

## Electronic Supplementary Information

# **Au@ZnO hybrid nanostructures: correlation between morphology and optical response**

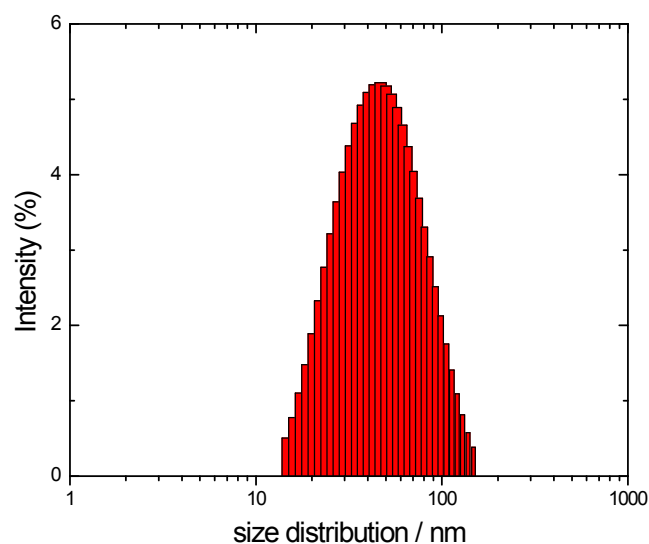
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**Figure S1.** Intensity size distribution of unmodified Au NPs suspensions obtained by photo correlation spectroscopy.

#### **Estimation of the mean crystallite size**

The mean crystallite size of Au and ZnO materials was obtained by applying the Scherrer equation:

$$L = \frac{K \lambda}{FWHM \cos(\theta)},$$

where FWHM stands for the half width at half maximum of a certain diffraction peak in radians and L stands for the mean coherence length perpendicular to a given plane and. K stands for a dimensionless shape factor (the value 0.94 characteristic of spherical shape was employed in the current work),  $\lambda$  stands for the X-ray wavelength and  $\theta$  is the Bragg angle.