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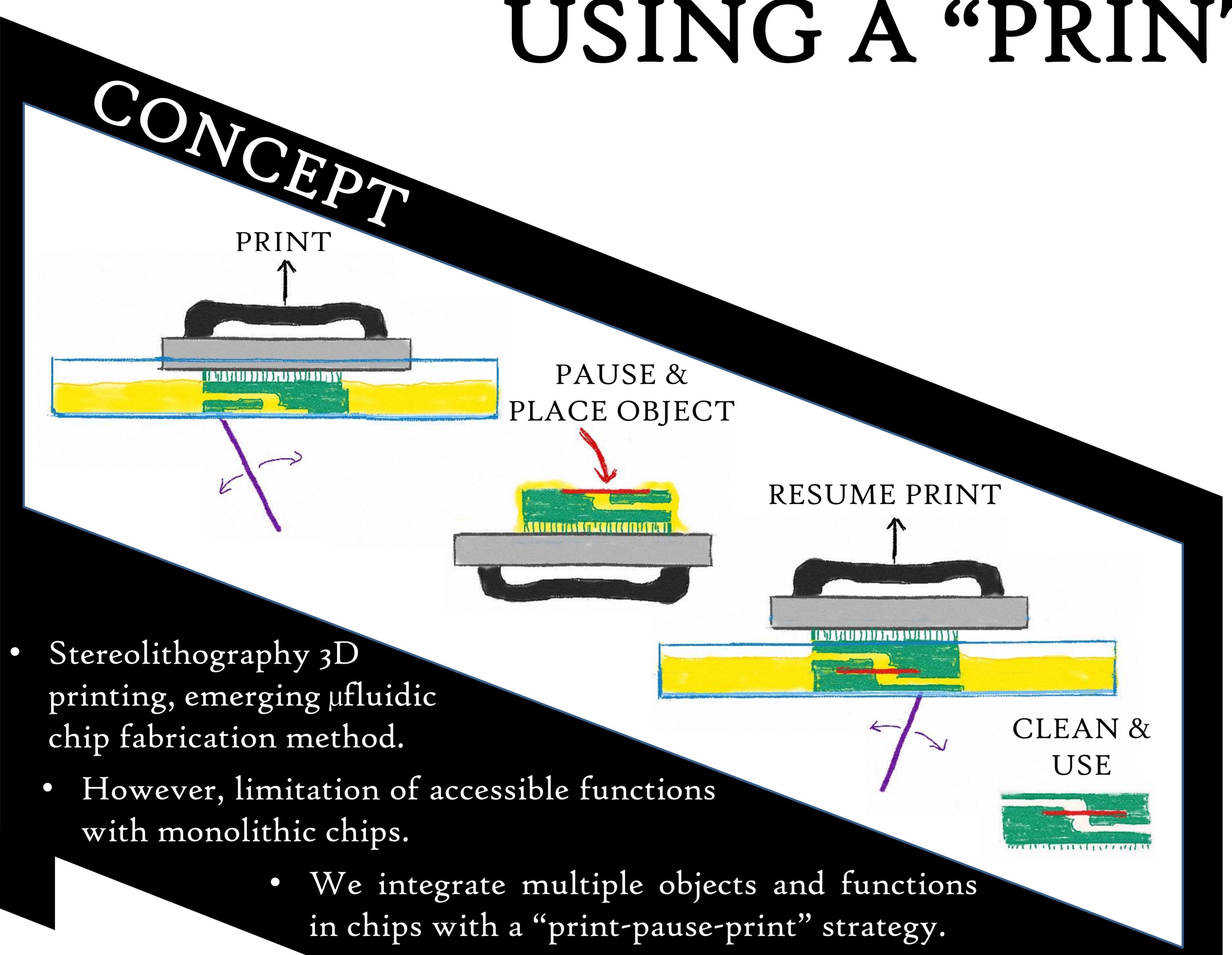
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# FUNCTION INTEGRATION IN 3D-PRINTED $\mu$ FLUIDICS USING A "PRINT-PAUSE-PRINT" STRATEGY



- Stereolithography 3D printing, emerging  $\mu$ fluidic chip fabrication method.
- However, limitation of accessible functions with monolithic chips.
  - We integrate multiple objects and functions in chips with a "print-pause-print" strategy.
- Printer: DWS 29J+ and Forms 3 / Resin: DWS DS3000 and Formlabs Clear
- Images: X-ray tomography

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## GLASS SLIDE - IMAGING & THIN CHANNELS

Silanized coverslip integrated before channel printing.

Max pressure	Chip 1	Chip 2	Chip 3
1 mm wall	2 bars	3.6 bars	2.5 bars
500 $\mu$ m wall	>4 bars	>4 bars	>3.5 bars
200 $\mu$ m wall	>3.5 bars	>3.5 bars	3.2 bars

Silanized coverslip integrated after channel printing.

Channel sandwiched between two silanized coverslips.

## ELASTIC MEMBRANE - VALVES

## SEMIPERMEABLE MEMBRANE - BLUE ENERGY

## PAPER PAD - REAGENT STORAGE

After printing, loading of inks above the paper pads. Drying. Resuspend with water.

## HYDROSOLUBLE FILM - PROTECTION

Pause - cleaning - loading of ink - drying - add hydro-soluble film - print - develop - resuspend with water.

## BALL AND O-RING - DIODE VALVE

## SILICON FILTER - CELL CAPTURE