

Pico/Nano/Micro Drop Dispensing Platform Using Unique Disposable Cartridges for Non-Contact and no Cross Contamination Dispensing in Life Sciences and Industry: A Review Article

Theo Guillerm*, Gabriel Leen

PolyPico Technologies Ltd., Ireland

PolyPico Technologies Ltd. gives off-the-rack and custom answers for meet accuracy drop apportioning needs (pico/nano/miniature liter), in view of their honor willing innovation: "Most Interesting Technology"[1] granted by the European Laboratory Robotics Interest Group (EPolyPico's remarkable expendable administering cartridges take into consideration the fast changeover of liquids in under a moment, evades cross pollution, and help to accomplish apportioning objectives in a small amount of the time and at a small amount of the expense of elective arrangements. The utilization of disposables when dealing with fluids is the favored system to evade cross-pollution in the Life Sciences and PolyPico's expendable administering cartridges are like dispensable pipette tips in such manner. In any case, volumes of fluid as low as 20pl, can be abstained from picolitre exactness. PolyPico frameworks are amazingly easy to understand and the vast majority is apportioning liquids inside 30minutes of unloading the framework.

Applications include:

- Life Sciences: dispensing of proteins, anti-bodies; DNA; pharmaceuticals; biological-reagents; micro-crystals; living cells; etc.
- Industry: dispensing of cyanoacrylate adhesives; nanomaterials; conductive inks; lubricants; radioactive materials and coatings.

For example: 2019, K. A. Babatunde et al. used the PicoSpotter to study swarming and chemotaxis in HL-60 neutrophil-like

cells. A further example is: 2017, Peter Docker et al. used the technology at the UK's XFEL to produce picoliter drops immobilized by acoustic levitation and probed by an X-ray beam for protein crystallography.

PolyPico microdispensers utilize acoustic energy to administer micro drops of fluid in a controlled, exact and on-request way. At the point when stacked into the administering head, the cartridge is grasped by acoustic actuators. Motivations from the acoustic actuators proliferate through the dividers of the administering cartridge into the liquid which the apportioning cartridge contains. The acoustic motivation is changed into movement of liquid at the spout of the apportioning cartridge. The resultant movement of liquid is with the end goal that a micro drop of liquid is launched out from the cartridge spout. Acoustic drives are created on request each time a micro dispense is required. In the PicoSpotter and PicoPRECISE frameworks, micro drops can be apportioned up to a pace of 10 kHz (10,000 micro drops every second), while the OEM framework can administer micro drops up to a pace of 40 kHz (40,000 micro drops every second). PolyPico Technologies Ltd. is a creative and energizing youthful organization situated in Ireland. Theo Guillerm, part of the Polypico group, is a youthful biotechnologies engineer intrigued by microfluidics and nanotechnologies, from France.