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(54) Title (EN): MICRO- AND NANOCONTACT PRINTING WITH AMINOSILANES: PATTERNING SURFACES OF MICROFLUIDIC DEVICES FOR MULTI- PLEXED BIOASSAYS

(54) Title (FR): IMPRESSION PAR MICROCONTACT ET NANOCONTACT AVEC DES AMINOSILANES : FORMATION DE MOTIFS SUR DES SURFACES DE DISPOSITIFS MICROFLUIDIQUES POUR ESSAIS BIOLOGIQUES MULTIPLEXÉS

(57) Abstract:

(EN): It is an object of the present invention to achieve rapid surface patterning of biomolecules within microfluidic devices with high reproducibility. In this work, we present a new means of creating micro- and nano-patterns of aminosilanes within microfluidic devices via an aqueous based microcontact printing technique. To minimize the diffusion of molecules into the PDMS stamp, we use water as the inking solvent and enforce short incubation and contact times during the printing process to preserve the pre-defined resolution of patterned features. These patterns then serve as the building block to couple multiple biomolecules in solution onto a single surface for subsequent bioassays.

(FR): Un objectif de la présente invention est d'obtenir une formation de motifs de surface rapide de biomolécules dans des dispositifs microfluidiques à haute reproductibilité. Dans cette invention, un nouveau moyen de création de micro-motifs et nano-motifs d'aminosilanes dans des dispositifs microfluidiques par une technique d'impression par microcontact à base aqueuse est présenté. Afin de minimiser la diffusion de molécules dans l'indicateur PDMS, de l'eau est utilisée comme solvant d'encre et des temps d'incubation et de contact courts sont appliqués pendant le processus d'impression pour préserver la résolution prédéfinie d'éléments à motifs. Les motifs servent ensuite de bloc de construction pour coupler de multiples biomolécules en solution sur une surface unique pour des essais biologiques ultérieurs.

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