

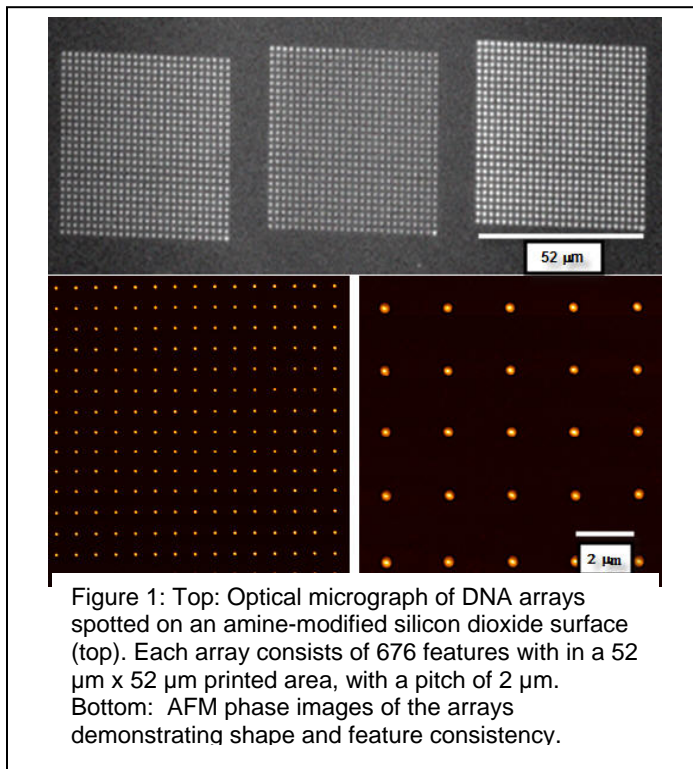
## The User Guide Preview for “Just Add DNA™”: NanoInk’s Process for DPN® of DNA Nanoarrays

By Mohammed Parpia, Emma Tevaarwerk, Ph.D., and Sergey Rozhok, Ph.D.

### Introduction

In the endeavor of developing new inks compatible with the Dip Pen Nanolithography® (DPN) process, NanoInk research teams have discovered a novel ink for patterning certain types of DNA onto substrates of interest such as SiO<sub>2</sub>, gold, and glass. These DNA patterns can be obtained with the NSCRIPTOR™ DPN System, using proprietary DNA Multi-Probe Arrays, DNA Inkwells, and custom InkCAD™ software. The combination of all these tools makes the task relatively simple, with remarkable control and results. The direct-write DPN process facilitates deposition of biological molecules at ambient conditions as opposed to the extreme conditions used in photo-resist chemistry.

During the research and discovery process, we were able to optimize the spotting of short oligonucleotide chains of as many as 60 base-pairs onto a chemically modified surface. This carefully controlled DPN patterning process provides feature sizes as small as 200 nm in diameter. These feature sizes allow simultaneous deposition of different DNA strands onto a single surface. This task can be achieved by using the DNA Multi-Probe Arrays, specially developed for DNA patterning (DS005: DNA Probes & Inkwells data sheet).



To aid you as a user, NanoInk has developed a controlled process protocol and product package, “Just Add DNA™”. It represents the most recent developments in DPN patterning of biological molecules and provides all of the tools along with the knowledge necessary to successfully produce nanoscale DNA dot arrays via DPN.

The Just Add DNA package includes:

- 1) **Inks** - consisting of everything but the DNA, which you add.
- 2) **Pens** - specially designed 12-pen cantilevers with a high spring constant for delivering inks to a substrate in parallel.
- 3) **Inkwells** - corresponding microfluidic inkwells for the delivery of inks to the multi-pen cantilevers.
- 4) **Substrates** for patterning the ink.
- 5) **User Guide** – a complete, controlled protocol describing how all of these tools combined can be used with the NSCRIPTOR™ DPN System to deposit nanoscale DNA patterns.

The Just Add DNA user guide includes the following topics:

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For more information including pricing, please contact NanoInk Sales Department at [sales@nanoink.net](mailto:sales@nanoink.net) or 1-847-679-NANO.

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