Supplementary information

Antibacterial and Photocatalytic Coatings based on Cu-doped ZnO Nanoparticles into Microcellulose Matrix

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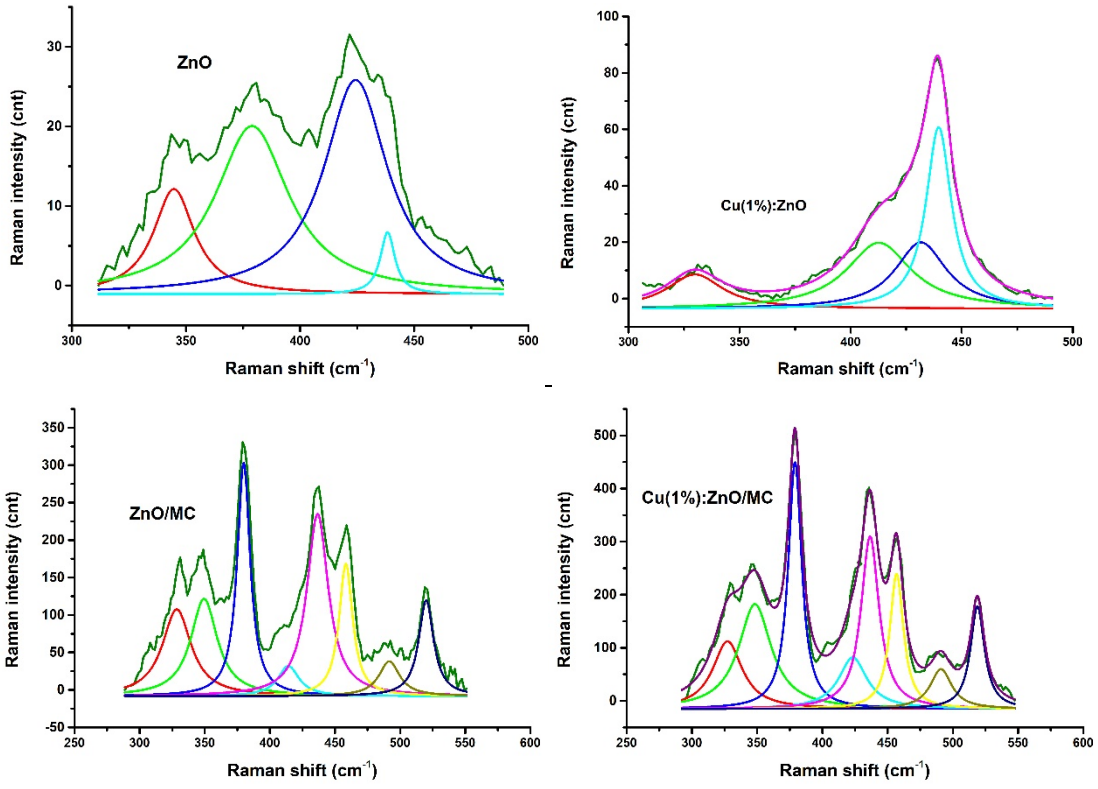


Figure 1. Representative examples of Raman spectra deconvolution for different samples: ZnO, Cu doped ZnO, ZnO/MC and Cu(1%):ZnO/MC

Table S1. S_{BET} (Brunauer-Emmett-Teller) values of the investigated oxide and hybrid NPs

Sample	**S_{BET} (m^2/g)**
ZnO NPs	2.8
Cu (1 at.%):ZnO NPs	6.4
ZnO/MC NPs	3.6
Cu (0.1 at.%):ZnO/MC NPs	9.8
Cu (0.5 at.%):ZnO/MC NPs	7.3
Cu (1 at.%):ZnO/MC NPs	4.3

Table S2. ATR-FTIR frequencies characteristic of the MC and hybrid (ZnO/MC, Cu (0.1%):ZnO/MC, Cu(0.5%):ZnO/MC and Cu (1%):ZnO/MC) NPs

Functional group	**MC**	**ZnO/MC**	**Cu:ZnO/MC-1**	**Cu:ZnO/MC-2**	**Cu:ZnO/MC-3**
	Wavenumber (cm^{-1})				
	436.20		**432.90**		
ZnO	**559.20**			**509.73**	**509.73**
		829.45	829.53	829.96	829.96
C-OH	896.96		885.68	885.23	885.23
		947.12	947.73	946.76	946.76
C-O-C	**1028.67**	**1092.05**	**1089.90**	**1089.20**	**1089.20**
	1055.15				
	1157.87				
		1249.31	1249.49	1249.50	1249.50
	1315.63	**1349.20**	**1348.77**	**1300.07**	**1300.07**
C-OH; CH_2		1453.83	1454.27	1348.85	1348.85
O-H		1621.89	1644.17	1454.56	1454.56
		1719.22	1718.60	1645.91	1645.91
	2323.41				
C-H	**2886.81**	**2874.30**	**2872.19**	**2872.71**	**2872.71**
O-H	**3330.60**	**3415.35**	**3408.70**	**3409.45**	**3409.45**