SUMMARY

The trends of the modern instrument-making market are not only in the creation of measuring instruments, but also in the development of portable tools and fully autonomous devices that can not only analyse data directly at the place of its collection, but also provide users with the opportunity to see the obtained results without using additional equipment.

The whole process of developing an integrated UI was divided into several parts.
At the initial stage, the design of the future model of the display panel as well as the location of the panel in the device housing was considered, and a suitable display was selected for integrating. Among the options found, the SunFounder HDMI Touchscreen in combination with the LattePanda microcomputer was chosen. These devices fit in size and functionality.

The model of the display panel was build using Solid Edge (Siemens PLM Software).

When creating the model, in addition to the display panel itself, accessories and additional elements were developed, such as a protective frame to prevent foreign objects from getting inside the device, when the display is in the upper position, and the special holes for screws to prevent the panel from breaking out of the housing, when the maximum allowable angle of inclination of the display is exceeded.

At the final stage, the model layout was made on a 3D printer and tested.
Testing has shown that the location of the display was chosen very competently: there is a place for a comfortable position of the user's hands.

The user gets not just a device with an integrated user interface, but a completely autonomous device for measuring samples and analysing the data obtained directly on site without connecting external devices.

The development of UI for a spectrofluorometer is not just an improvement of the instrument or a marketing move, it is a solution to the problem of survival in the harsh conditions of competition.