

*Plasmon-Mediated Surface Functionalization: New Horizons for the Control of Surface Chemistry on the Nanoscale*, Issam Kherbouche, Yun Luo, Nordin Félidj,\*and Claire Mangeney\*, **Chem. Mater.** 2020, 32, 5442–5454

<https://doi.org/10.1021/acs.chemmater.0c00921>

#### Abstract :

The combination of plasmonics and surface chemistry is a fast growing field of research, with promising prospects for a wide range of applications, including analytical chemistry, sensing, photocatalysis, photovoltaics, and nanomedicine. It takes advantage of the confined electromagnetic fields, local heat generation, and hot carrier excitation that accompany plasmon resonances to incorporate molecular functionalities into engineered nanomaterials with a spatial control at the nanoscale. This review aims to provide a concise overview of the main plasmon-mediated surface functionalization strategies developed so far and explains how it renews the toolbox of surface chemistry approaches. Plasmon-mediated surface functionalization appears to offer an unprecedented fast and cheap, large scale, “bottom-up” approach to trigger site-selective surface functionalization and place molecules/nanomaterials into highly reactive regions (reactive spots) or high electromagnetic field regions (hot spots).

#### Graphical TOC :

