

# Three-Color Plasmon-Mediated Reduction of Diazonium Salts over Metasurfaces.

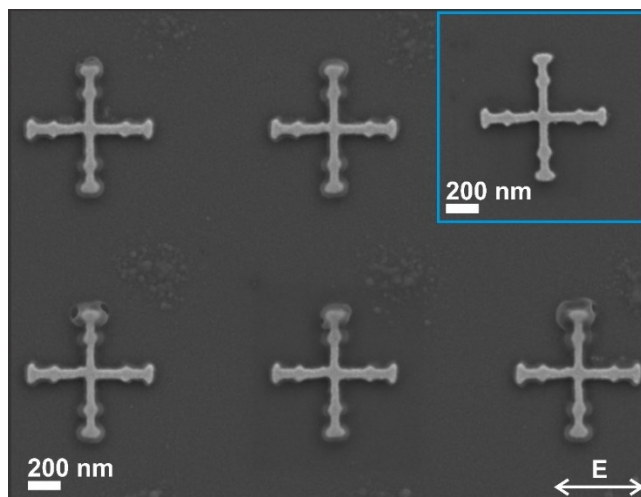
## Supporting Information

*Denis A.B. Therien,<sup>1</sup> Danielle M. McRae,<sup>1</sup> Claire Mangeney,<sup>2</sup> Nordin Félidj<sup>3</sup> and François  
Lagugné-Labarhet\*<sup>1</sup>*

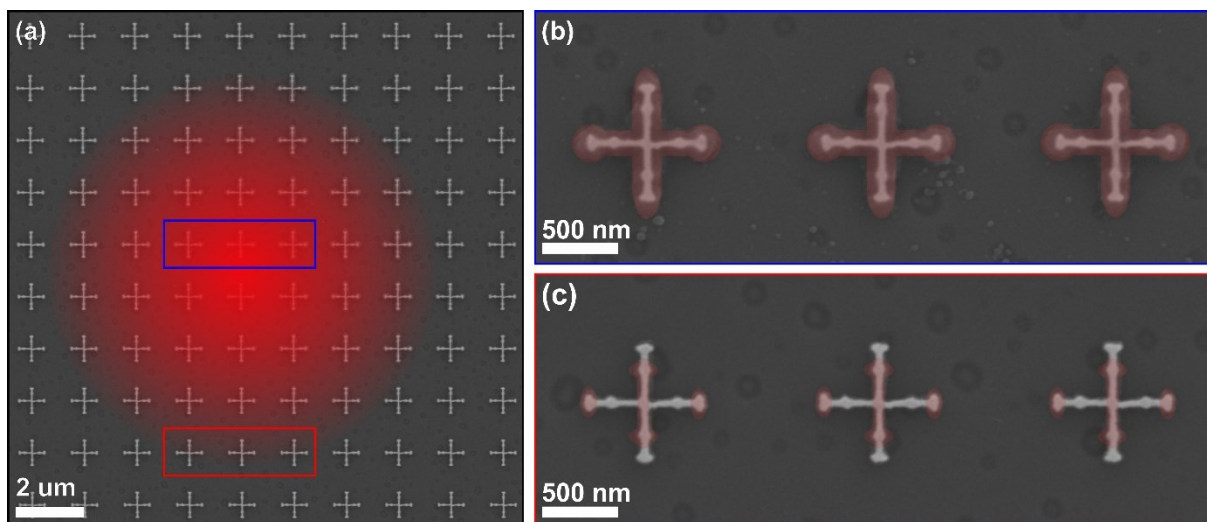
<sup>1</sup> Department of Chemistry, University of Western Ontario, 1151 Richmond Street, London, ON,  
Canada, N6A 5B7

<sup>2</sup> Université de Paris, Laboratoire de Chimie et Biochimie Pharmacologiques et Toxicologiques,  
LCBPT, UMR 8601 CNRS, F-75006 Paris, France

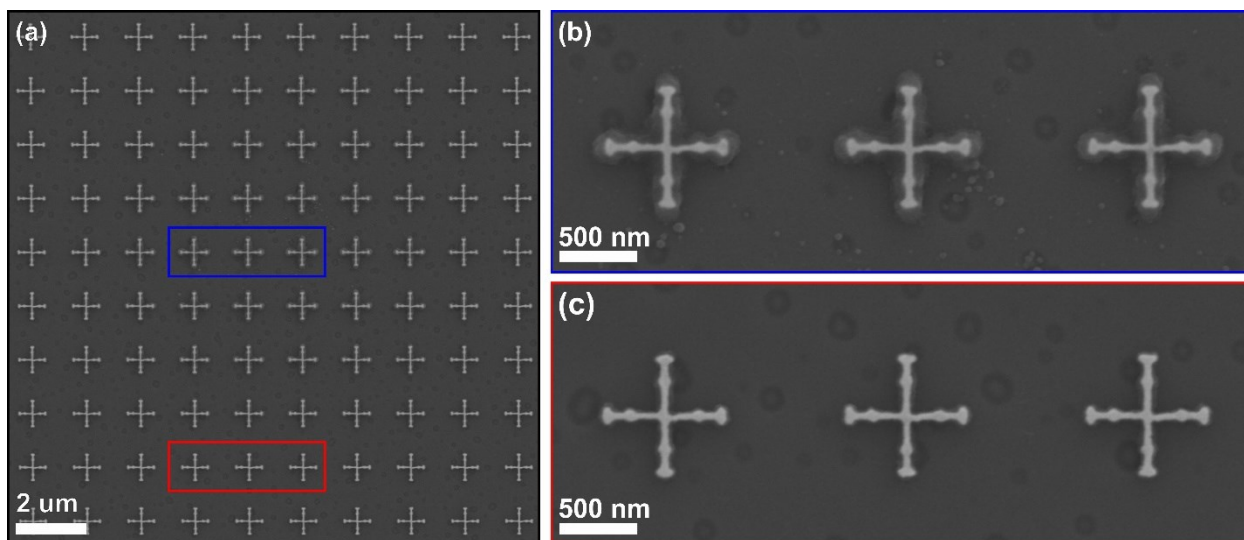
<sup>3</sup> Université de Paris, ITODYS, UMRS 7086 CNRS, F-75006 Paris, France



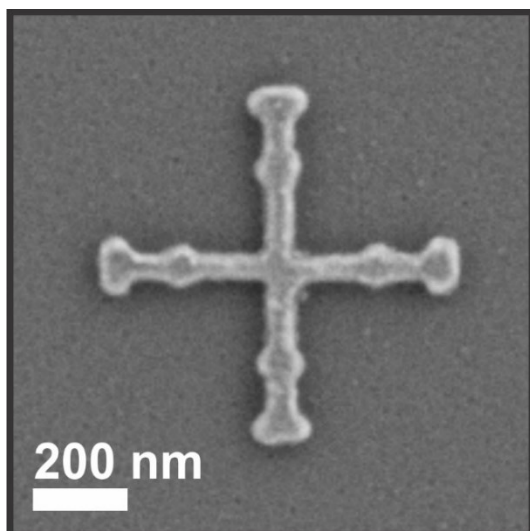
**Fig. S1.** A representative array of five structures, each individually irradiated under an 800 nm fs-pulsed laser with a horizontal polarization in the presence of the diazonium-containing solution. In this experiment, the 800 nm laser beam is focused to 1 micron and the sample is scanned using a piezo electric stage. Each structure is irradiated for 60s with the beam centered over the structure. The inset (blue box) shows a structure immersed in the same diazonium-containing solution but without any exposure to laser irradiation.



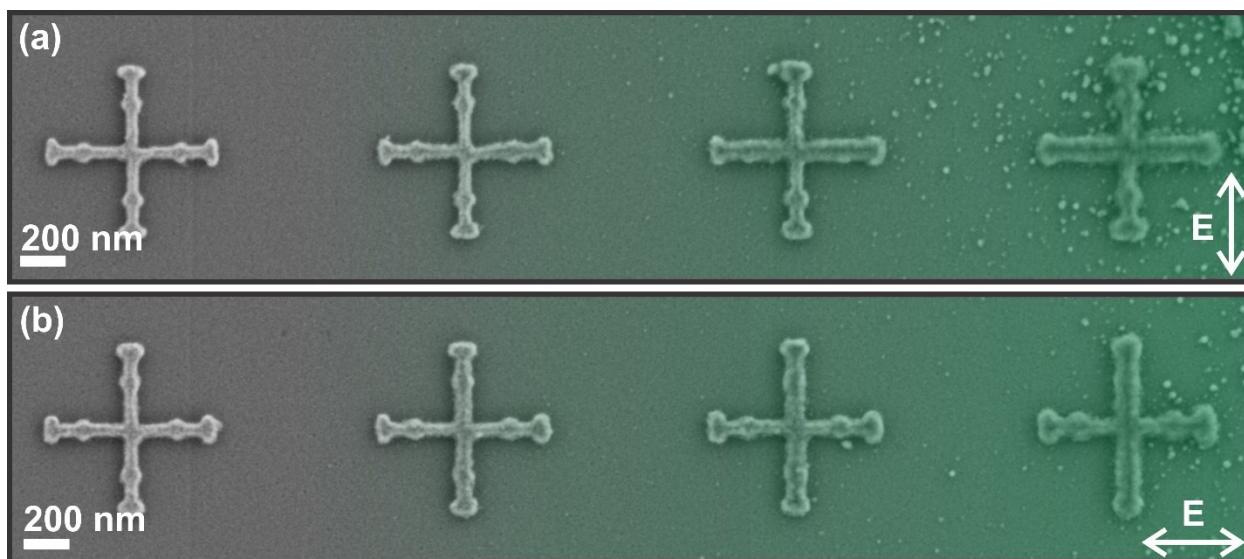
**Fig. S2.** (a) an SEM image of an array of dendrimers irradiated at 632.8 nm in presence of diazonium salts. The blue box is near the center of the beam and the red box is near the edge. The difference in grafting is shown in more detail in (b) and (c). Unedited images are shown in Fig. S3.



**Fig. S3.** Non-colored version of Fig. S2 in the main text. (a) an SEM image of an array of dendrimers, where the blue box is near the center of the beam and the red box is near the edge. The difference in grafting is shown in more detail in (b) and (c).



**Fig. S4.** SEM image of an ungrafted crosshair structure used for the colorized comparison images shown in Fig. 8c,d of the main text.



**Fig. S5.** SEM images of the 532 nm irradiated nanostructures with a (a) vertical and (b) horizontal polarization with increasing laser intensity from left to right. The first structure on the left of (a,b) has not been irradiated and serves as a reference.