



Micromachined Probe Apparatus And Methods For Making And Using Same To Characterize Liquid In A Fluid

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The Invention

A micromachined probe apparatus and methods for making and using same to characterize liquid in a fluidic channel and map embedded charge in a sample on a substrate are provided. The probe apparatus includes an integrated scanning tip and a dither actuation mechanism. The actuation is achieved using a bent-beam electrothermal actuator, and the probe tip is insulated from the actuator with a wide isolation gap. The device is fabricated by a modified micro electro-discharge machining process which allows electrical isolation within the micromachined structure using an epoxy plug. The apparatus may be used to measure changes in the external surface potential of a microfluidic channel as a function of varying pH of liquid inside the channel. The apparatus also may be used to map embedded charge in a thin layer on a substrate, showing it to be suitable for monitoring microelectronics manufacturing processes.

Additional Information

For More Information About the Inventors

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Tech Fields

- [Engineering : Micro & nanotechnologies](#)

For current licensing status, please contact Michael Carey at mccarey@warf.org or 608-960-9867