Supporting information

# Magnetic tuning of SERS hot spots in polymer-coated magnetic-plasmonic iron-silver nanoparticles

Stefano Scaramuzza,[1] Stefano Polizzi,[2] Vincenzo Amendola[1,*]

[1] Department of Chemical Sciences, University of Padova, via Marzolo 1, I-35131 Padova, Italy

[2] Department of Molecular Sciences and Nanosystems & Centro di Microscopia Elettronica "G. Stevanato", Università Cà Foscari Venezia, via Torino 155/b, I-30172 Venezia-Mestre, Italy
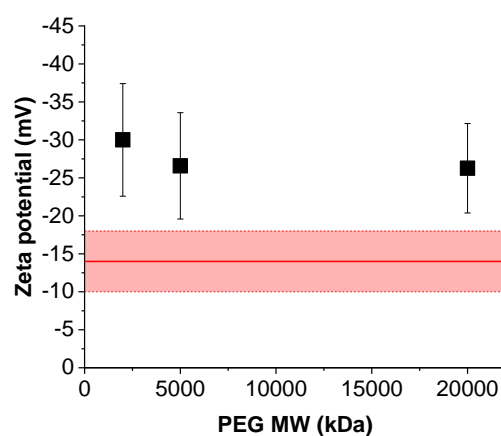
* correspondence: vincenzo.amendola@unipd.it
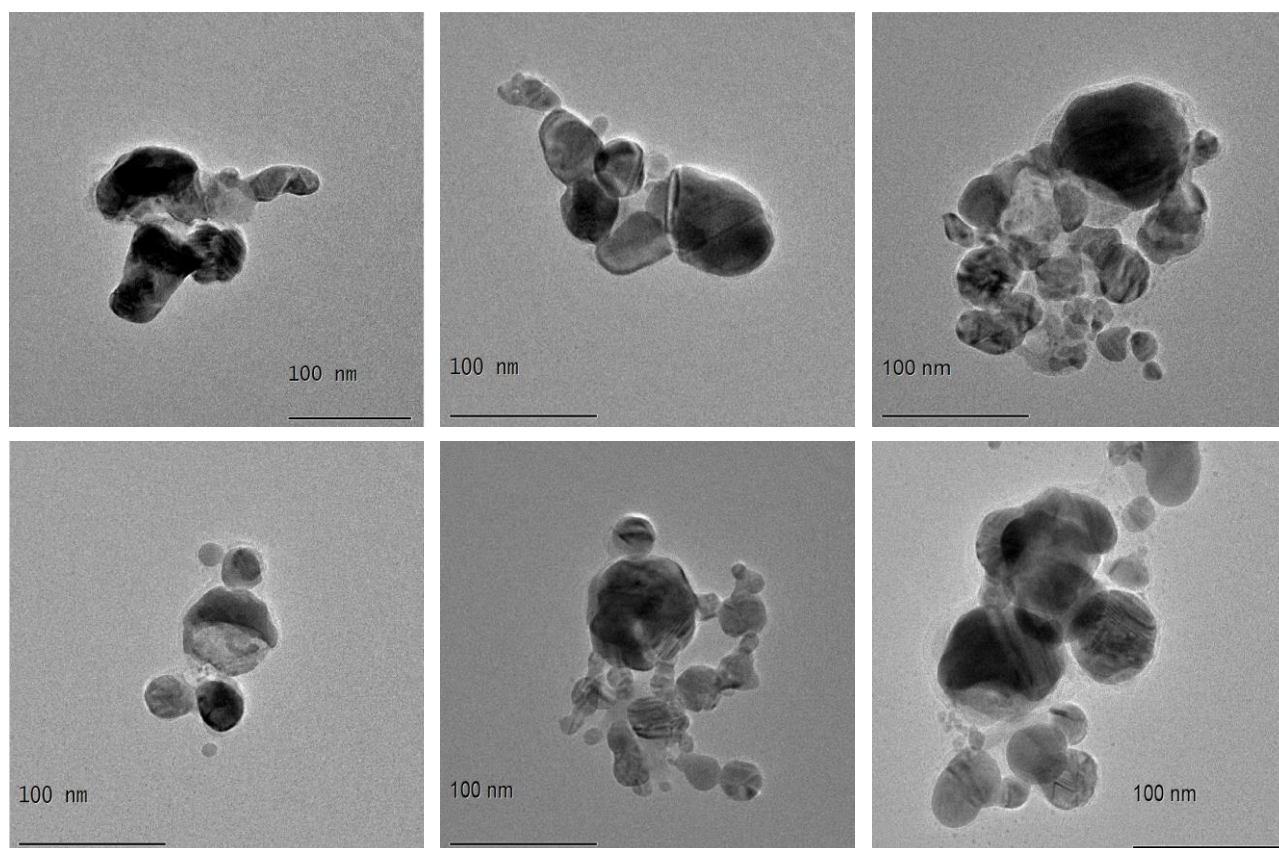
Figure S1. Representative TEM images of Ag-Fe NPs.
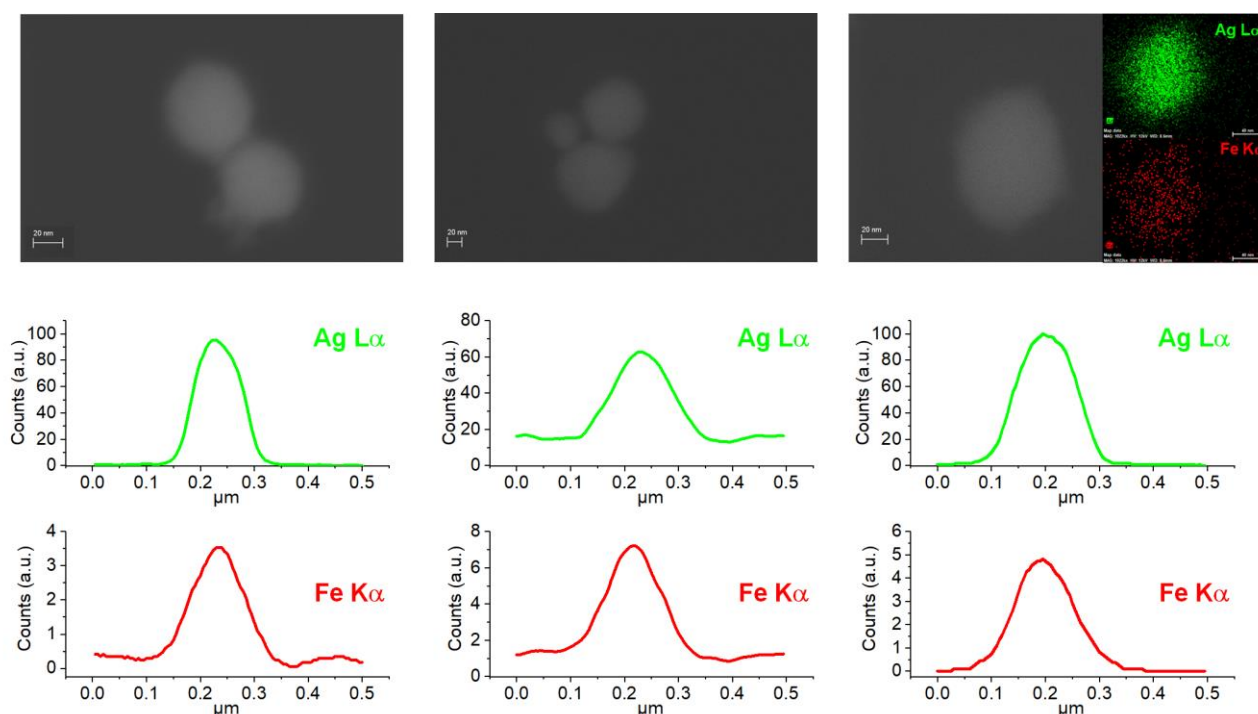
Figure S2. Representative SEM images of Ag-Fe NPs and EDS linescans and bidimensional map showing spatial overlap of Ag L line and Fe K line in all cases.

Figure S3. Z-potential values versus PEG molecular weight (black dots). Error bars represent the standard deviation on the Z-potential value measured by the instrument, while standard deviation over repeated measurements was of the order of 1 mV. Red line and shadowed red bar represent, respectively, Z-potential and standard deviation of uncoated Ag-Fe NPs.
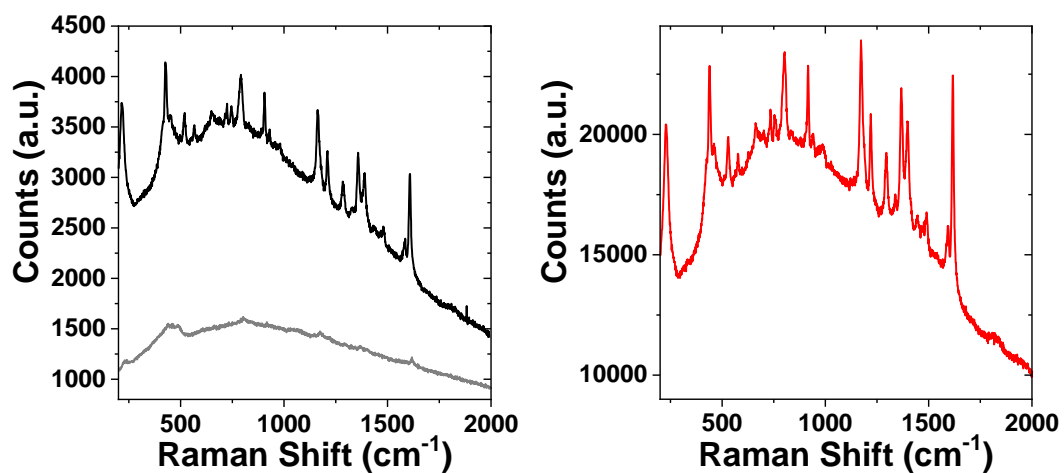
Figure S4. Magnification of the Raman spectra of the Ag-Fe NPs dispersion in a solution 8.3 nM of MG before ("H off", black line) and after ("H on", red line) magnetic focusing. The reference spectrum collected on a MG solution with same concentration is also shown (grey line).