RSC Advances

SUPPORTING INFORMATION

Fabrication of well-ordered silicon nanopillars embedded in a microchannel via metal-assisted chemical etching: A route towards an opto-mechanical biosensor

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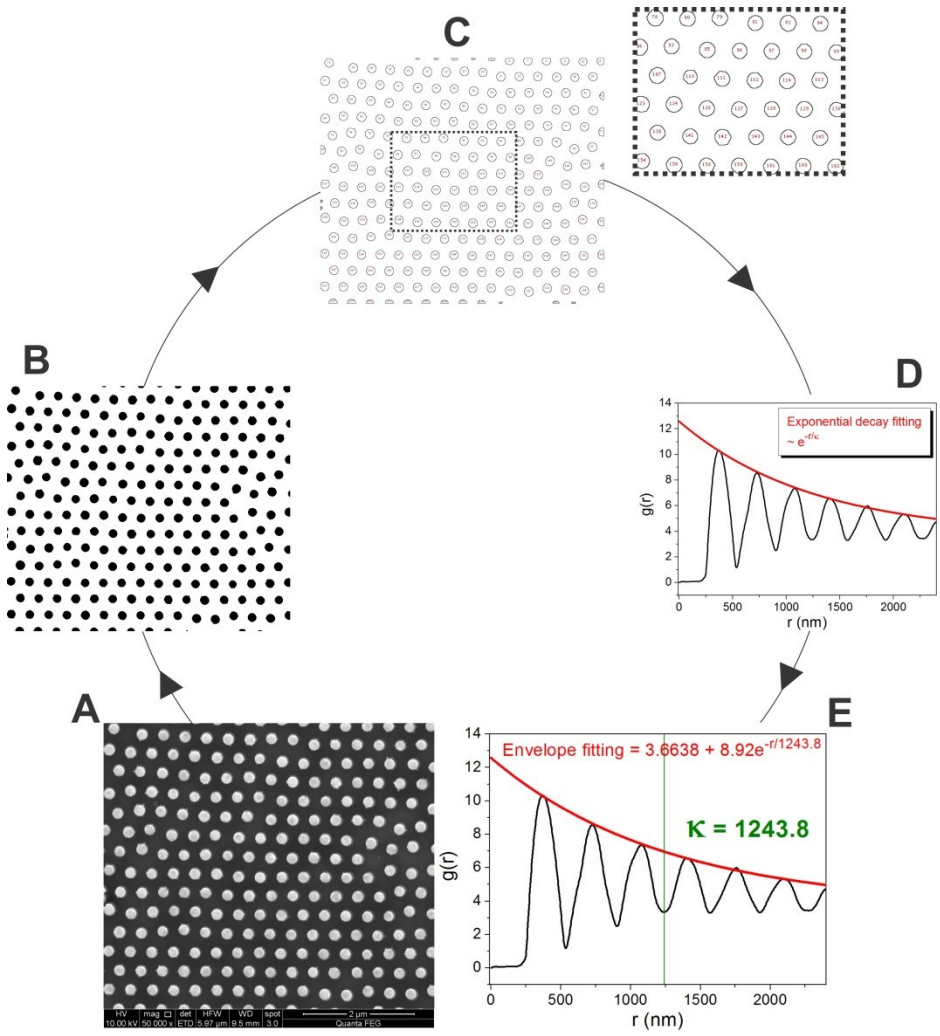

Fig. S1. (A) SEM image of SiNPs build inside the SU-8 microchannel (*Top view*). (B) Morphological operations of the SEM image to determine the location of the nanopillars. (C) Position assignation of the nanopillars using the Analyze particle tool of the ImageJ software [1]. (D) Calculation of the pair correlation function g(r) to determine the correlation length **κ** [2], [3] using the software R with the library "spatstat" [4]. (E) Fitting of the envelope of the pair correlation function by an exponential decay function ($exp(-r/\kappa)$) to calculate the correlation length.

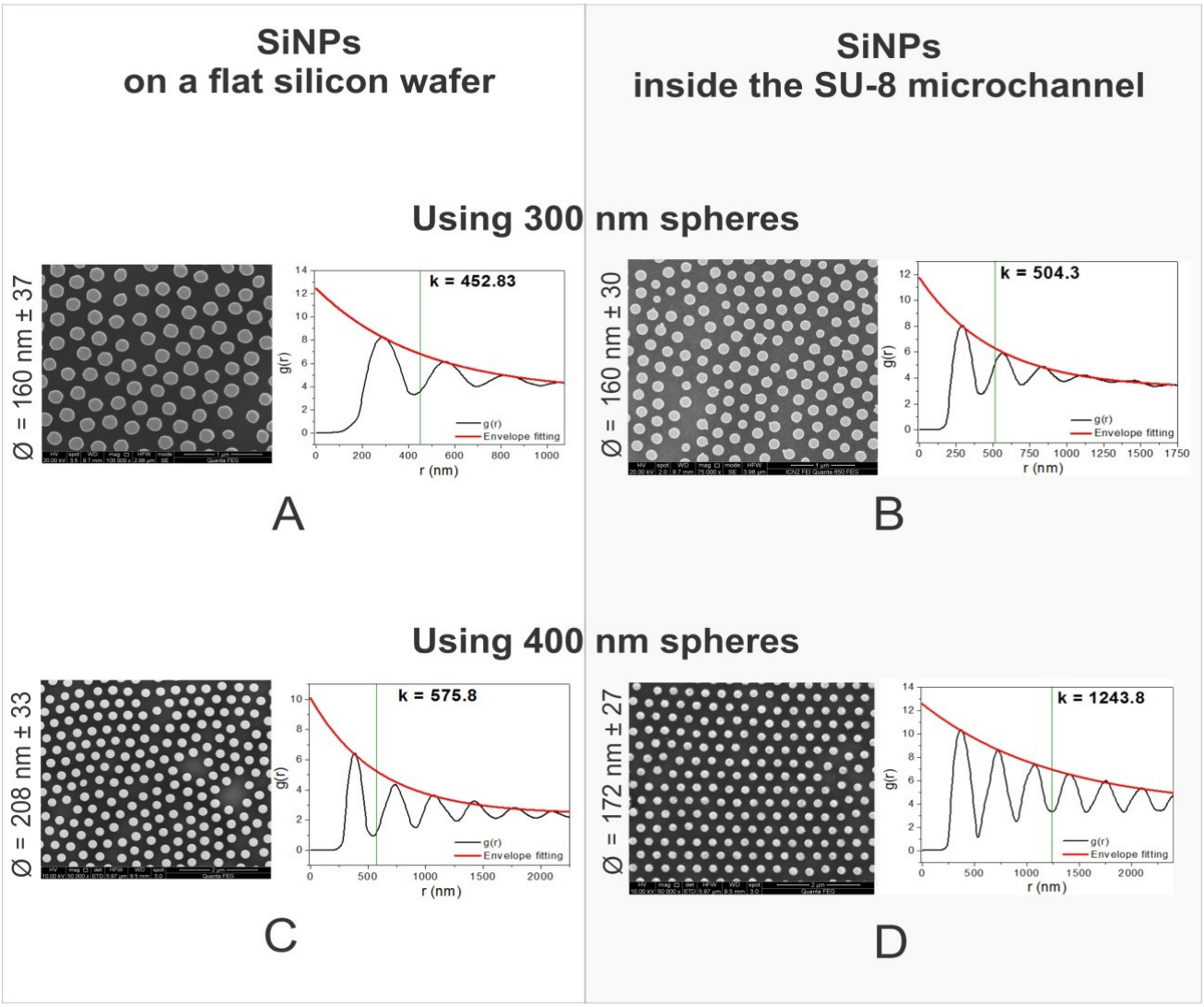

Fig. S2. Comparison of SiNPs fabricated inside the SU-8 microchannel with those built on a flat silicon wafer. For each image (*top view*) the correlation length was calculated demonstrating that the degree of ordering is preserved in those arrays of SiNPs contained in the microchannel. The RIE recipe for each case is: (A)70 s, (B)70 s, (C)100 s and (D)100 s, respectively.

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[2] C. Harrison, P. M. Chaikin, D. A. Huse, R. A. Register, D. H. Adamson, A. Daniel, E. Huang, P. Mansky, T. P. Russell, C. J. Hawker, D. A. Egolf, I. V. Melnikov, and E. Bodenschatz, 'Reducing Substrate Pinning of Block Copolymer Microdomains with a Buffer Layer of Polymer Brushes', *Macromolecules*, vol. 33, no. 3, pp. 857–865, 2000.

[3] K. Aissou, T. Baron, M. Kogelschatz, M. D. Hertog, J. L. Rouvière, J.-M. Hartmann, and B. Pélissier, 'Fabrication of Well-Organized and Densely Packed Si Nanopillars Containing SiGe Nanodots by Using Block Copolymer Templates', *Chem. Mater.*, vol. 20, no. 19, pp. 6183–6188, 2008.

[4] R Core Team, 'R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0', 2016. Available: http://www.R-project.org/