Electronic Supplementary Material (ESI) for New Journal of Chemistry.

Supplementary Information:

Bioanodes containing Catalysts from Onion Waste and *Bacillus subtilis* for Energy Generation from Pharmaceutical Wastewater in a Microbial Fuel Cell

O.J. Duarte-Urbina[1], F.J. Rodríguez-Varela[1,*], F. Fernández-Luqueño[1], G. Vargas-Gutiérrez[1], M.E. Sánchez-Castro[1], B. Escobar-Morales[2], I.L. Alonso-Lemus[3]

[1] Sustentabilidad de los Recursos Naturales y Energía, Cinvestav Unidad Saltillo, Av. Industria Metalúrgica 1062, Parque Industrial Ramos Arizpe, C.P. 25900, Ramos Arizpe, Coahuila, México.

[2] CONACyT, Centro de Investigación Científica de Yucatán, Unidad de Energía Renovable, Calle 43 No. 130 Col. Chuburná de Hidalgo, C. P. 97200, Mérida, Yucatán, México.

[3] CONACyT, Sustentabilidad de los Recursos Naturales y Energía, Cinvestav Unidad Saltillo.

*Corresponding author: javier.varela@cinvestav.edu.mx

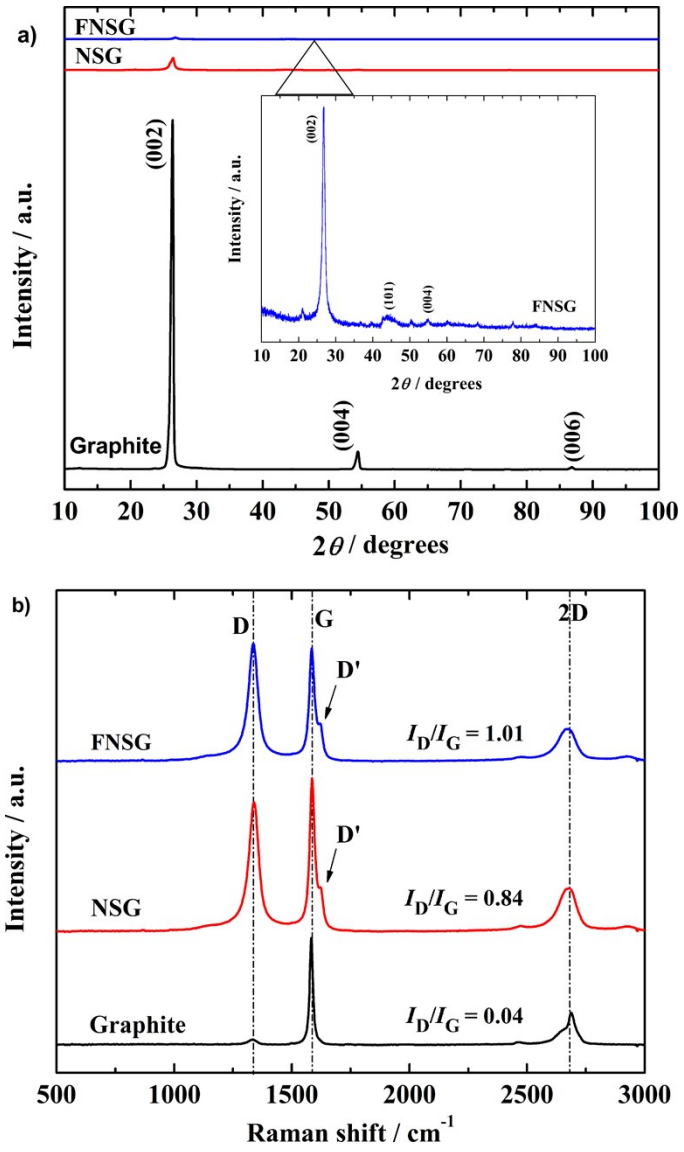

Figure S1. Structural properties of graphite, NSG and FNSG: a) XRD patterns and b) Raman spectra.

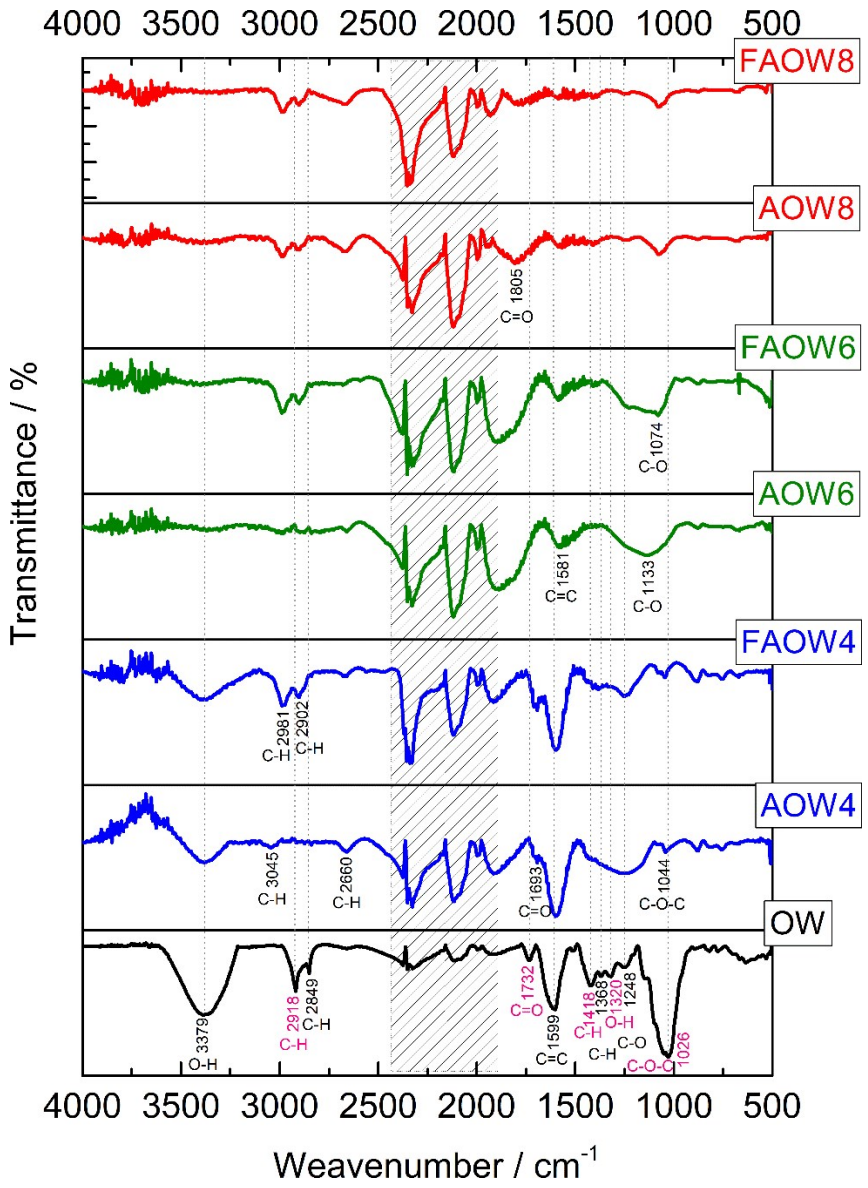

Figure S2. FTIR spectra of OW, and the activated and functionalized series of catalysts obtained from this source of biomass. The patterned rectangle highlights bands attributed to the ATR.

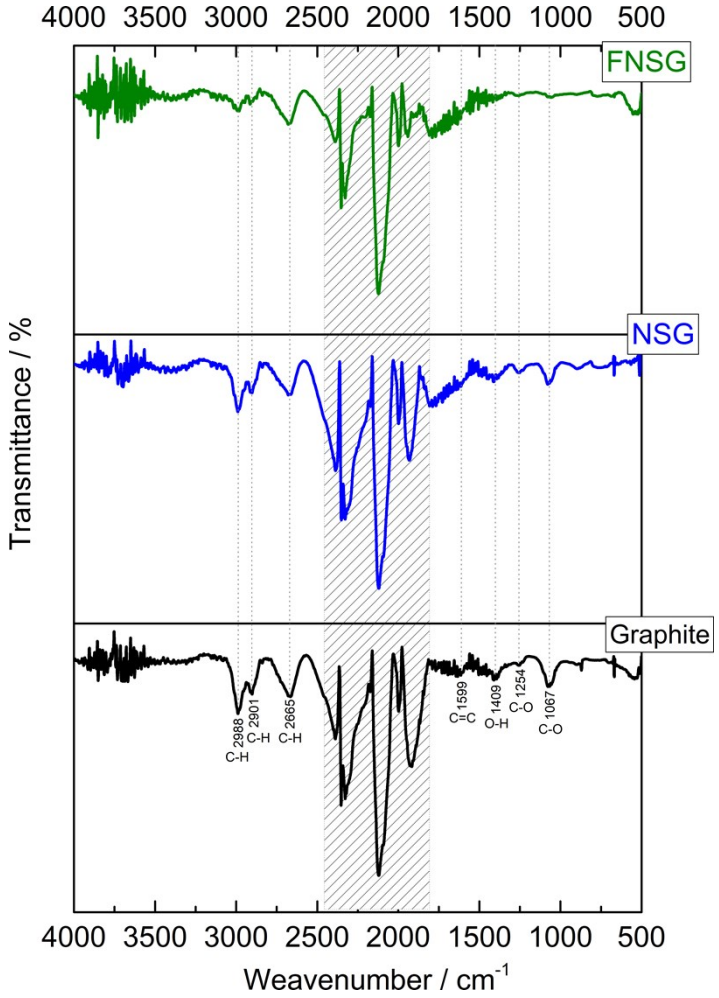

Figure S3. FTIR spectra of Graphite, NSG and FNSG. The patterned rectangle highlights bands attributed to the ATR.

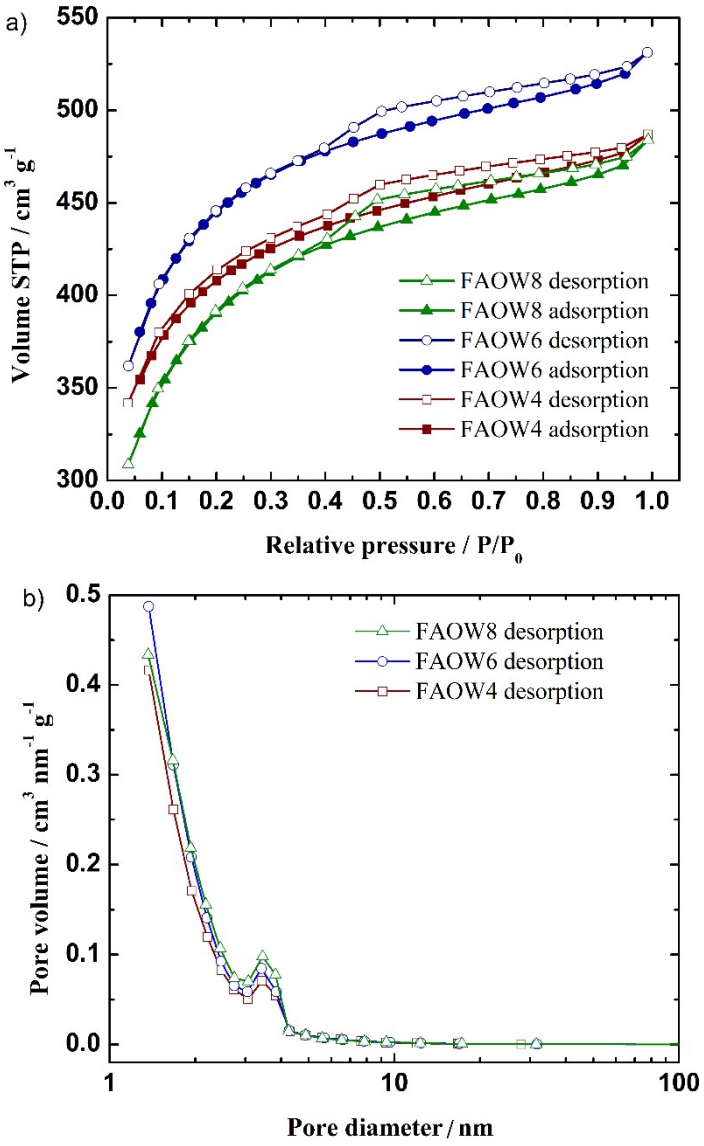

Figure S4. Adsorption isotherms a) and pore size distribution b) of the FAOW series of catalysts.

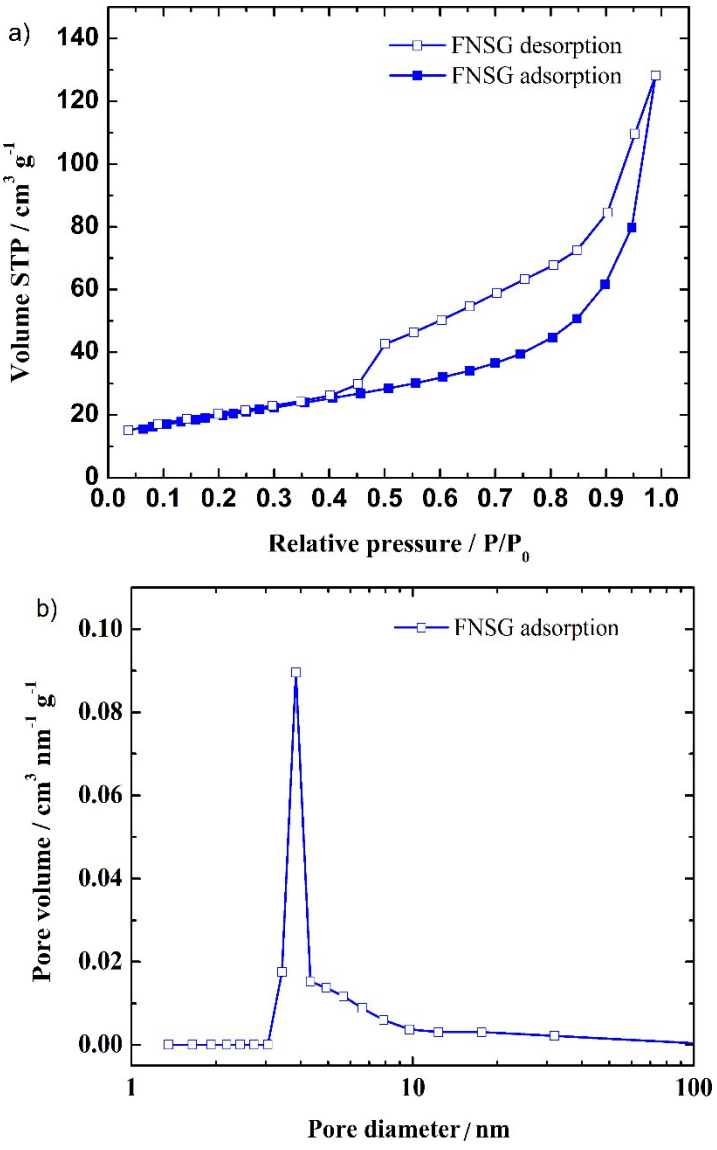

Figure S5. Adsorption isotherms a) and pore size distribution b) of the FNSG catalyst.

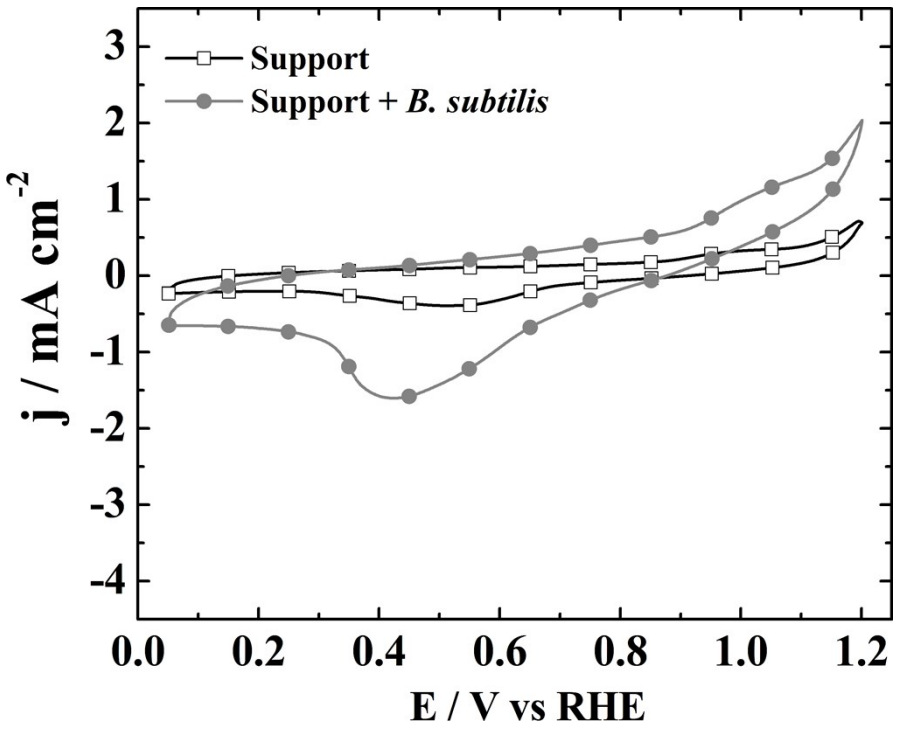

Figure S6. CVs of Support and Support with biofilm of *B. subtilis*. Electrolyte: PWW. Scan rate: 20 mV s^{-1}.