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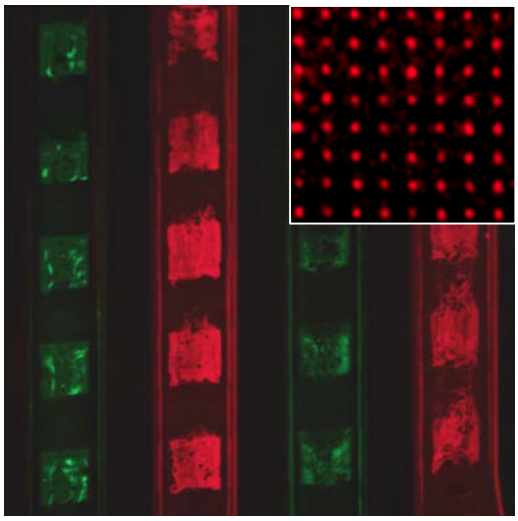
Micro & Nano Patterned Multiplex Biomaterials

The Problem

Current technologies for DNA assays are limited to the micrometre scale, increasing the footprint required for full genome screening.

The Solution

Patterning of stable chemicals as binding/grafting sites for biomolecules at the nanometre scale. This technology benefits from extended shelf-life, high throughput and low cost. Biomolecules are grafted to the pattern when the assay is performed. Biomolecule targets include proteins and DNA.



Devices are fabricated as an array of ink having superior life-time to biomolecules. Biomolecules are grafted at the time of use. Main figure shows a prototype multiplex device integrated with microfluidic delivery, green and red represent two different proteins. Inset shows array of 200 nm dots of antibodies.

Applications

- DNA assays
- Protein assays
- Micro-fluidic integrated devices
- Low volume applications

Benefits

- Low cost
- Commercial microcontact printer compatible
- High feature resolution
- Increased shelf life
- High speed printing

Keywords

Bio-assay, surface patterning, microcontact printing, nanocontact printing

Opportunity

- Licensing

Patent Status

This technology is protected by an International Patent Application: PCT/JP2017/3621

For more information

Technology Licensing Section at bdtl@oist.jp or +81-(0)98-966-8937