**Practical tips, design photos and personal creativity**

I chose this project because I am interested in nixie tubes. The nixie tubes have a special effect and distinguish themselves from other lamps. Nixie tubes can be used for a wide variety of projects. This project was meant to get acquainted with nixie tubes and gain more knowledge about it.

The original design from Elektor was built entirely through through-hole components. I have chosen to replace a number of components with SMD components. One part of the PCV takes care of the conversion from 5V to 150V. These components have all been adapted to the SMD variant. This saves space on the PCB and makes the PCB smaller. I also opted for SMD ICs. The only reason is that they are al lot smaller.

At first it seemed like a very easy project, but after a while I found out that working with a nixie tube was not self-evident. The IN-9 nixie tube is not very reliable. They are also only made in Russia, which means that shipping takes a lot of time. There is an IN-13 variant, but these are much more expensive and are even less quickly available. A good tip is to order the nixie tube well in advance in Russia and always take 1 extra as a spare. The nixie tube is made of glass and can break very easily during transport.

In the original design, there were 2 RGB LEDs built in that give light in the holder of the nixie tube. Because it was made of plexiglass, it gave a nice effect. Because our case has to be made with the 3D printer, there is no option to use a transparent material. Therefore I moved the RGB LEDs on the PCB. These will now illuminate the inside of the case, but by making a number of notches in the case, they will still give a nice effect in the black case.

Next time I will try to make a square PCB. That will be easier to make a case for it. Now it was a rectangle which made it less convenient.