*materials*

MDPI

*Supplementary Materials*

# Hybrid $TiO_2$–Polyaniline Photocatalysts and their Application in Building Gypsum Plasters

**Agnieszka Sulowska [1,*], Izabela Wysocka [1], Daniel Pelczarski [2], Jakub Karczewski [3] and Anna Zielińska-Jurek [1,*]**

[1] Department of Process Engineering and Chemical Technology, Faculty of Chemistry, Gdansk University of Technology, 80-232 Gdansk, Poland; izabela.wysocka@pg.edu.pl
[2] Department of Physics of Electronic Phenomena, Faculty of Applied Physics and Mathematics, Gdansk University of Technology, 80-232 Gdansk, Poland; daniel.pelczarski@pg.edu.pl
[3] Department of Solid State Physics, Faculty of Applied Physics and Mathematics, Gdansk University of Technology, 80-232 Gdansk, Poland; jakub.karczewski@pg.edu.pl
* Correspondence: sulowska.as@gmail.com (A.S.); annjurek@pg.edu.pl (A.Z.-J.)

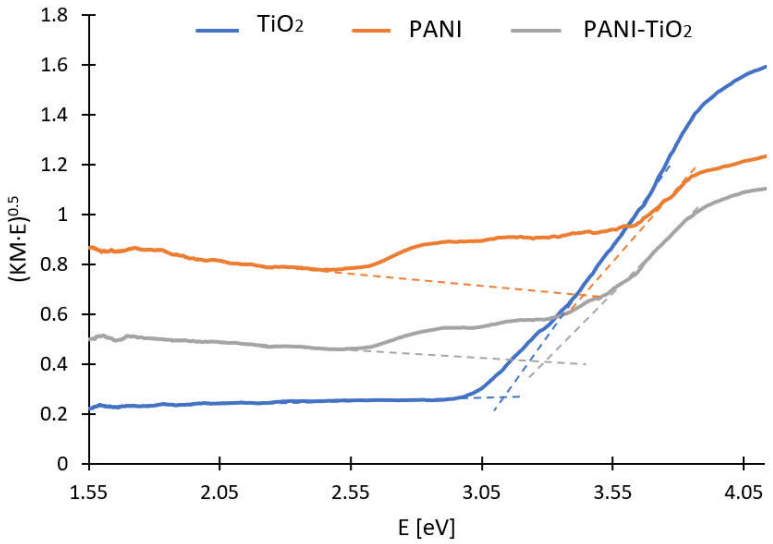
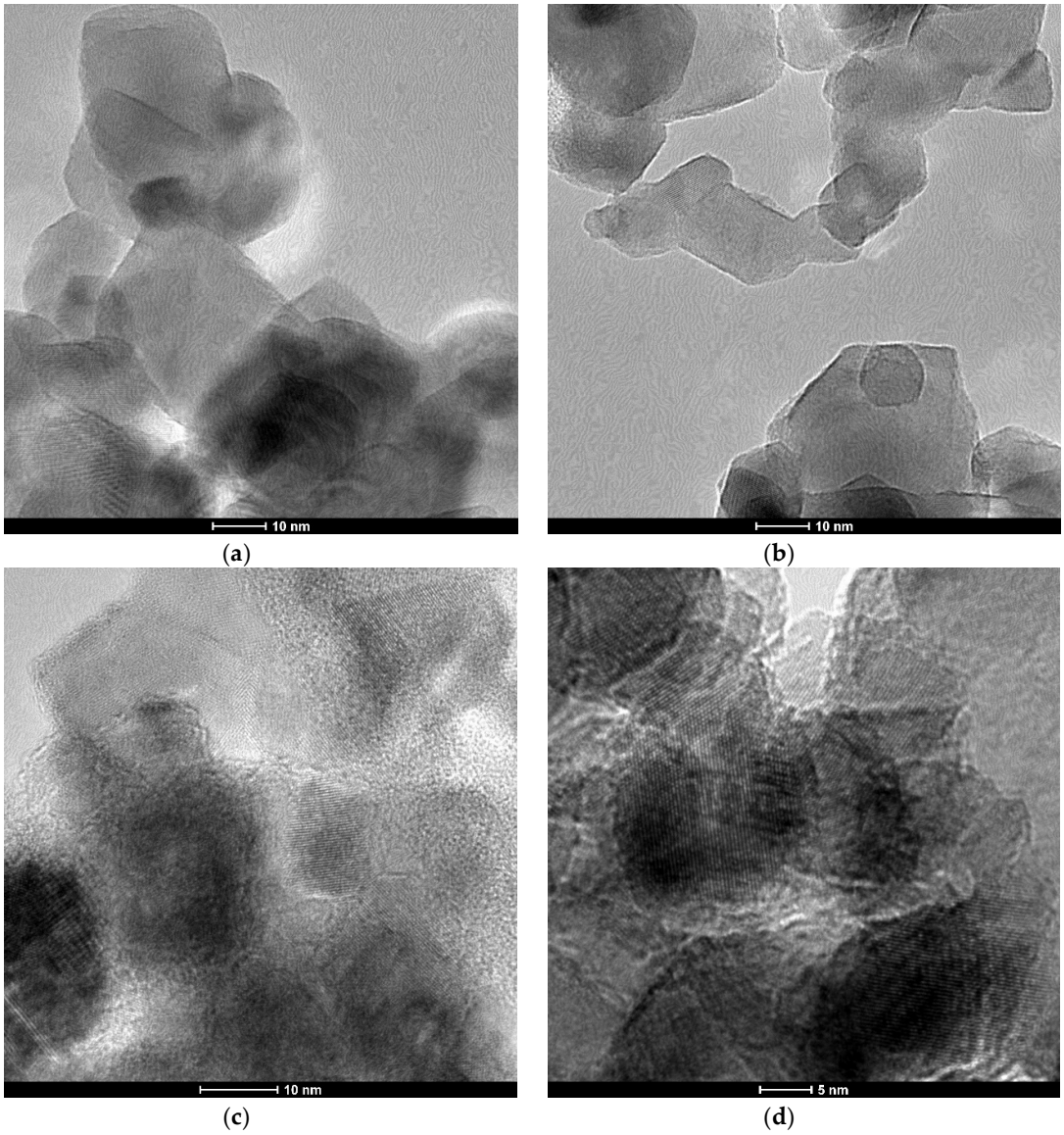



**Figure S1.** The Tauc plots for $TiO_2$, PANI and PANI-$TiO_2$.




(**a**) (**b**)

(**c**) (**d**)

**Figure 2. a–d**: TEM microscopic images of PANI/$TiO_2$ composite.

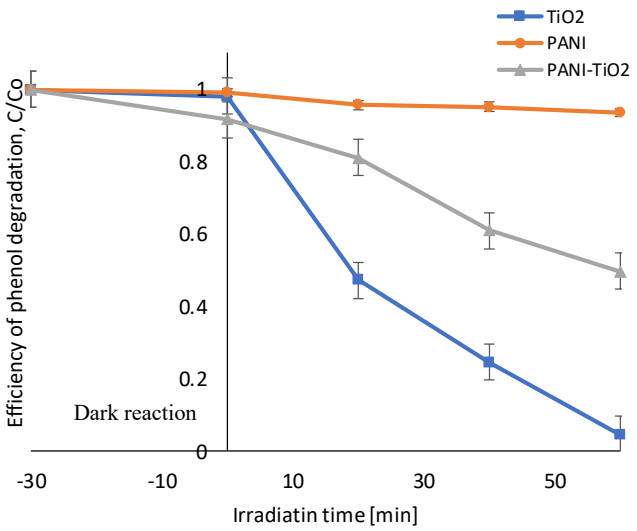



**Figure S3.** Photocatalytic activity of $TiO_2$, PANI and PANI-$TiO_2$ in reaction of phenol degradation under UV-Vis light irradiation.

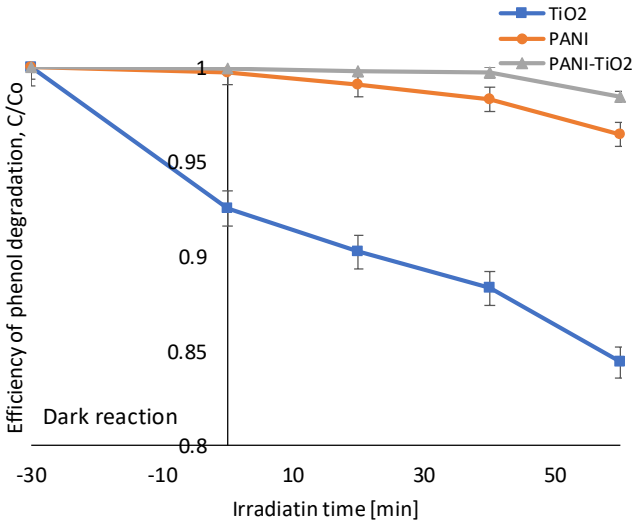



**Figure S4.** Photocatalytic activity of $TiO_2$, PANI and PANI-$TiO_2$ in reaction of phenol degradation under Vis > 400 nm light irradiation.

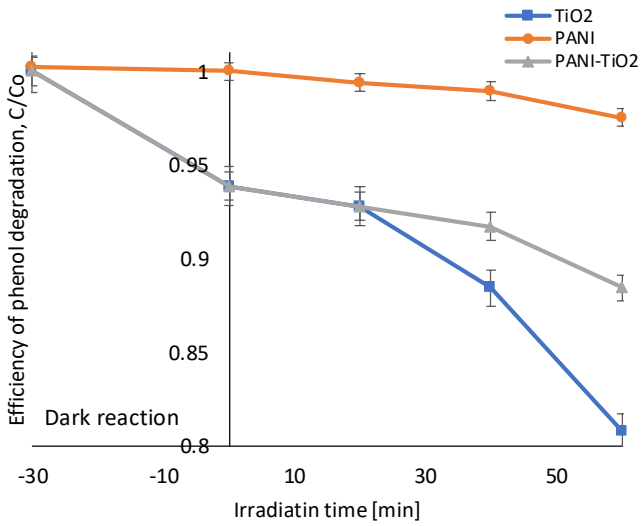



**Figure S5.** Photocatalytic activity of $TiO_2$, PANI and PANI-$TiO_2$ in reaction of phenol degradation under Vis > 420 nm light irradiation.

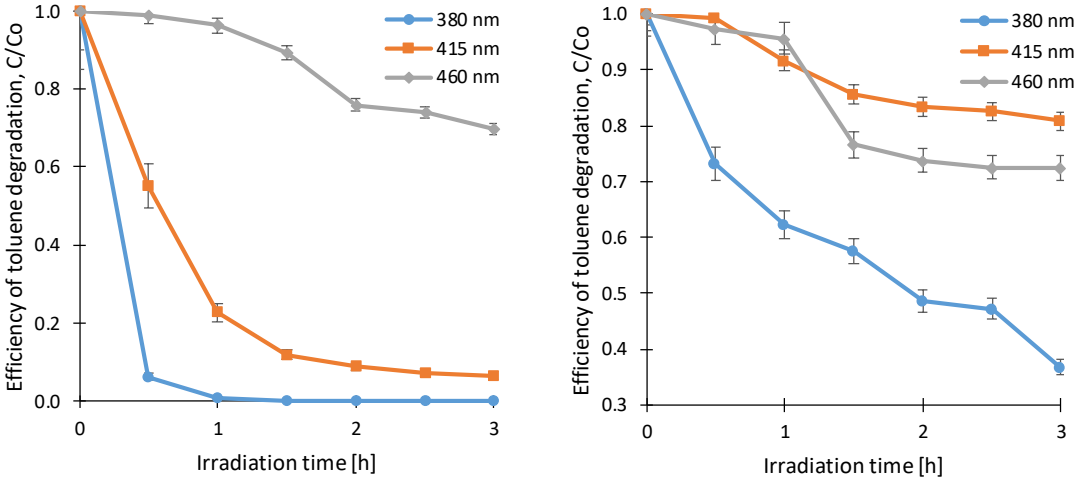



**Figure S6.** Toluene degradation in time. The effect of irradiation source with maximum wavelength emission at 380 nm, 415 nm and 460 nm for **a**) $TiO_2$ and **b**) PANI-$TiO_2$ hybrid nanocomposite.

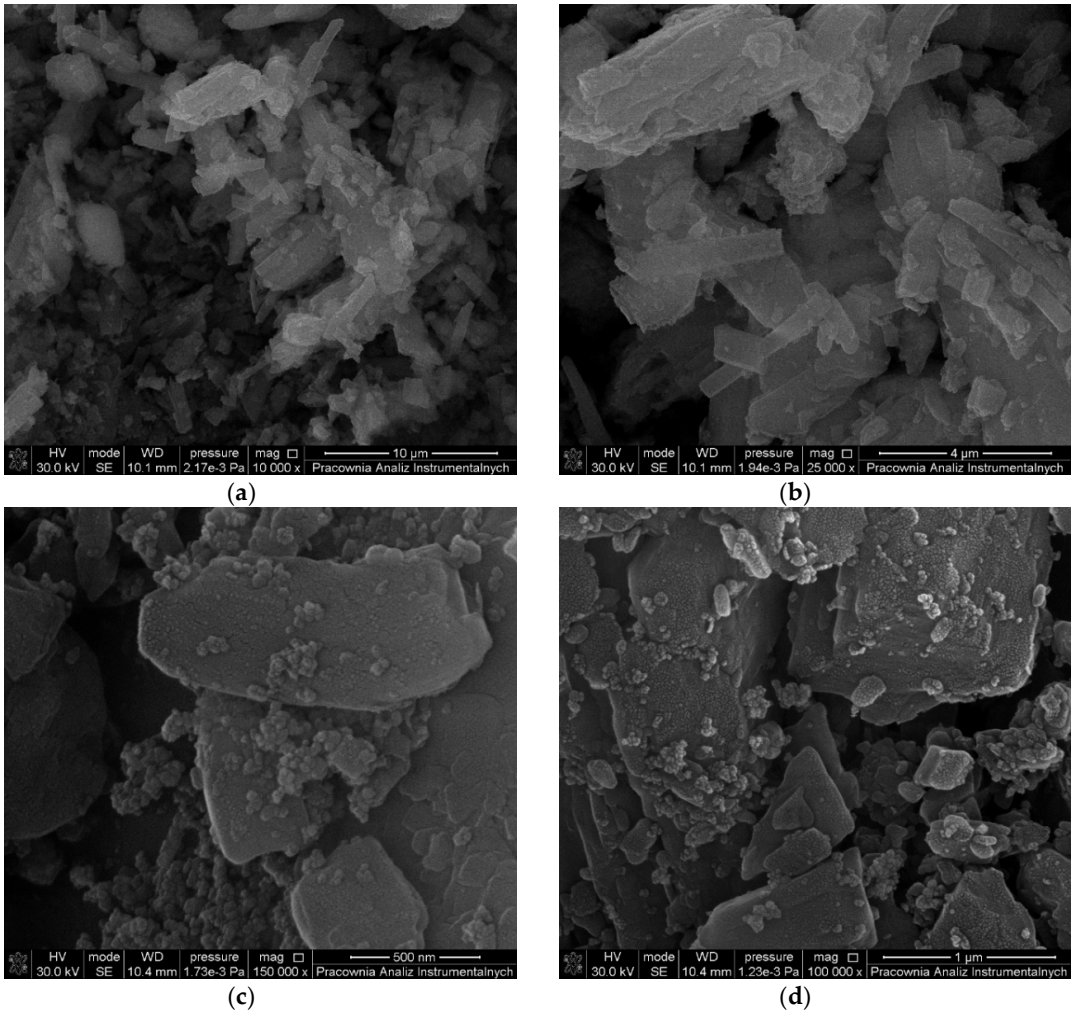



**Figure 7. a–d:** SEM images of gypsum surface modified with PANI-$TiO_2$.

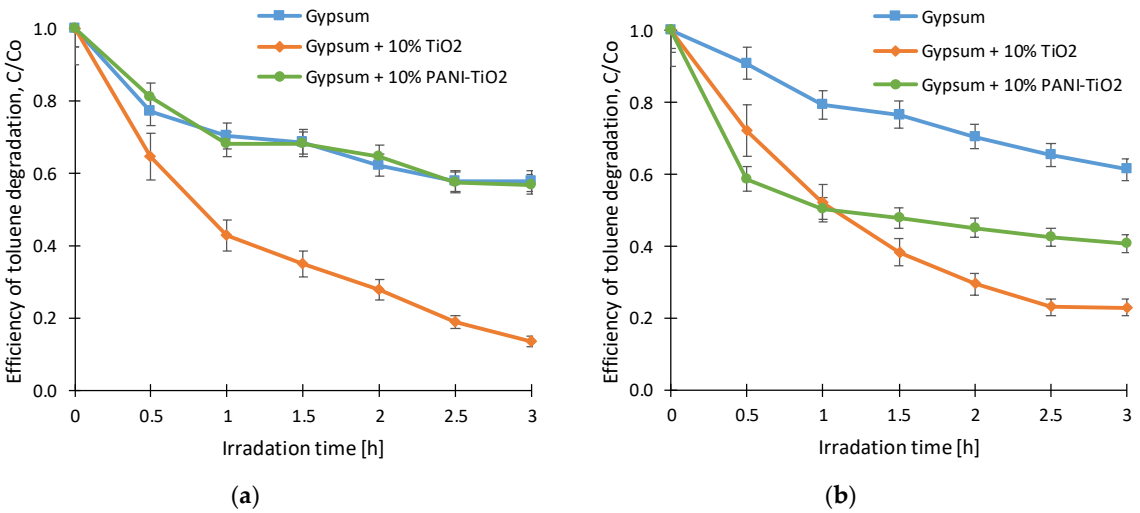



**Figure S8.** Toluene degradation in time for gypsum, gypsum + 10% $TiO_2$, and gypsum + 10% PANI-$TiO_2$ using **a**) LEDs with a maximum wavelength emission at 380 nm, **b**) LEDs irradiation source with a maximum wavelength emission at 460 nm.