



Thermal Inkjet micro-deposition: a tool for research and additive manufacturing

PeakJet is a start-up Company born in November last year with the acquisition of some projects developed by a former Company. That Company was active in the field of inkjet printing for textile applications using the most suitable off-the-shelf inkjet head for their different products.

PeakJet got some printer projects based on the HP thermal inkjet technology with the aim to improve what existing and to use the same technology, inkjet heads and drivers, for the micro-deposition of a variety of materials trying to answer a growing market request.

The Printer is a flatbed A3 sized printer that was developed based on ThallosJet specifications and uses the HP45 head of which ThallosJet got the right to buy them empty and to fill with whatever fluid.

PeakJet is proud to work in strong synergy with ThallosJet.

To share the knowledge on the thermal inkjet and mechanics&electronics give us the ability to study the Customer needs and to adapt both the Printer software and the head driver to that specific request.

State that, the Printer is particularly suitable for research and tests purposes, the ease of use and the low cost of the disposable thermal inkjet head benefit the applications.

The Printer can mount up to four heads and the fluid inside could be the same for all or different for each of them. How to manage the heads is completely up to the User and the software allows an extremely well controlled dosage of deposition: how and where the single drop has been jetted is always known.

A variety of different materials can be jetted, of course they must be wholly solved or in a form of suspension containing very small solid parts. The quantity of material contained in the fluid depends also from its heat sensitivity being the vapour bubble jetting the drop formed on the surface of the resistors in the thermal head. ThallosJet develops inks from years and their huge experience will be more than helpful on the optimization or even the formulation of the fluids.

The Printer software allows automatic cleaning cycles and functionality tests, the timing for cleaning cycle and head purging is User selectable, fluids level is always known same as the number of jetted drops.

It is possible to print bi-directional and to overlap the single passes to increase the jetted quantity of ink per surface unit. The movement of the head over the two axes, X-Y, is extremely precise.

The height of the printing bar can be linearly increased, along the Z axis, up to 150mm allowing the use of different samples trays.

The User Manual gives all the information about the Printer and the software together with the minimum requirements to make the fluid jettable.

The development of the Printer is still ongoing, and some new features will be implemented.

We are attending this AVI Conference to get Researchers requests and to treasure their suggestions to optimize the product for the application.