

The Office of Technology Management

UNIVERSITY OF TEXAS  ARLINGTON

Tech ID: UTA 13:31

Electro-Hydro-Dynamic Printing System and Process

INVENTORS: Muthu Wijesundara, Caleb Nothnagle, Woo Ho Lee & Jeongsik Shin

TECHNOLOGY NEED

Conventional mask based lithography results in high manufacturing costs and increases chemical waste. The conventional method requires photo masks and lithograph exposure equipment. The electro-dynamic printing head is expensive and requires frequent replacing of the printer head. There have been printing methods using other approaches, however these have not been practical as they have limitations on the type of materials that can be printed. There is a technological need for an efficient and cost effective direct printing method.

INVENTION DESCRIPTION/SOLUTION

Researchers at UT Arlington have developed an Electro hydrodynamic (EHD) jetting based, high resolution, direct printing method which is alternative to conventional mask based lithography. The invention consists of novel processes and materials with a new chemical composition and printer-head device. This invention has many advantages over the conventional approach such as elimination of the need for photo masks reduces cycle time and chemical wastes. However, the main benefit is its ability to get fine printing from unusual materials.

APPLICATIONS

- Printed Circuit Board Manufacturers
- OLED Manufacturers
- MEMS (Micro Electro Mechanical System) Companies
- Medical Sensor Manufacturers

KEY BENEFITS

- Low manufacturing cost
- Reduces chemical waste
- Reduces Cycle time
- Makes an EHD printing head inexpensive and easy to use

CURRENT STAGE

Prototyped and tested

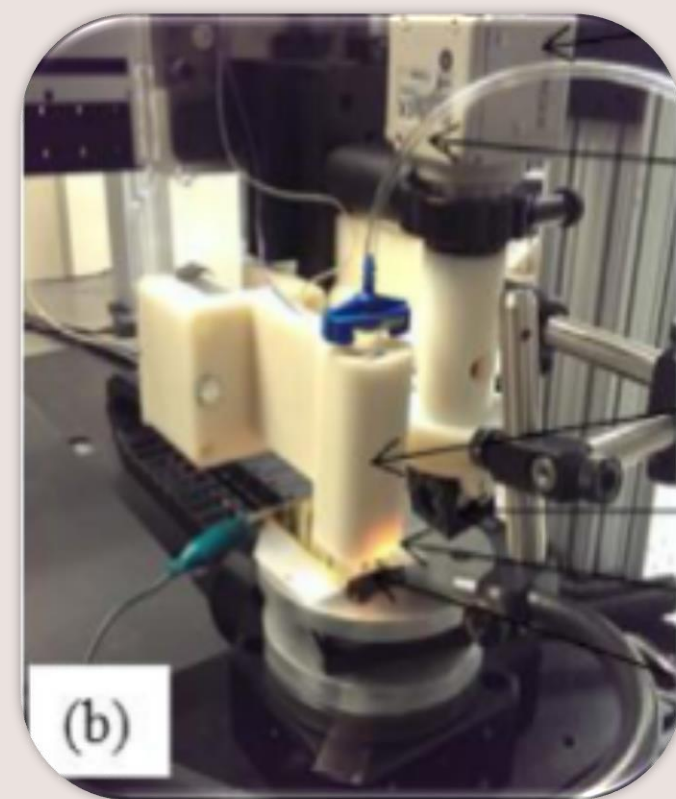
INTELLECTUAL PROPERTY STATUS

Patent granted

US 9415591 B2

RELATED TECHNOLOGY

UTA 15-39 Inks and Method to Produce Flexible, Transparent and Stretchable Circuits by Electro-Hydrodynamic Printing



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