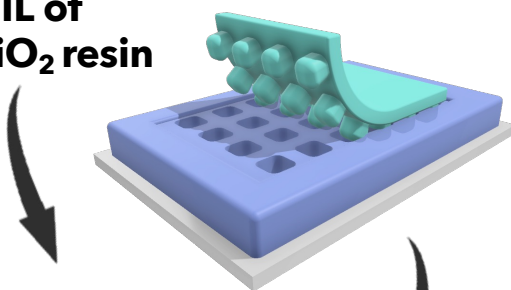


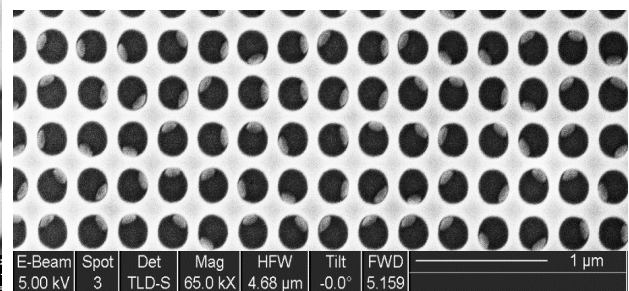
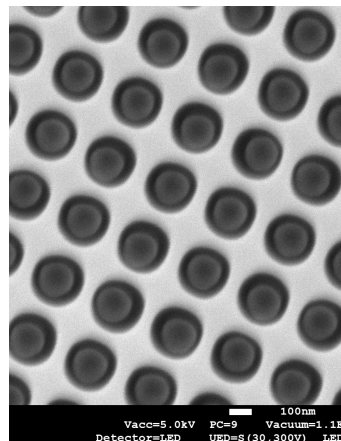
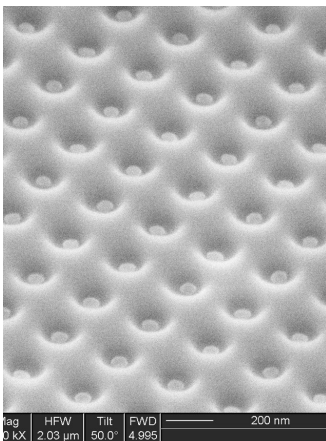
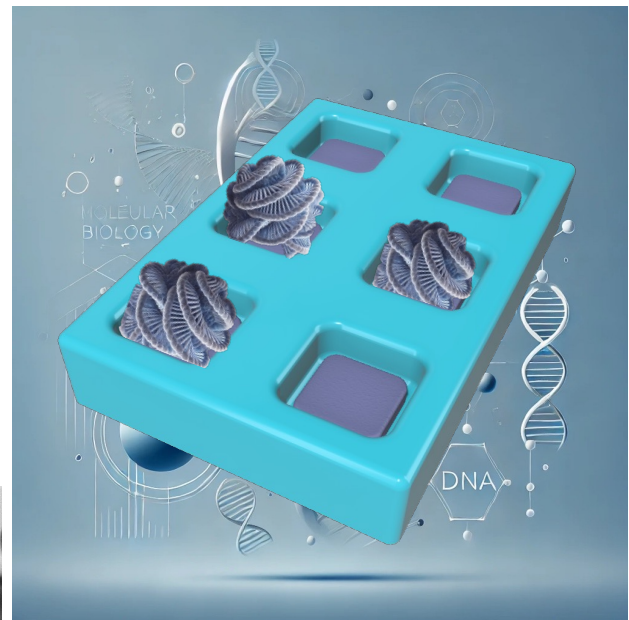
NANO PATTERNED SiO₂/TiO₂ FLOW-CELLS FOR DNA SEQUENCING

Flow cells for DNA sequencing are microfluidic devices designed to capture and process DNA molecules for high-throughput sequencing. They contain nanostructured wells where DNA fragments are immobilized and sequenced in parallel. These cells enable real-time monitoring of biochemical reactions, enhancing speed, accuracy, and scalability in sequencing technologies. Key advancements focus on increasing read length, sensitivity, and cost-effectiveness.

**NIL of
SiO₂ resin**



**Deposition of TiO₂
patch into the wells**



SEM images of the wells arrays prepared by NIL from Solnil resin and technology, showing a square array of 200nm bowl wells (left) and a hexagonal array of circular wells (centre). The pattern is made of non-bonding material. The bonding material is selectively deposited at the bottoms of the wells after the imprinting process using a Solnil patented method. SEM image on the right reveals a square array of circular wells containing each a trapped DNA blob. Such patterns can be process on large surfaces of glass, Si, quartz,...The stability in relevant biologic analysis liquids (cycling and static modes) has been qualified.