

## Electronic supplementary information (ESI)

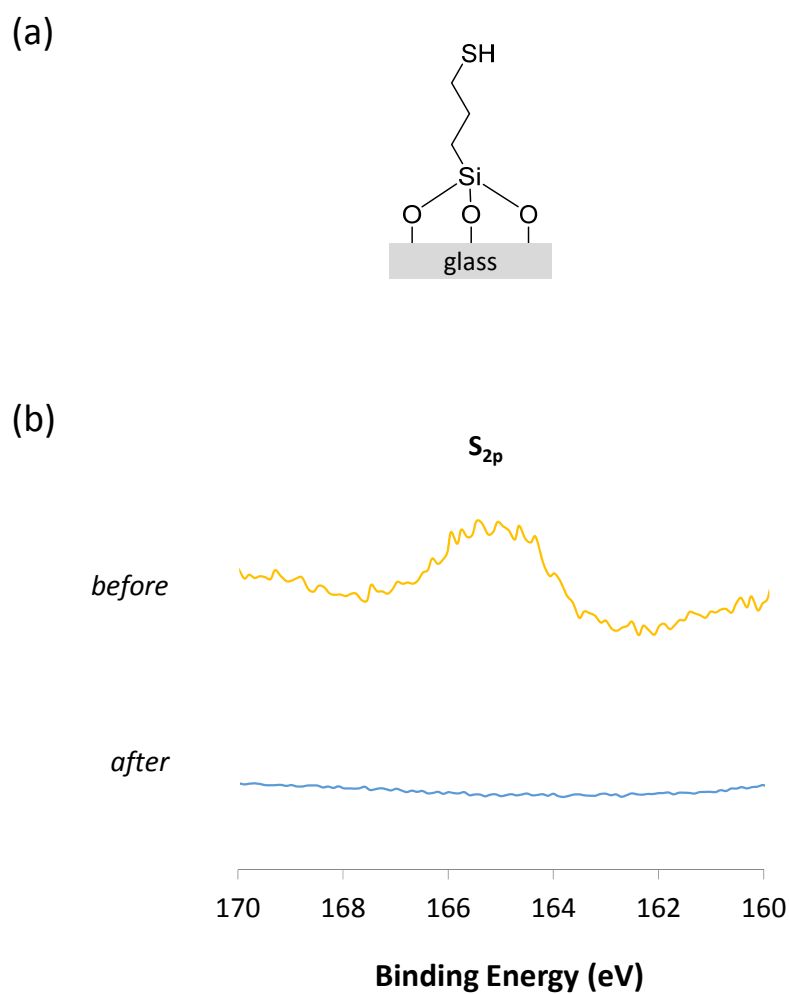
### **Regeneration of Glass Nanofluidic Chips through a Multiple-Step Sequential Thermochemical Decomposition Process at High Temperatures**

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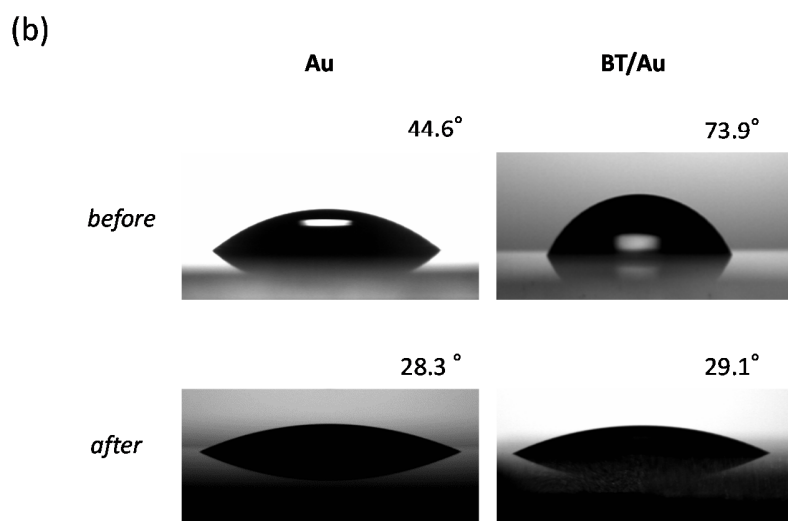
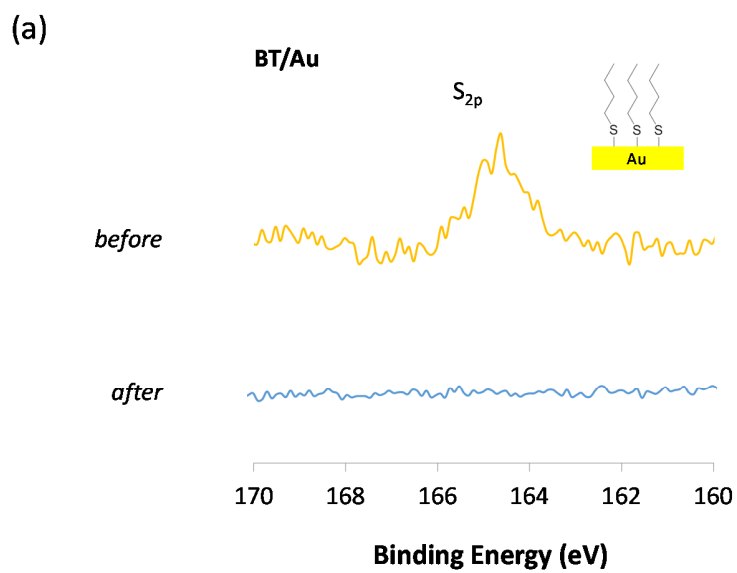
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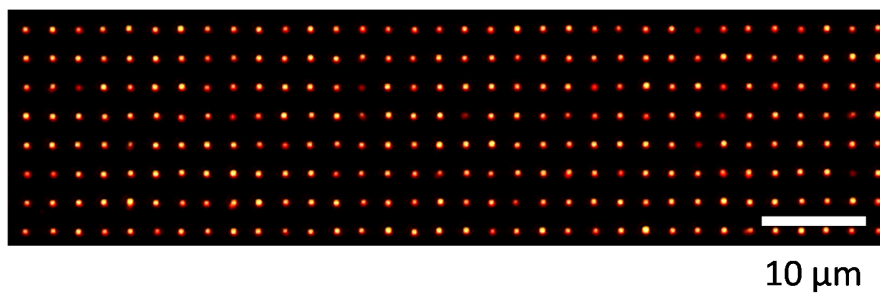
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**Fig. S1** XPS spectra of sulfur ( $S_{2p}$ ) on (a) 3-mercaptopropyltrimethoxysilane (MPTS) modified glass substrates (b) before and after treated by the regeneration process. The MPTS modified glass substrates were prepared using an absolute ethanol solution of MPTS (2.5 wt%) according to a silanization process reported by C. R. Vistas et al. (*Appl. Surf. Sci.*, 2013, **286**, 314–318).



**Fig. S2** (a) XPS spectra of sulfur ( $S_{2p}$ ) and (b) water contact angle measurements on the gold-deposited glass substrates with hydrophobic 1-butanethiol (BT) SAMs before and after treated by the regeneration process.



**Fig. S3** A bright-field image of the gold nanoarrays after the second-time regeneration.