Meetings International
5th International Conference on
Microfluidics and Nanofluidics
Euro Microfluidics 2020
June 22-23, 2020 | Zurich, Switzerland

Abstract

Title: Pico/nano/micro drop dispensing platform using unique disposable cartridges for non-contact and no cross-contamination dispensing In Life Sciences and Industry

Theo Guillerm, Gabriel Leen

PolyPico Technologies Ltd., Unit 10, Airways Technology Park, Rathmacullig West, Ballygarvan, Co.Cork, T12 DY95, Ireland

Keywords: Drop dispensing, Microdispensing, Picoliter, Nanoliter, Microliter

I. Abstract

PolyPico Technologies Ltd. provides off-the-shelf and custom solutions to meet precision **drop dispensing** needs (**pico/nano/micro liter**), based on their award willing technology: "Most Interesting Technology"[1] awarded by the European Laboratory Robotics Interest Group (ELRIG) in 2014. PolyPico's unique **disposable dispensing cartridges** allow for the rapid changeover of fluids in less than a minute, avoids cross contamination, and help to achieve dispensing goals in a fraction of the time and at a fraction of the cost of alternative solutions. The use of disposables when handling liquids is the preferred methodology to avoid cross-contamination in the Life Sciences and PolyPico's disposable dispensing cartridges are similar to disposable pipette tips in this regard. However, volumes of liquid as low as 20pl, can be dispensed with picolitre precision. PolyPico systems are extremely user friendly and most people are dispensing fluids within 30minutes of unpacking the system.

Applications include:

• Life Sciences: dispensing of proteins, anti-bodies; DNA; pharmaceuticals; biological-reagents; micro-crystals; living cells; etc.

• Industry: dispensing of cyanoacrylate adhesives; nano-materials; conductive inks; lubricants; radioactive materials and coatings.

For example: 2019, K. A. Babatunde et al.[2] used the PicoSpotter to study swarming and chemotaxis in HL-60 neutrophil-like cells.

A further example is: 2017, Peter Docker et al.[3] 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.

II. Image:

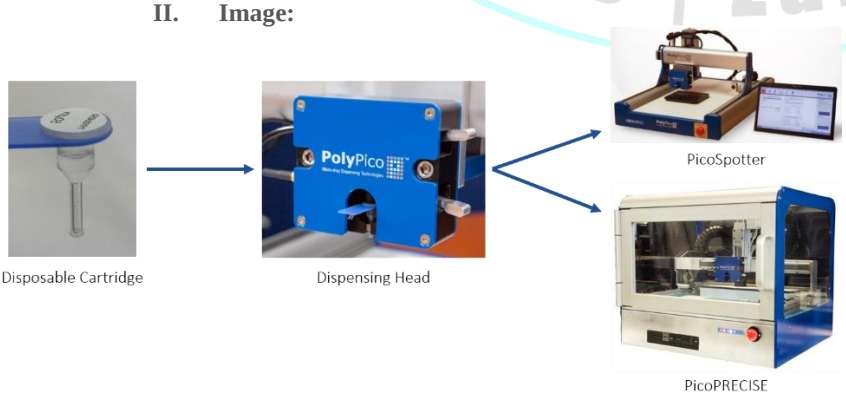


Figure 1: The unique disposable plastic cartridges are integrated in the dispensing head, itself integrated in the PicoSpotter or PicoPRECISE, (having better XYZ robotics accuracy and speed).

III. Reference:

1 **Global University Venturing**. "Poly-Pico flows towards award". 14th July 2014. Thierry Heles.

2 **K. A. Babatunde et al**. (Massachusetts General Hospital, Harvard Medical School, University of Fribourg). "Chemotaxis and swarming in differentiated HL60 neutrophil-like cells". BioRxiv. (2019).

3 **Peter Docker et al**. "Pico-liter Sample Introduction and Acoustic Levitation Systems for Time Resolved Protein Crystallography Experiments at XFELS". Sensors & Transducers. (2017).

IV. Biography:

PolyPico Technologies Ltd. is an innovative and exciting young company based in Ireland.

Theo Guillerm, part of the Polypico team, is a young biotechnologies engineer interested in microfluidics and nanotechnologies, from France.

V. Presenting author details



Full name: Theo Guillerm
Contact number: +353 212 339 345
Email: *applications@polypico.com*
Twitter account: x
LinkedIn account: https://www.linkedin.com/in/microfluidic-engineer-03ba40148/
Session name / number: Theo Guillerm
Category: ~~Oral presentation~~ / **Poster presentation**
Passport number: 13CV82411