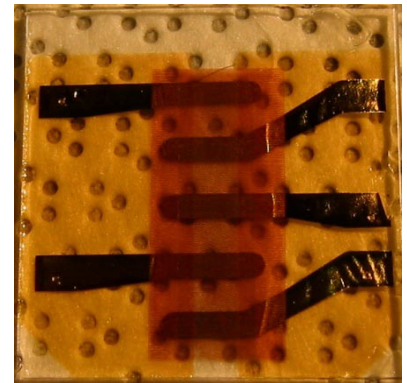


Alternative Energy

In the last decade ink-jet printing technology has come to be viewed as a precision microdispensing tool. Today, this tool is being used in a wide range of manufacturing and instrument applications. Ink-jet microdispensing is data-driven, non-contact, and is capable of precise deposition of picoliter volumes at high rates, even onto non-planar surfaces. Being data-driven, ink-jet dispensing is highly flexible and can be readily automated into manufacturing lines.

Alternative energy represents an emerging application area for ink-jet printing technology. MicroFab and its customers are developing number of alternative energy applications, including organic solar cell, conductors for silicon solar cells, printed batteries, and catalysts for fuel cells.



Ink-jet printed organic PV device on ITO/glass



Carbon nanotube conductor

Materials

Semiconductor Polymers

PV Polymers

Conductive Polymers

Dielectrics

Catalyst

Membrane Polymer

Carbon Nano-tubes

Quantum Dots

Applications

Organic Solar Cells

Silicon Solar Cells

Fuel Cells

Batteries

Capacitors

Conductors

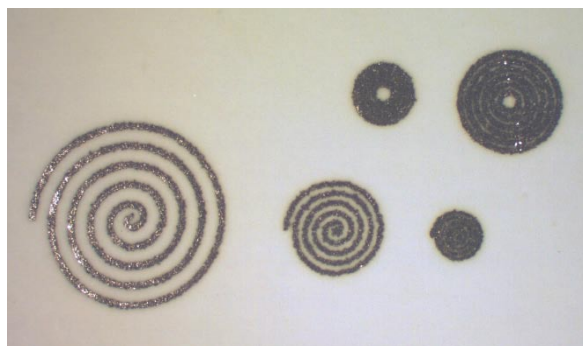


Jetlab® 4 Printing Platform

Alternative Energy

Experience

Since 2002, MicroFab has worked with customers applying ink jet printing technology to a variety of alternative energy applications, including solar cells, fuel cells, and storage capacitors.



Nanosilver ink, print using a Jetlab II

Equipment

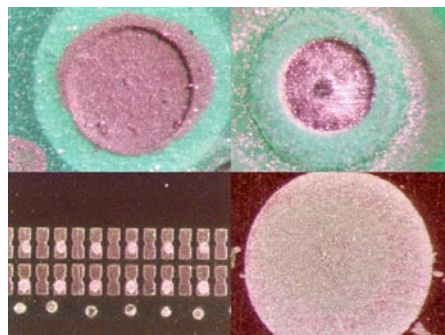
Our JetLab® Platforms can be used to develop printable fluids, demonstrate new applications, or fabricate prototype alternative energy devices. Our subsystems and components can be integrated into a customer's printing equipment for specialty equipment and high volume production.

Services

MicroFab has the research and development, engineering, and manufacturing expertise to enhance our customer's efforts in developing materials and processes for alternative energy applications.



Jetlab® II Printing Platform



Nanoparticle and solution phase Cu ink-jet printed