Supporting Information

Automated Sub-100 nm Local Anodic Oxidation (LAO)-Directed Nanopatterning of Organic Monolayer-Modified Silicon Surfaces

Bruno Fabre* and Cyril Herrier

UMR 6226 CNRS/Université de Rennes, Sciences Chimiques de Rennes, Matière Condensée et Systèmes Electroactifs (MaCSE), Campus de Beaulieu, 35042 Rennes, France

Table S1. Water Contact Angle and Roughness of Different Organic Monolayers Covalently Bound to Si(111) Surfaces.

	SiO_x [a]	Si-H	Si-$C_{10}H_{21}$	Si-$C_{12}H_{25}$	Si-$C_{16}H_{33}$	Si-$C_{10}H_{20}COOH$
Contact angle / ° [b]	< 10	90	107	108	108	45
Roughness / Å [c]	3.3	1.3	1.5	1.5	1.5	1.5

[a] After oxidation in piranha solution. [b] Uncertainty: ± 1°. [c] Root-mean-square roughness determined by AFM (uncertainty: ± 0.2 Å).

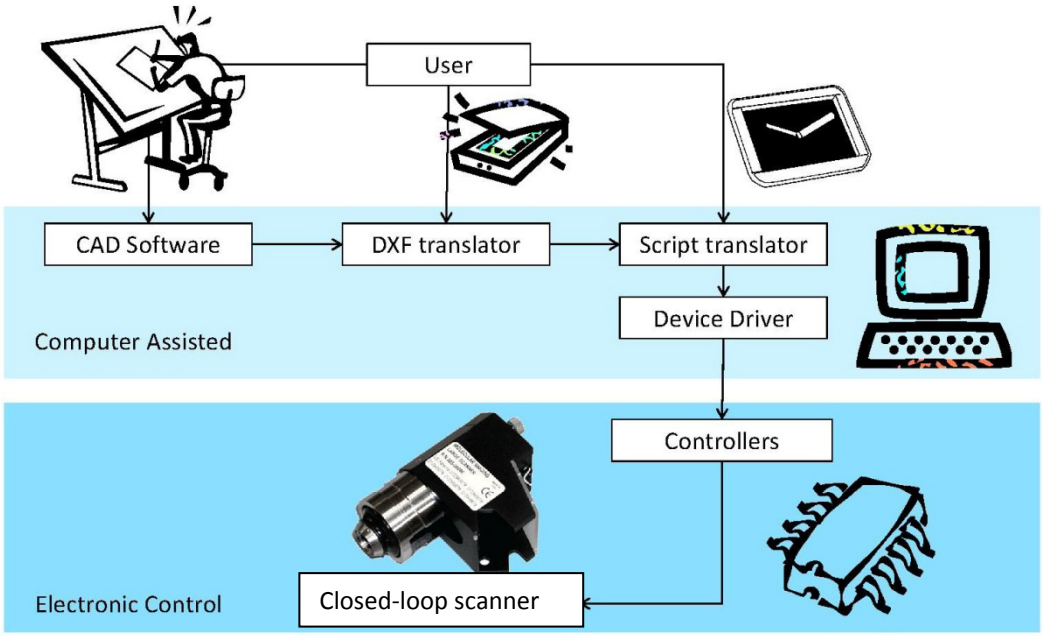

Figure S1. Simplified experimental setup for automated LAO-directed nanopatterning of modified silicon surfaces.

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movie.avi

Movie S1. Movie describing the automated motion of the AFM tip reproducing a boat drawing composed of vectors.

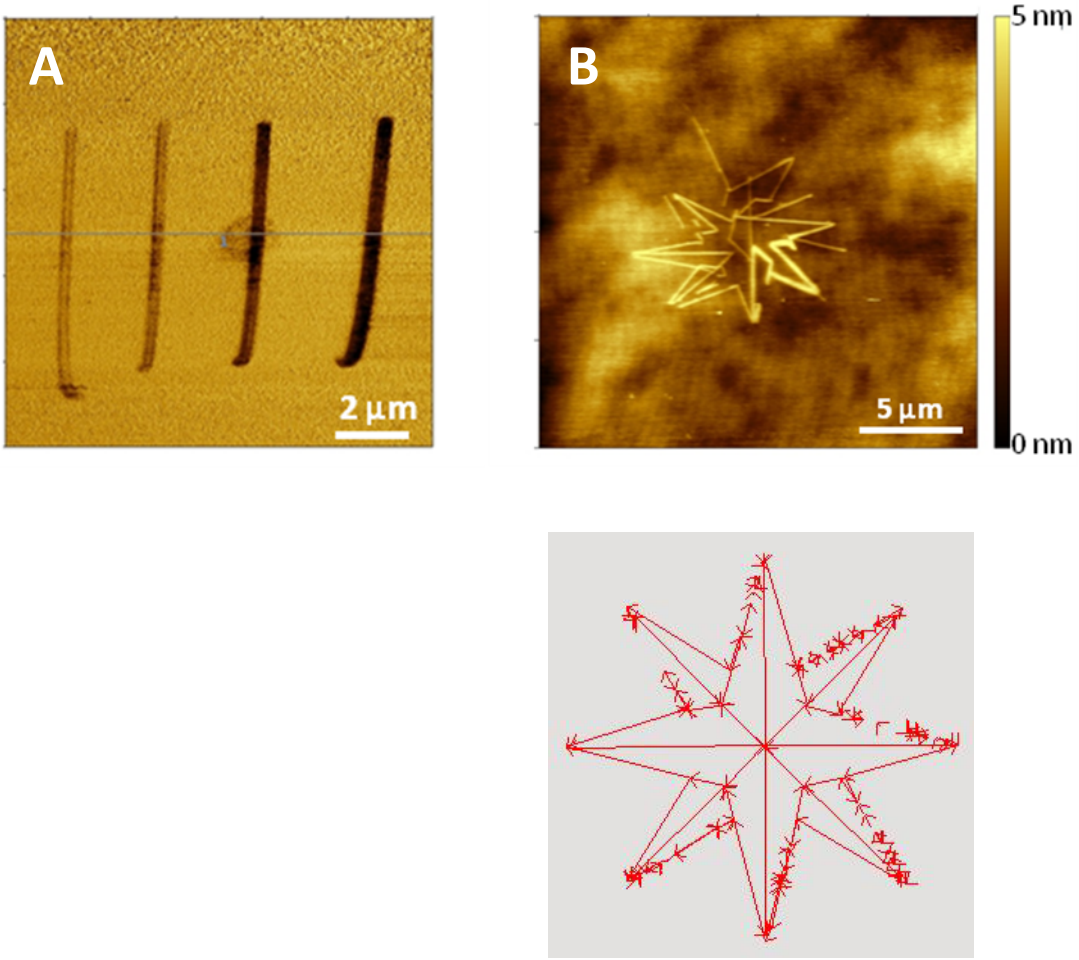

Figure S2. Patterns generated using an open-loop scanner. Lateral force microscopy image of oxide lines (A) and topography image of a vectorized star (B). The patterns have been electrogenerated by LAO at 8 V using a writing speed of 0.1 μm s^{-1}. These images demonstrate that a AFM tip mounted on an open-loop scanner can not be precisely positioned: the lines are not perfectly parallel (A) and do not cross at the same point (B).

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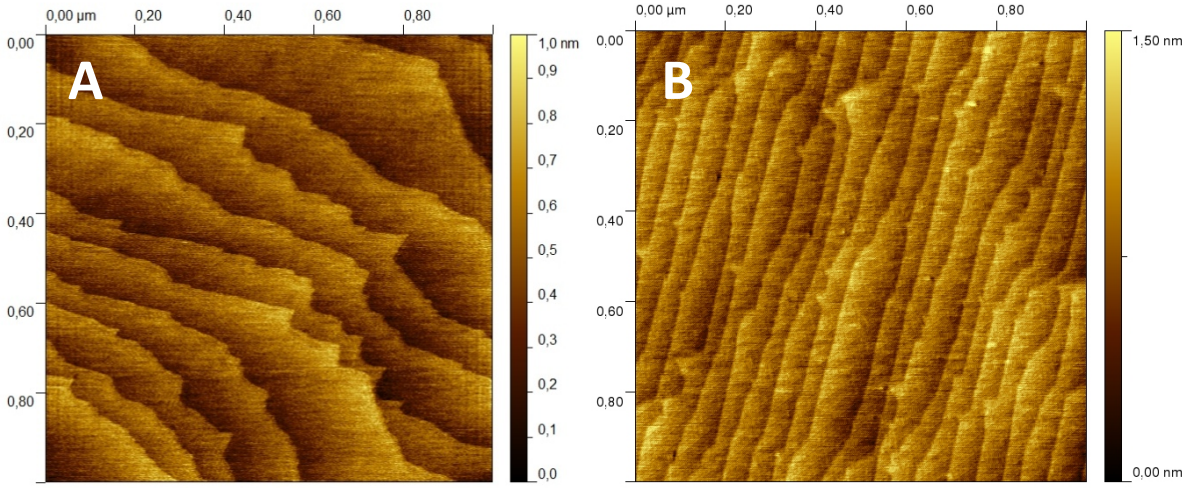

Figure S3. AFM images (1 × 1 μm^2) of undecanoic acid (A) and hexadecyl (B) monolayer-modified Si(111) surfaces.