VLC (Visible light communication) technology introduces a new way of data communication. As the name indicates, VLC uses the light (in the most optimized way, LEDs) to produce signals which contain all sorts of information like Wi-Fi. The project is solely based on designing and building a circuit. We will use a CAD tool to design and to carry out simulations that would characterize the design of the circuit we are going to work on. The basic system and functioning of the circuit is as follows.

There are different functions that we are going to achieve in the new design of LED based on our design specifications. The design will comprise of the DC/DC converter, power factor correctors, transformer and control methodology will be implemented for it. We are going to employ the bottom-up strategy, where we will try to build different parts and assemble them together. We have tried to build a buck converter and a valley-fill passive power factor corrector separately and succeeded to assemble them in one circuit. We believe that the bottom-up method will give us an advantage to find the errors easily. Furthermore, it enables to analyze the whole circuit more effectively. The main aim of the design is to come up with a VLC model that works efficiently and gives a very high performance at the same time.

Result and conclusion: The implementation of the current adjustment function to the circuit was carried out successfully, which will give the flexibility to the visual light communication system with less power consumption. For complete functioning of the model it is essential that both the encoder and decoder work simultaneously and correctly.