**Effect of Printing Parameters on Dimensional Error, SurfaceRoughness and Porosity of FFF Printed Parts with Grid Structure** Buj-Corral et al. 2021

DISCUSIÓN

Buj-Corral et al. fabricaron piezas cubicas impresas mediante MEX usando filamentos de PLA, variando layer height, printing temperature, print speed, and flow rate, concluyendo que la altura de capa afecta en gran medida a la rugosidad superficial The lower the layer height, the lower roughness is, de lo que se puede concluir que el PLA/Pinewood tiene un comportamiento en concordancia con PLA puro.

**3D printing of wood fibre biocomposites: From mechanical to actuation functionality**. Le Duigou 2016

Introducción. Interés aplicación: 4D Printing

There is still a lack of information on the relationship between the layer-by-layer printing process (FDM) and the actuation properties induced by natural-fibre composites.

DISCUSIÓN

Increasing filament width enhances the porosity. Increasing filament width enhances the porosity. The FDM of hygromorphic biocomposites enables a shift towards 4D printing since the material is able to evolve over time in response to an external stimulus.

**Hygromorphic Response Dynamics of 3D-PrintedWood-PLA Composite Bilayer Actuators.** Krapez-tomec et al. 2021.

INTRODUCCION. Justificación del hueco de conocimiento. Interés: Shape changing actuators

The addition of Wood fibers does not influence the differential swelling, although it does affect hygroscopicity. Research has shown that PLA and wood-PLA materials can be used for 3D-printed shape-changing actuators that change in alternating climate conditions. However, the repeatability, accuracy, and optimization of printing parameters and parameters in filament production are essential.

* No determinan parámetros, los coge de Ecker y Kain.
* Kain et al. hablan sobre infill orientation, no de infill density
* Ecker et al no mencionan variación de parámetros, solo usan 1 configuración.

**Sfruttare l’intelligenza naturale del legno per migliorare la ventilazione passiva degli edifici**. Bianconi et al. 2023

CONCLUSIÓN - DISCUSIÓN

Until now, only a few applications have utilized this unique property (ref). The natural hygroscopic intelligence of wood can inspire the creation of new technology that ensures improved indoor comfort in buildings through adaptive and passive solutions (ref). Applications such as desiccant wheels can significantly enhance indoor hygrometric comfort