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### 3D printed flow-through cuvette insert for UV-VIS spectrophotometric and fluorescence measurements.

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#### ABSTRACT

Rapid Prototyping technologies expand the availability of fabrication of plastic objects to non-skilled users that need sophisticated equipment for their research. In this communication, for the very first time, the universal design of photometric-fluorometric, UV-VIS compatible, 3D-printed flow-through cuvette with two optical paths (2 and 10 mm) is introduced. The cuvette insert was made with the use of the most economically viable Fused Material Deposition technology which enables truly one-step manufacturing and easy replicating of the device. A utility of the cuvette was presented in the example of the basic flow injection analysis experiments on the model photometric (bromothymol blue) and fluorometric (fluorescein) dyes and proven by investigation of solubility constant of calcium hydrophosphate dihydrate by determination of phosphate using fluorescence quenching of Molybdenum Blue-Rhodamine B complex formation and calcium reaction with calcein in basic environment.

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