technology profile

MIKROCONTROLLERS FOR PRECIS CONTROL OF EXPERIMENTAL ENVIRONMENT

Aim of developed technology

Maintaining stable experimental environment is the basis for successful experiments whether with cell lines, embryos of organisms or even with the formation of chemically modified surfaces. In the absence of stable conditions, there are malformations in the development of organisms, stopping cell proliferation or drying of modified surfaces.

The development of dedicated external incubators, environmental controllers and selective heating of microscope inserts allows to create specific conditions for specific research applications. Such solutions can be easily constructed using programmable microcontrollers, sensors, and PID control methods. These systems can work both autonomously or connected to computer and allows to capture the exact state of the environment during the experiment, making it easier to find errors in a failed experiment.

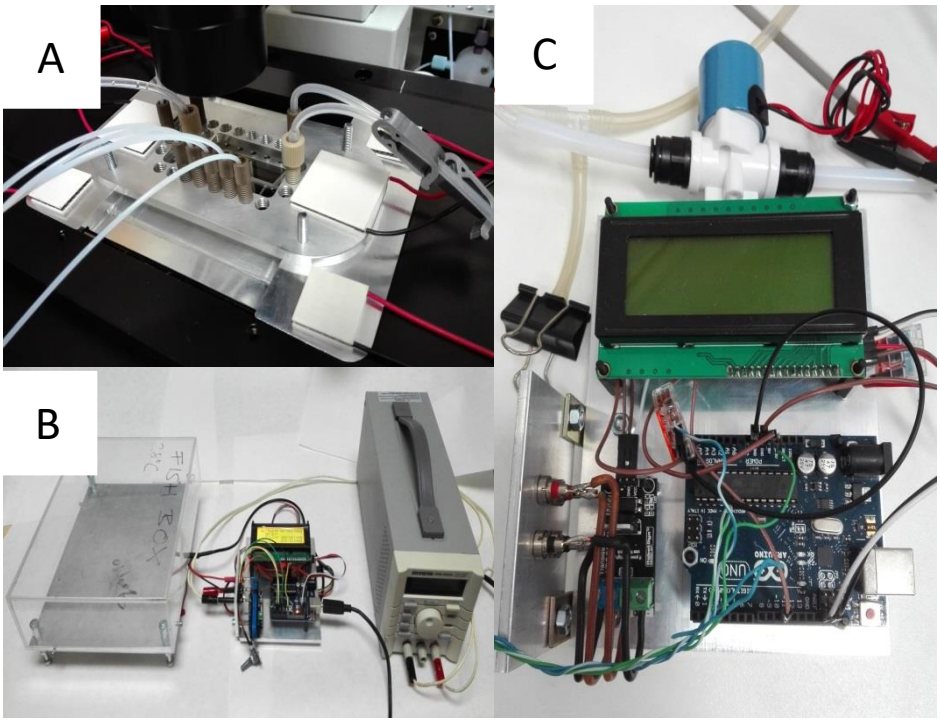

Figure 1: *use of microfluidic systems.*
A: Heated microscope table insert.
B: Heated portable incubator.
C: Microcontroller for controll and dosage of humid air.

Address of technology provider/inventor:
J. E. Purkyně University in Ústí nad Labem
Faculty od Science
České mládeže 8
400 96 Ústí nad Labem

Contact information:
Mgr. Jan Malý, Ph.D., jan.maly@ujep.cz
Mgr. Marcel Štofik, Ph.D., Marcel.stofik@ujep.cz
Mgr. Jiří Smejkal, jiri.smejkal@ujep.cz