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Industrial Keynote

New possibilities through Puredyne print heads for bioprinting

F. Gruber[1*]

[1] *ViscoTec Pumpen- u. Dosiertechnik GmbH, 84513 Töging a. Inn, Germany*
[*] *Corresponding author, email: felix.gruber@viscotec.de*

While the additive manufacturing of polymers and powder has already found its way into the industry is bioprinting reps. regenerative medicine still at the beginning of a professional process. The brand Puredyne deliver with the endless piston principle and the single use cartridges a new extrusion head for bioprinting. This volumetric dispensing process is based on extrusion-based technology. The combination allows more precision and a high repeatability for viscous biomaterials. The researcher can be more focused on the development of the biomaterials and offers new opportunities in handling of viscous materials. Bioprinting print head with single-use cap [1]: The compact print head with integrated compressed air supply is mounted as a multi-use component on a 3D printer or bioprinter. A stepper motor provides simple control; no additional control system is required. The print head is supplemented by patented single-use caps. In this, eccentric screw technology is the key to maximum precision. The cap comprises a volume reservoir of 5 ml and is replaced after the dispensing process. The exchange process guarantees absolute safety: there is no cross-contamination, as only one material is used per cartridge. The Luer lock connection at the lower end of the cap allows a wide range of different dispensing needles. Eccentric screw technology in bioprinting [1]: Eccentric screw technology is predestined for volumetric dispensing of low- to high-viscosity biomaterials. Precision, repeatability, process reliability and intuitive handling are the core competencies of ViscoTec technology. Materials of a wide range of viscosities are applied reliably and precisely - for a perfect print result. Environmental influences can be virtually neglected in the printing process thanks to the reliable technology. Due to the metering geometry, a constant volume is always conveyed and precisely applied per revolution. The option of reversing the conveying direction ensures clean start and end points.

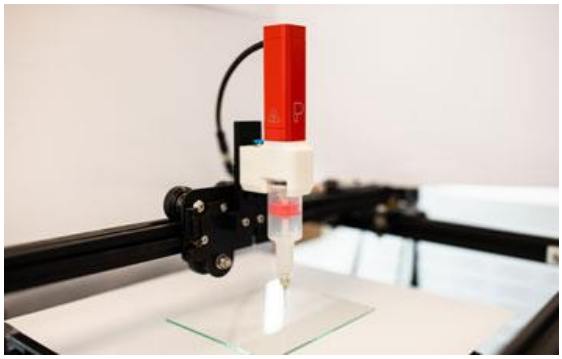

Fig. 1: Puredyne print head.

AUTHOR'S STATEMENT

Conflict of interest: Puredyne is a brand of ViscoTec Pumpen- u. Dosiertechnik GmbH. ViscoTec mainly deals with systems required for conveying, dosing, applying, filling and emptying medium to high-viscosity material. The author is an employee of ViscoTec Pumpen- u. Dosiertechnik GmbH.

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