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Formation of bi-nanopores in silicon chips[1] SANG RYUL PARK, HONGBO PENG, X. S. LING, Brown University — Solid-state nanopores are holes with diameter and length on the order of 20 nm or smaller embedded in an insulating solid membrane. These nanopores have been shown to allow linear translocation of DNA molecules in buffer conditions and can be used as an electronic device for detecting and characterizing nucleic acids and proteins. Here we report a novel method of fabricating bi-nanopores in silicon chips using feedback electrochemical etching. The simplicity and low-cost of our approach, taking advantage of the well-known anisotropic etching behavior of silicon in alkaline solutions, bring solid-state nanopores closer to industrial-scale applications.

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