

Supporting Information

Biodegradable Elastomers and Silicon Nanomembranes/Nanoribbons for Stretchable, Transient electronics, and Biosensors

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KEYWORDS: Stretchable, flexible, transient, biodegradable electronics, biosensors

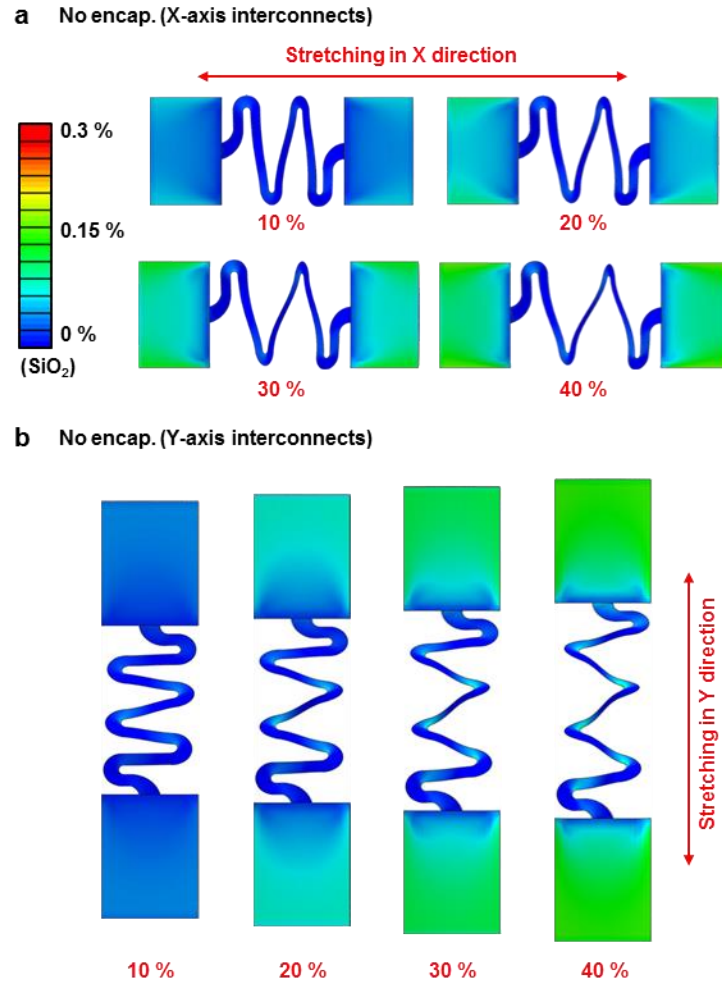


Figure S1. FEA results for a CMOS inverter with a serpentine structure for cases of tensile strain in the (a) x direction, and (b) y direction.

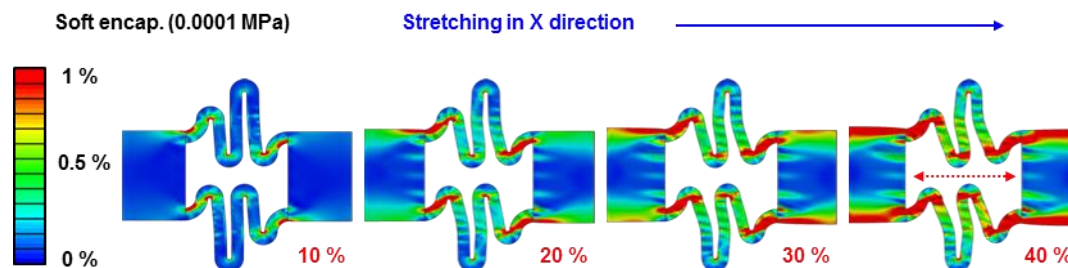


Figure S2. Maximum principal strain distributions determined by FEA for a CMOS inverter with soft encapsulation (0.0001 MPa) for stretching up to 40 %.

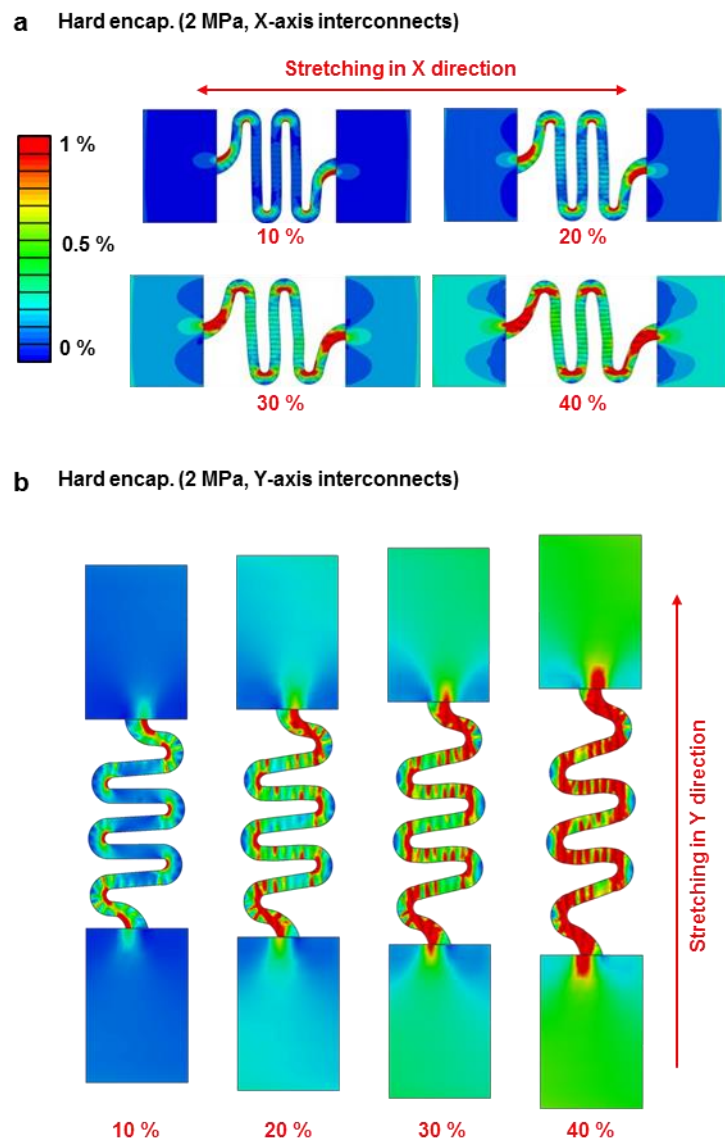


Figure S3. Maximum principal strain distributions determined by FEA for a CMOS device with hard encapsulation (2 MPa) for stretching in the (a) x direction and (b) y direction.

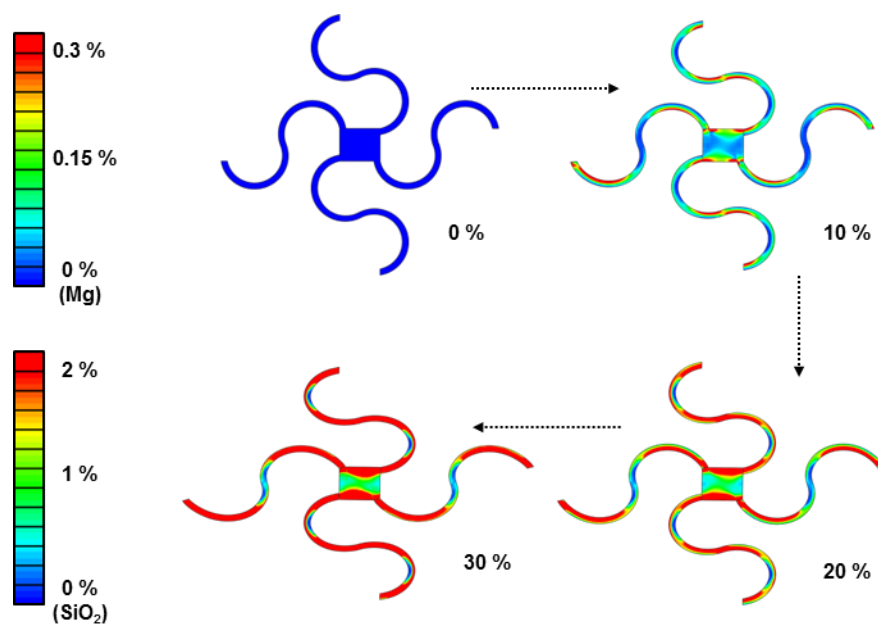


Figure S4. FEA results for a CMOS inverter with FS structure under tensile loading up to 30 %.

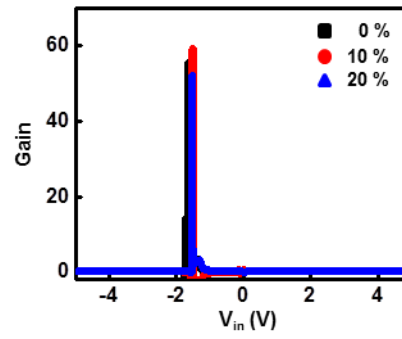


Figure S5. The measured gains of a typical CMOS inverter while applying strain up to 20 % (black, 0 %; red, 10 %; blue, 20 %).

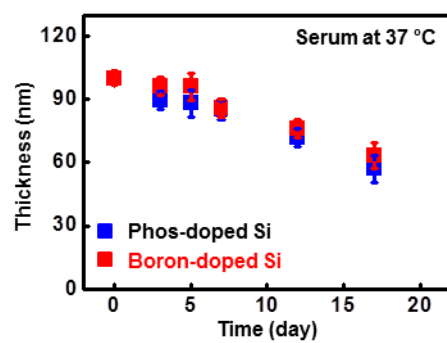
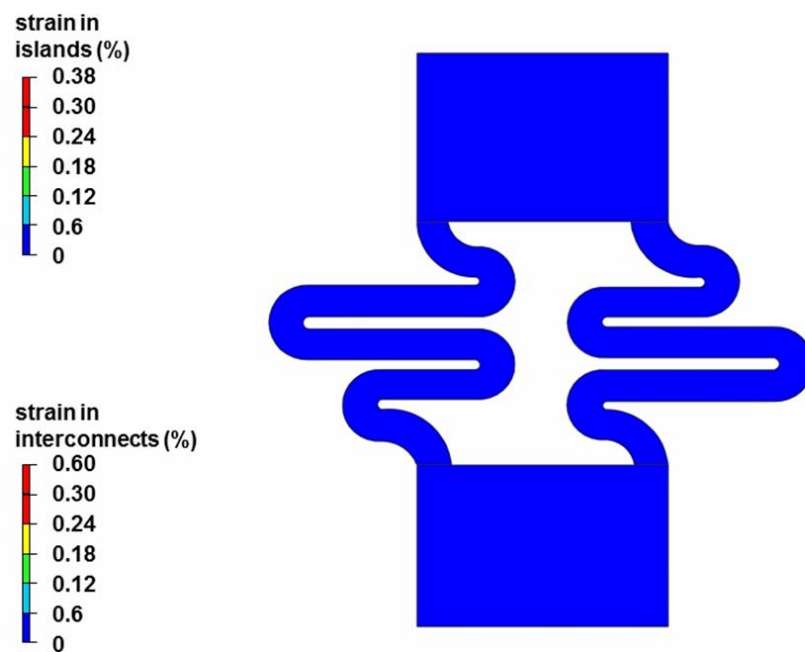
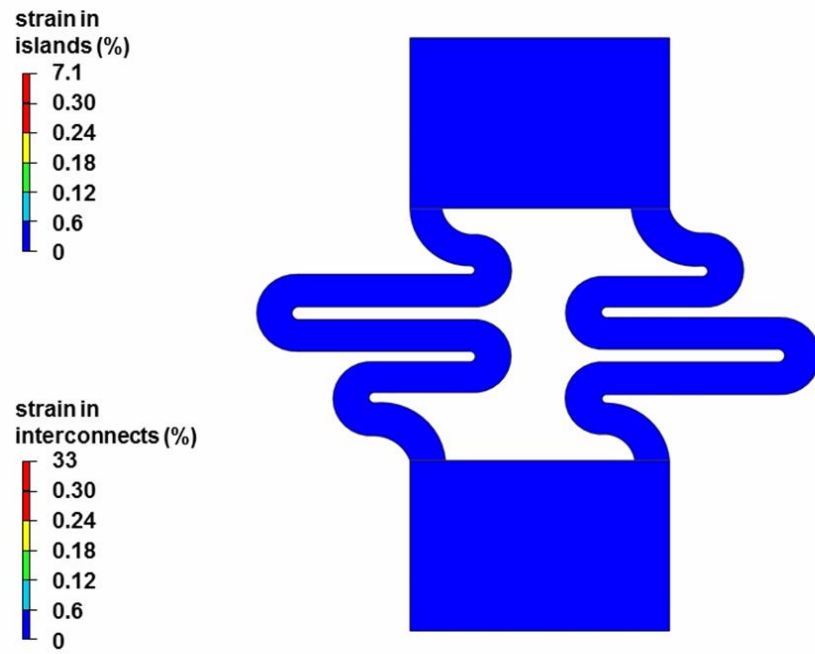


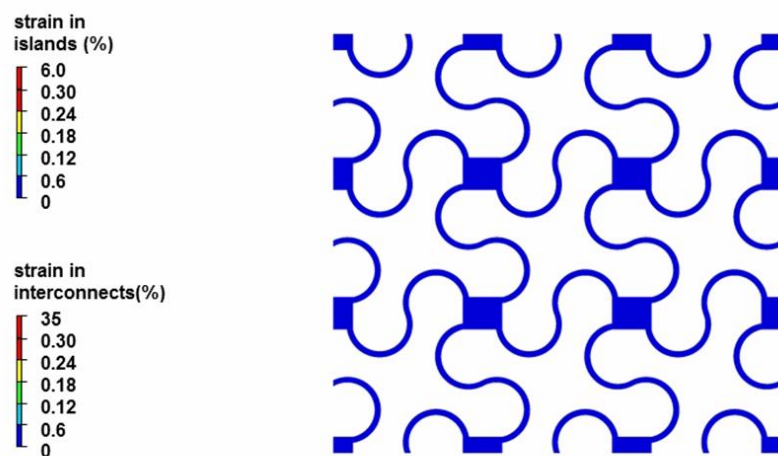
Figure S6. Changes in thickness of boron- (red) and phosphorous-doped (blue) Si while immersed in bovine serum at 37 °C.



Movie S1. FEA results for stretching of a CMOS inverter with a typical serpentine structure without encapsulation.



Movie S2. FEA results for stretching of CMOS inverter with a typical serpentine structure, with hard encapsulation.



Movie S3. FEA results for stretching of CMOS inverter with filamentary serpentine structure, with hard encapsulation.