Electronic Supplementary Information

Journal: New journal of chemistry

High Photodegradation and Antibacterial Activity of BN-Ag/TiO_2 Composite Nanofibers Under Visible Light

Maryline Nasr,[1,2] Laurence Soussan,[1] Roman Viter,[3] Cynthia Eid,[2] Roland Habchi,[2] Philippe Miele[1,4] and Mikhael Bechelany*[1]

[1]Institut Européen des Membranes IEM, UMR-5635, Université de Montpellier, ENSCM, CNRS, Place Eugène Bataillon, F-34095 Montpellier Cedex 5, France

[2]EC2M, Faculty of Sciences 2, campus Pierre Gemayel, Fanar, Lebanese University, 90239 Lebanon

[3] Institute of Atomic Physics and Spectroscopy, University of Latvia, 19 Raina Blvd., LV 1586 Riga, Latvia

[4]Institut Universitaire de France (IUF)

* Corresponding author: mikhael.bechelany@umontpellier.fr, Phone: +33467149167, Fax: +33467149119

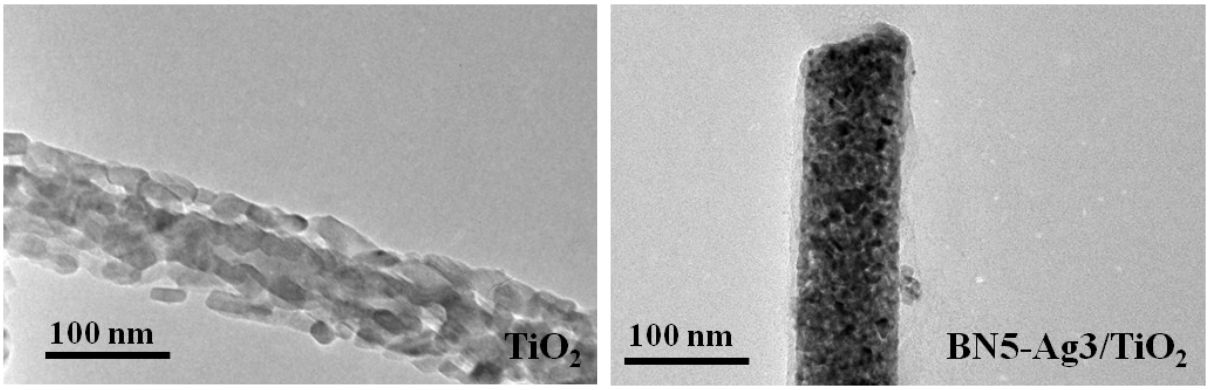

Figure S1. Transmission electron microscopy images of TiO_2 nanofibers and BN5-Ag3/TiO_2 annealed composite nanofibers under air for 4h at 500°C.

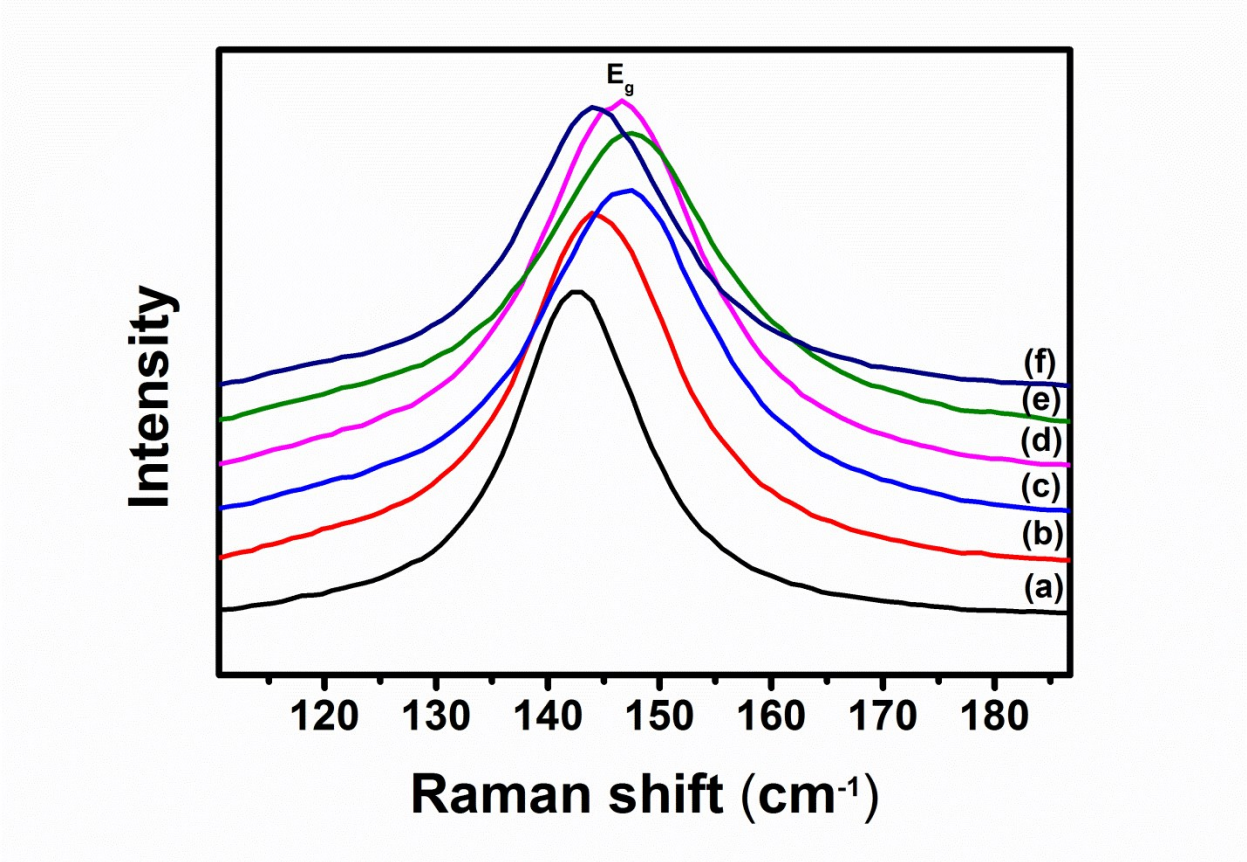

Figure S2. Raman Shift of a) TiO_2, (b) Ag0.5/TiO_2, (c) Ag1.5/TiO_2, (d) Ag3/TiO_2, (e) BN3-Ag3/TiO_2 and (f) BN5-Ag3/TiO_2 annealed composite nanofibers in air for 4h at 500°C

Table S1. Comparison of the photocatalytic activity of different Ag/TiO_2 nanocomposites

Photocatalysts	Photocatalyst concentration in dye solution (g/L)	Irradiation light source	Time (min)	Degradation efficiency (%)	Ref.
Ag(NPs) /TiO_2-P25 composite	0.5	Visible (125 W)	180	86	[55]
Ag/TiO_2 nanocomposites	–	Visible (500 W)	360	80	[56]
Ag/TiO_2 Composite NFs	0.1	UV (1000 W)	20	100	[14]
Ag/TiO_2 nanowires	0.6	UV (150 W)	80	100	[18]
Ag/TiO_2 nanotubes	1	Visible (500 W)	240	100	[54]
Ag(NPs)/TiO_2 nanofibers	1	UV (125 W)	60	98	[53]
Ag(NPs)/TiO_2 nanofibers	1	Visible (150 W)	120	54	[53]
Ag-AgBr(NPs)/TiO_2 nanofibers	1	Visible (150 W)	300	92	[47]
BN5-Ag3/TiO_2 composite NFs	0.4	Visible (150 W)	80	98	This work