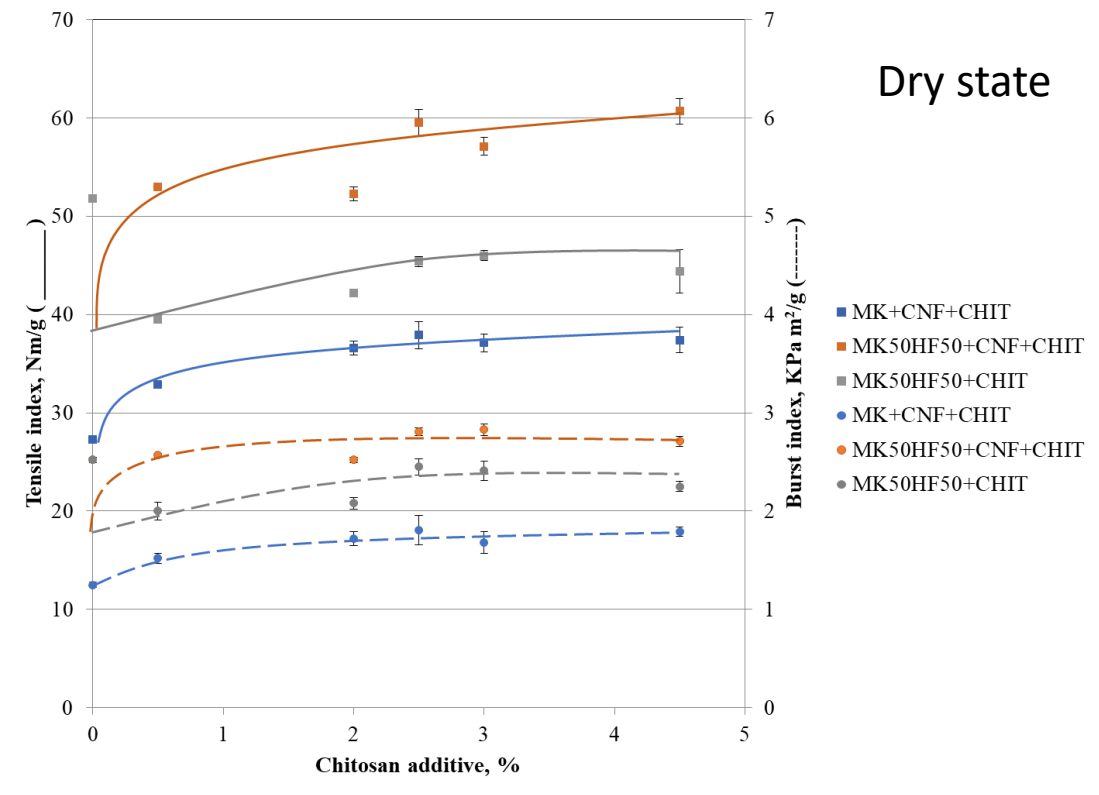
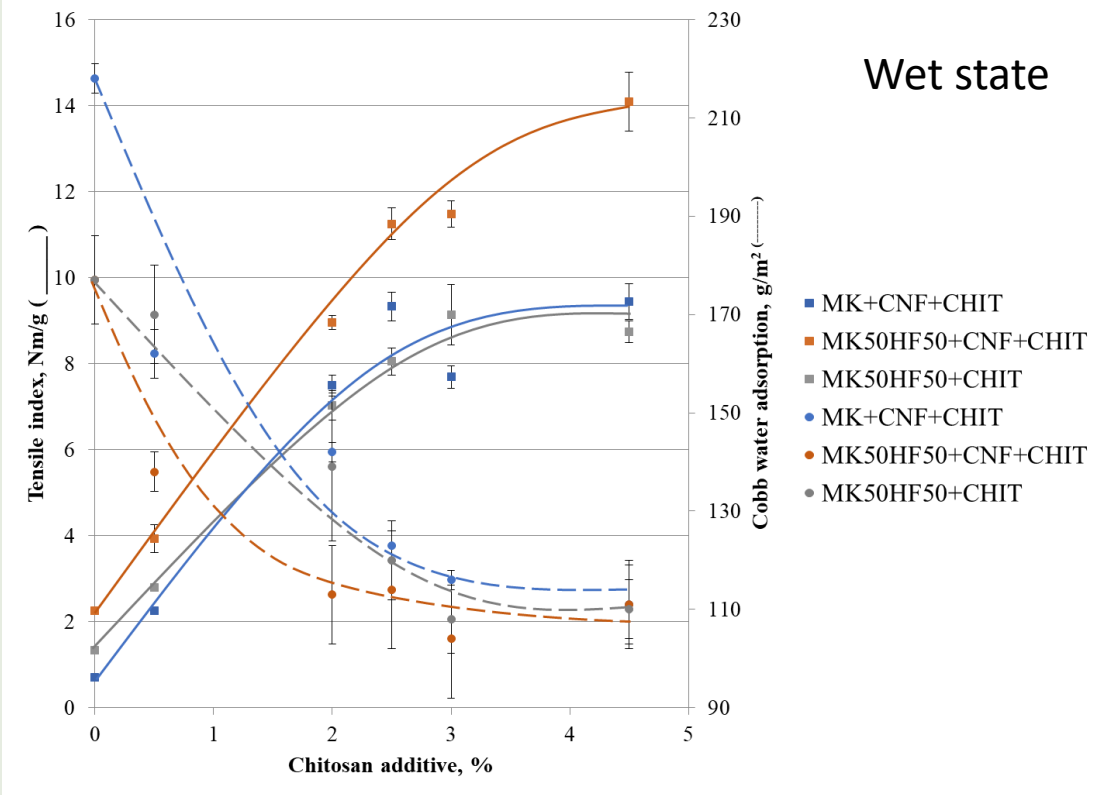
Paper packaging with chitosan and nanocellulose





MK – waste paper
HF – hemp fibers
CNF – cellulose nanofibers

Acknowledgement

This research was funded by the European Regional Development Fund Contract No.1.1.1.1/20/A/113 “Development of ecological and biodegradable materials from natural fibres with functional biopolymer additives”.

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Paper packaging with chitosan and nanocellulose

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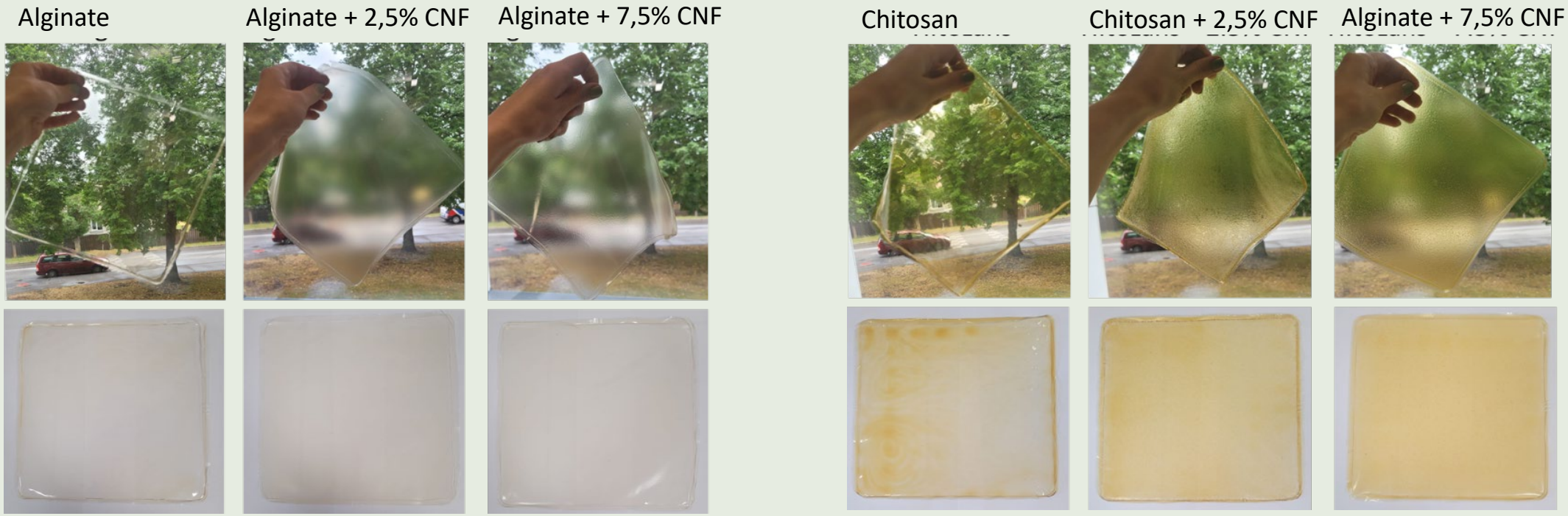
Food packaging films from chitosan and alginate



Objective of the study: *Produce eatable food packaging films – soluble and insoluble in the water*

The final goal of the project: *To produce fully natural based eatable food packaging films with thermal plasticity properties*

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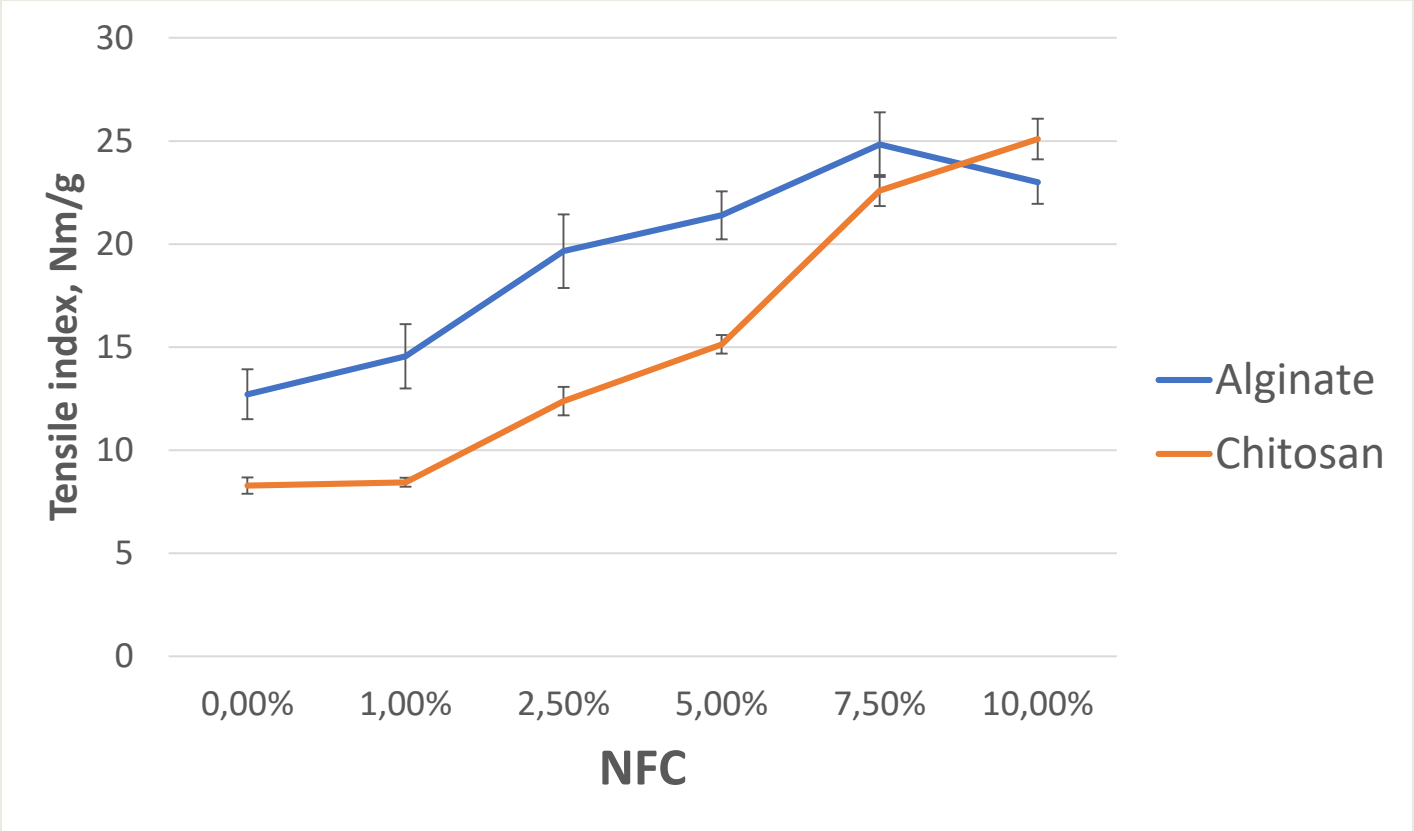
Food packaging films from chitosan and alginate



- Almost no air permeability
- No grease permeability
- Fully biodegradable (3 and 4 weeks)
- Relatively small water vapor permeability

Couldn’t get thermal plastic properties jet!!!
Any suggestions?

Packaging from mycocomposites

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Objective of the study:
to develop technology and prototypes of of mycelium-based fibre material

Acknowledgement
This research was funded by the European Regional Development Fund Contract No.1.1.1.1/20/A/113 “Development of ecological and biodegradable materials from natural fibres with functional biopolymer additives”.

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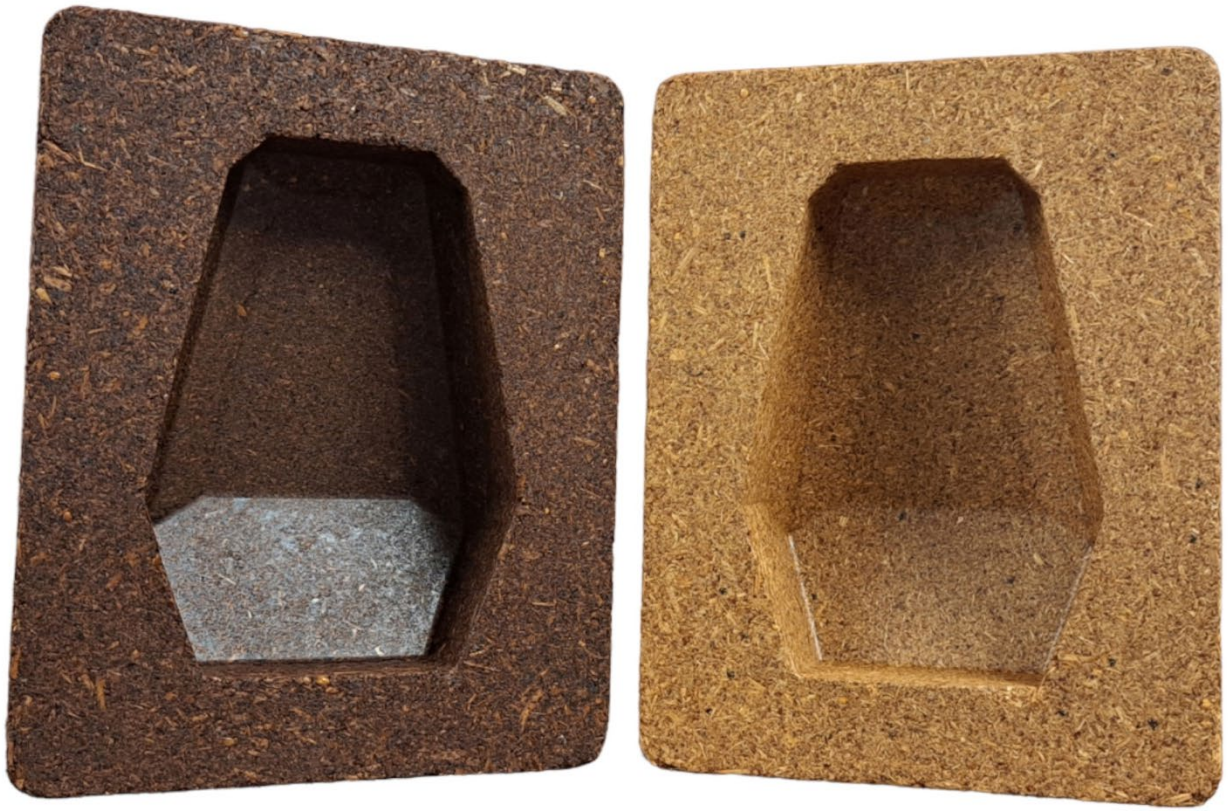
Secondary fiber packaging from waste

Suberinic acid as glue

PVA glue



Chito-varnish

Objective of the study:
Produce secondary packaging for glass container of medicine - bioactive compounds extracted from mushrooms – from fibre waste after growing mushrooms

The final goal of the project:
To produce fully natural and biodegradable secondary packaging for glass container from fibre waste after growing mushrooms

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Fill in heat insolation materials from agricultural waste

Objective of the study:

to develop new potential eco-friendly thermal insulation materials for building insulation from local crop residues such as wheat straw, buckwheat husks, corn and reed stems.

Acknowledgement:

LATVIAN COUNCIL OF SCIENCE, project No. lzp-2021/1-0599 “Investigation of eco-friendly thermal insulation materials from sustainable and renewable industrial crops residuals”

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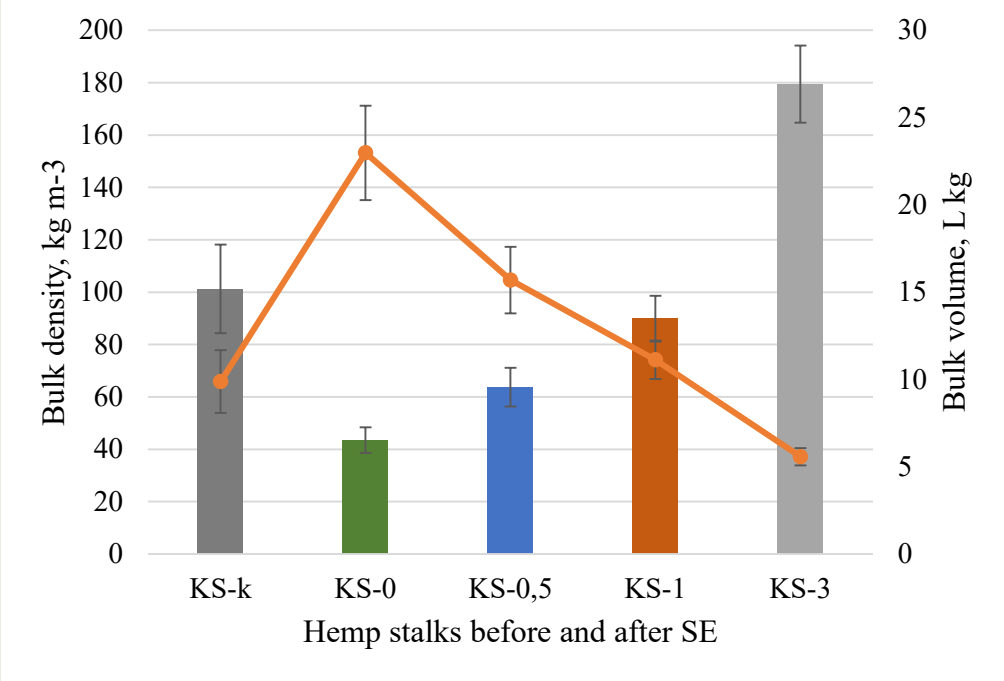
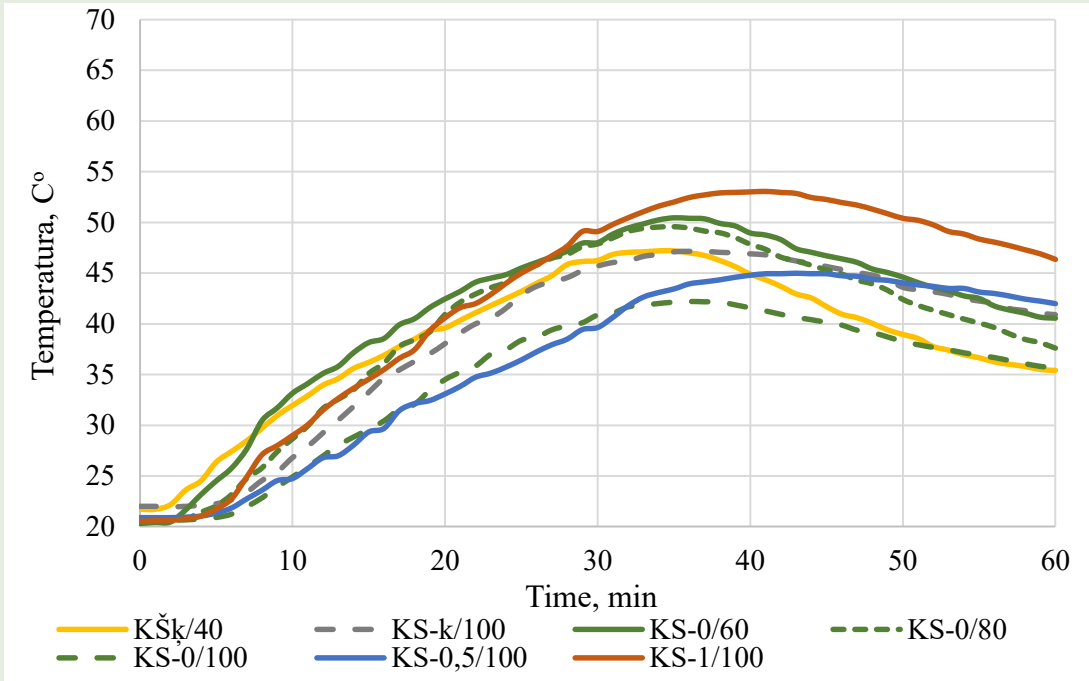
Fill in heat insolation materials from hemp waste



Bulk density and volume



Thermal inertia

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Thank you for your attention!