Supporting Information

High-density DNA synthesis chip with integrated circuit addressing and static droplet confinement

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Supplementary Note-1

We designed a row/column addressing circuit to achieve independent addressing of 10^7 units (Fig. S2). The electrode array units consist of nMOS-connected capacitors, with a size of 3.16×3.16 μm². The row addressing circuit has 12 input ports and 3163 output ports, connected to the nMOS gates. The column addressing circuit has 133 input ports and 3163 output ports, connected to the nMOS sources, enabling 128 parallel addressing controls.

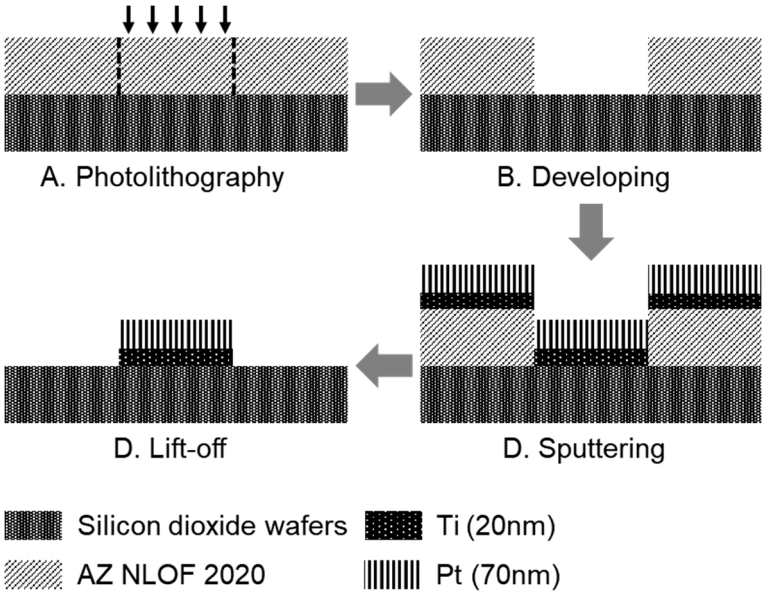

Figure S1. Schematic diagram of the manufacturing process for microelectrode array.

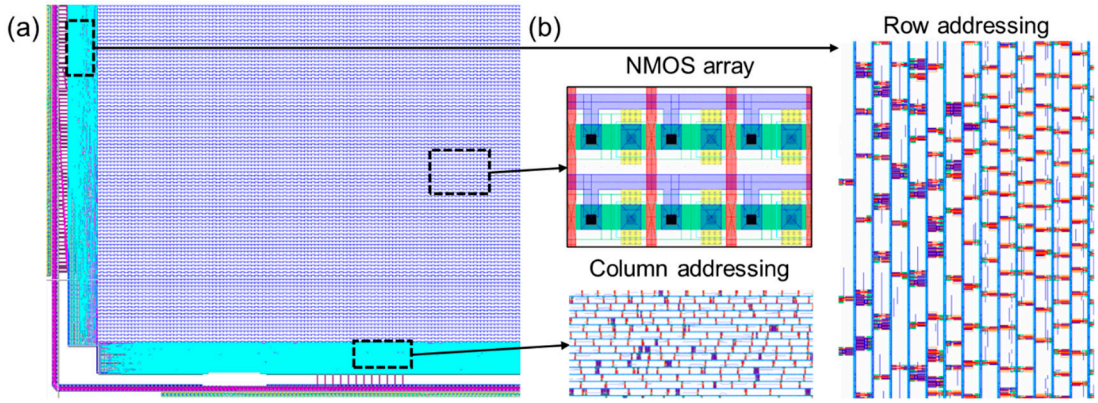

Figure S2. (a) The layout of DRAM-like IC design. (b) Three partial enlarged views of the layout showing detailed components in row/column addressing logic circuit and the two-dimensional array, each unit within the array is 3.16×3.16μm^2.