ABSTRACT

The objective of this thesis is to design a foldable urban bicycle that combines ease of transport, ergonomics and durability. The bicycle should be lightweight, user-friendly and compact when folded.

For the implementation of the design, various types of foldable bicycles were studied, as well as folding mechanisms that permit a quick and safe transition from the fully developed to the compact form. Particular emphasis was placed on the selection of the frame materials to achieve a desirable strength-to-weight ratio. At the same time, solutions were also examined to improve stability and comfort during riding.

The bicycle was designed using the SolidWorks™ software, through which individual parts and subsystems were simulated and optimized. The ultimate goal was to design an innovative, functional, and aesthetically pleasing bicycle that conforms to the requirements of the average user.

Keywords: foldable bicycle, urban transport, ergonomics, lightweight, SolidWorks™ software.