

POTENTIAL OF USING NATURAL FIBERS AS AN ADDITIVE FOR PLA-BASED FILAMENTS

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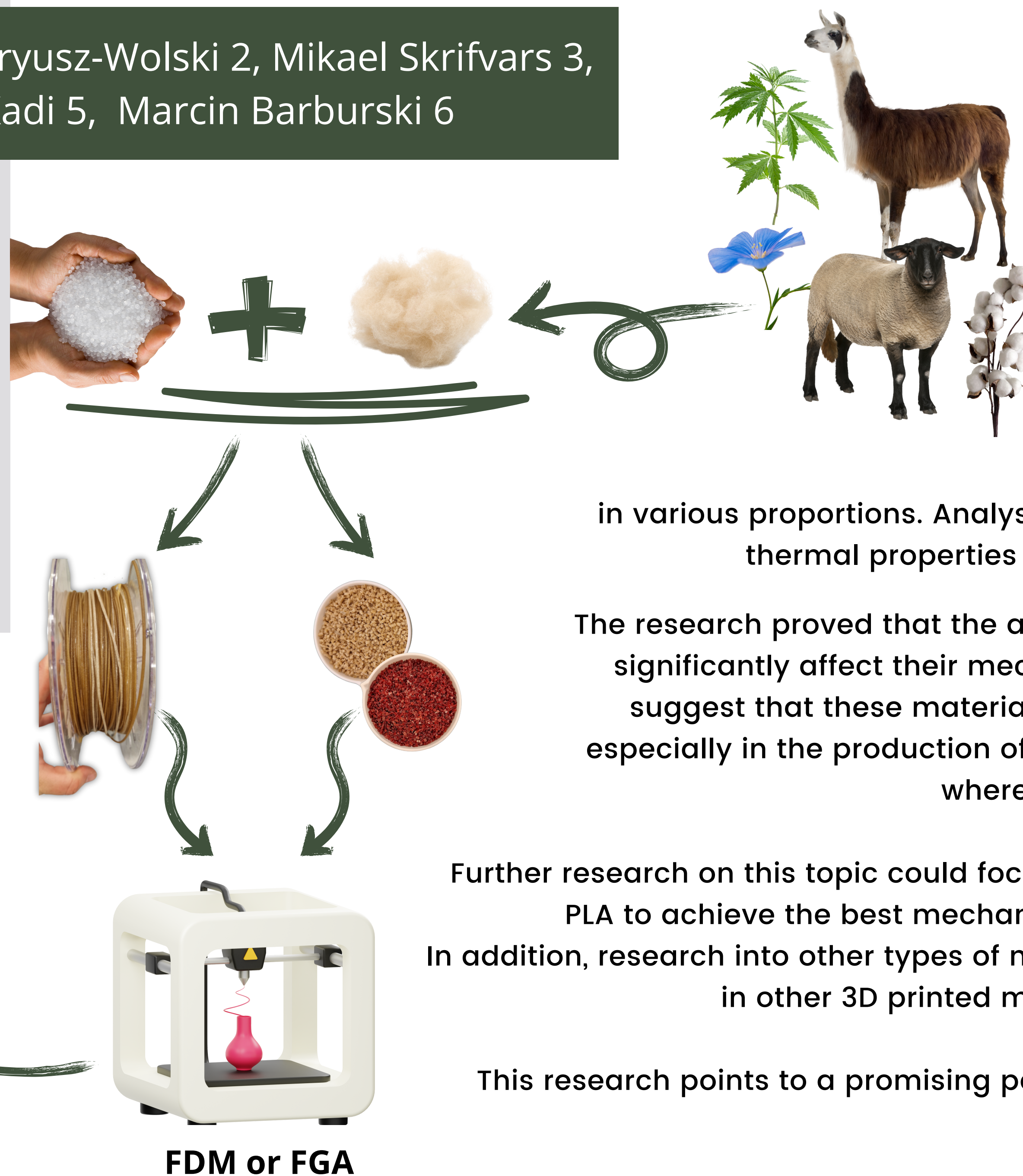
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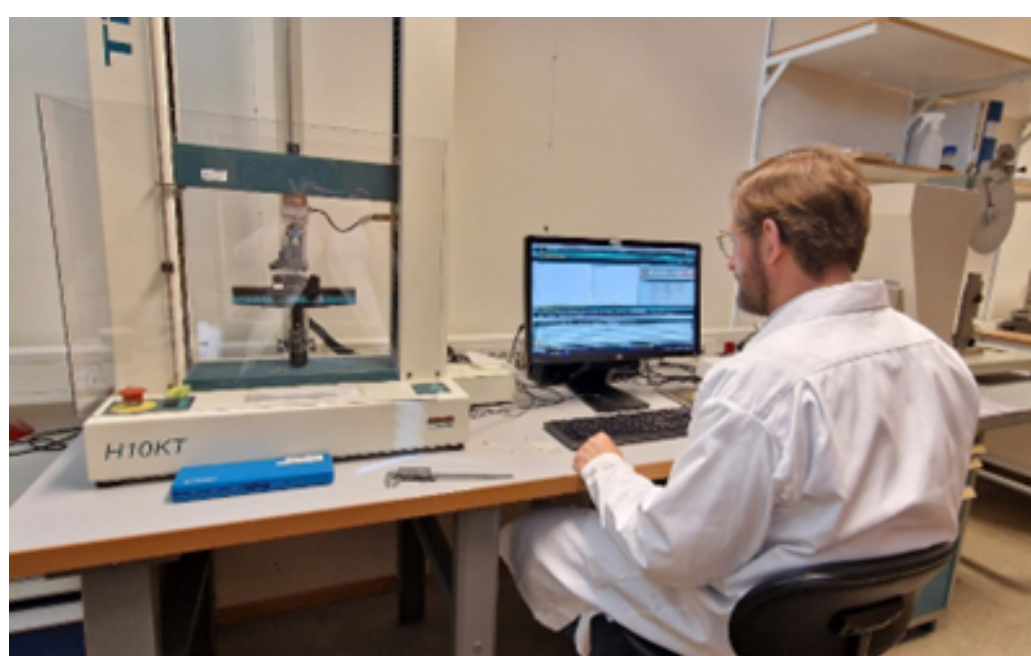
3D printing is gaining popularity as a technology for creating durable and functional objects. However, there are challenges with the materials used in 3D printing, including their environmental performance and durability. Natural fibers are a potential solution that can improve the mechanical properties and offset the environmental impact of PLA-based filaments (NATUREWORKS PLA 6201D)

This paper describes a study on the addition of natural fibers, such as hemp fiber, flax, or wool, to PLA-based filaments in various proportions. Analyses of microstructure, mechanical properties, thermal properties and environmental effects were carried out.

The research proved that the addition of natural fibers to PLA filaments can significantly affect their mechanical or thermal properties. These results suggest that these materials could find wide application in 3D printing, especially in the production of spare parts, packaging and other products where durability and sustainability are important.

Further research on this topic could focus on optimizing the ratio of natural fibers to PLA to achieve the best mechanical, thermal and environmental properties. In addition, research into other types of natural fibers and their potential applications in other 3D printed materials may yield further valuable findings.

This research points to a promising path for the development of more sustainable and efficient 3D printing technologies.



FDM or FGA