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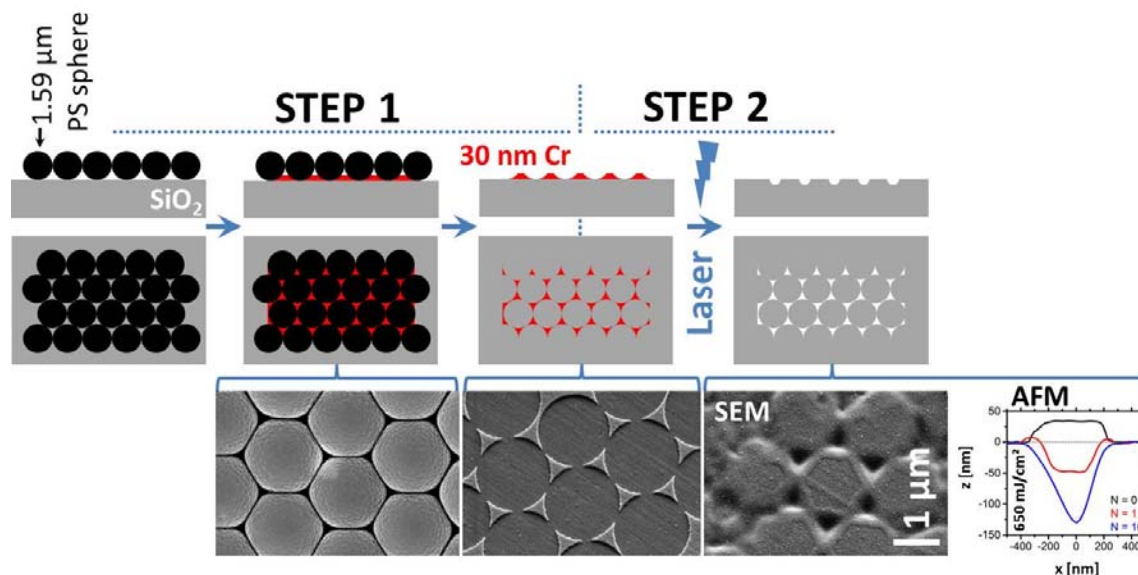


# Nanosecond laser nanostructuring of fused silica surfaces assisted by a chromium triangle template

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## Graphical abstract



## Highlights

- \* The ns- laser irradiation of Cr triangle on  $\text{SiO}_2$  allows the structuring of the substrate.
- \* The resultant structures are dependent on the laser parameter.
- \* The resultant structures were measured by AFM, SEM and EDX.
- \* Periodic pyramidal like structures in  $\text{SiO}_2$  can be produced applied  $\sim 650 \text{ mJ/cm}^2$ .

## Abstract

The well-reproducible, fast and cost-effective nanostructuring is a big challenge for laser methods. The laser nanostructuring of fused silica assisted by chromium nanotriangles was studied using a KrF excimer laser ( $\lambda = 248 \text{ nm}$ ,  $\Delta t_p = 25 \text{ ns}$ , top hat beam profile). Therefore, a fused silica substrate was covered with periodically ordered polystyrene (PS) spheres with a diameter of  $1.59 \mu\text{m}$ .

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