



**Figure 1.** (a) SEM images of samples processed with LA (1 pulse – 10 pulses, 248 nm LA) under various applied fluences (i – viii), including the as grown sample (ix). (b) The effect of LA on the optical reflectivity spectra of a 10 nm Ag thin film under various applied fluences. The spectra of the as grown is shown with dashed line for comparison. (c) Surface coverage of the nanoparticles in relation to the particle diameter for all the cases of (a). (d) Critical nanoparticle diameter (the diameter value under which every particle remains practically cold during the UV LA process; hence these particles cannot be further manipulated upon irradiation) as a function of applied laser fluence. The inset shows an optical microscopy image of the “Marie Curie Actions” logo produced by projection mask. Each colour represents a different UV LA fluence. (e) A digital photo of a grid of LA spots of varying fluence (x-axis) and number of pulses (y-axis) produced on a 10 nm Ag thin film. (f) Contour plot of the dominant LSPR maximum acquired from optical reflectivity spectra from each spot of (e) (in the case of bimodal responses the maximum reflectivity response has been reported).