Highlights:

* ~~Material usage is of great importance in 3D printing applications.~~
* Technical viability of recycled materials as substitutes for conventional virgin materials are still limited to particular applications such as prototyping activities
* ~~Printing conditions can help optimizing the tensile strength~~
* The infill density and the orientation are key factors for the tensile strength
* Recycled materials provide tensile strength close to that of the virgin ones
* An infill density of 40 %, there is a retention of 58.1 % of the tensile strength