Supporting information

Au-Covered Hollow Urchin-like ZnO Nanostructures for Surface-

Enhanced Raman Scattering Sensing

Octavio Graniel¹, Igor Iatsunskyi², Emerson Coy², Christophe Humbert³, Grégory Barbillon⁴, Michel Thierry⁵, David Maurin⁵, Sébastien Balme¹, Philippe Miele^{1,6}, and Mikhael Bechelany^{*1}

¹Institut Européen des Membranes (IEM), UMR-5635, Université de Montpellier, ENSCM, CNRS, Place Eugène Bataillon, 34095 Montpellier, France

²NanoBioMedical Centre, Adam Mickiewicz University, 3 Wszechnicy Piastowskiej str., 61-614, Poznan, Poland

³ Univ. Paris Sud, Université Paris Saclay, Laboratoire de Chimie Physique, CNRS, Bâtiment 201 P2, 91405 Orsay, France

⁴EPF-Ecole d'Ingénieurs, 3 bis rue Lakanal, 92330 Sceaux, France

⁵Laboratoire Charles Coulomb (L2C), Université de Montpellier, CNRS, Montpellier, France

⁶Institut Universitaire de France (IUF), MESRI, 1 rue Descartes, 75231 Paris, France

* Corresponding author: mikhael.bechelany@umontpellier.fr



Figure S1. SEM micrographs of urchin-like ZnO structures covered by a gold layer deposited by e-gun evaporation with thicknesses of a) 10 nm and b) 50 nm.



Figure S2. TEM image of an Au-covered ZnO urchin-like structures. The cavity has a reduced contrast and a shell with a uniform dark gray color.



Figure S3. XRD patterns of ITO, urchin-like ZnO, and Au-covered urchin-like ZnO structures.



Figure S4. Raman spectrum of thiophenol in ethanol recorded at the excitation wavelength of 785 nm, where the four Raman peaks studied here are displayed. The other peaks correspond either to thiophenol or ethanol.