SUPPLEMENTARY MATERIAL

Degradation of meropenem by heterogeneous photocatalysis using TiO_2/fiberglass substrates

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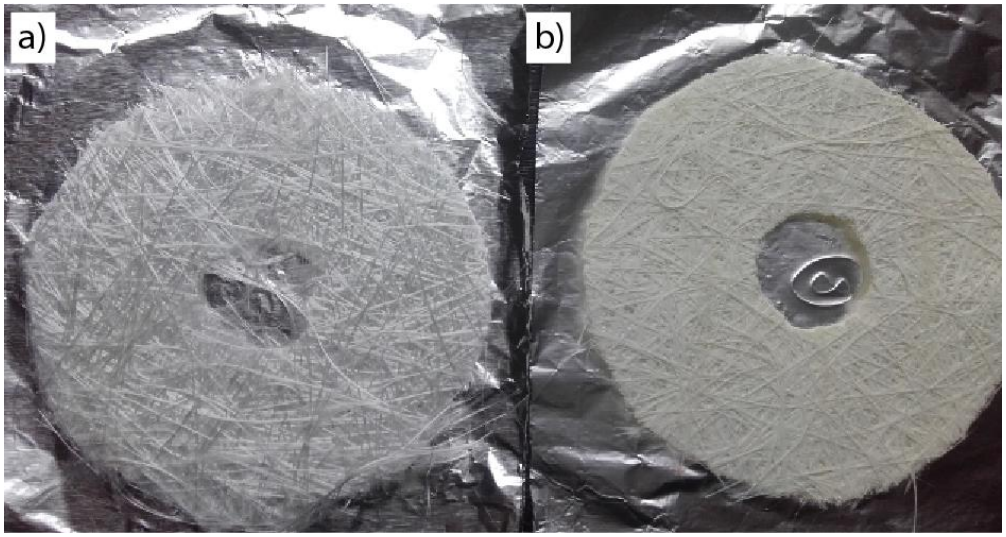

Figure S1. a) Fiberglass disc before immobilization b) TiO_2/fiberglass substrate

Average content of TiO_2 immobilized on the fiberglass substrates

The average content of TiO_2 on each substrate was determined by a gravimetric analysis. For this, the initial weight of the cleaned fiberglass discs was measured. After the immobilization procedure, the plates were dried at 100 °C for 24 h, after this step, the weight of the substrates was measured again. For the calculation of the content of TiO_2, it was assumed that TiO_2, silicon and ethanol were homogeneously distributed in the suspension during the immobilization. As a result, the silicon/TiO_2 mass ratio right after the immobilizations was 3.0. Nevertheless, after the drying process, the silicon/TiO_2 mass ratio changed because of the loss of volatile compounds from the silicon mixture. For this reason, a correction was introduced considering a silicon $_{(dry)}$/silicon $_{(wet)}$ mass ratio of 0.206 ± 0.02 determined in a separate gravimetric analysis. The area of the substrates (47.1 cm^2) was calculated considering the internal and external diameters of the discs. Gravimetric data was measured for 115 substrates, and the average results are presented on Table S1.

Table S1. Average content of TiO_2 immobilized on the fiberglass substrates

	Initial weight (g)	**Final weight (g)**	**TiO_2 and dry silicon immobilized (g)**	***TiO_2 immobilized (mg/cm^2)**
Average**	1.8857	2.0503	0.1645	2.1578
Standard deviation**	0.1573	0.1661	0.0253	0.3319

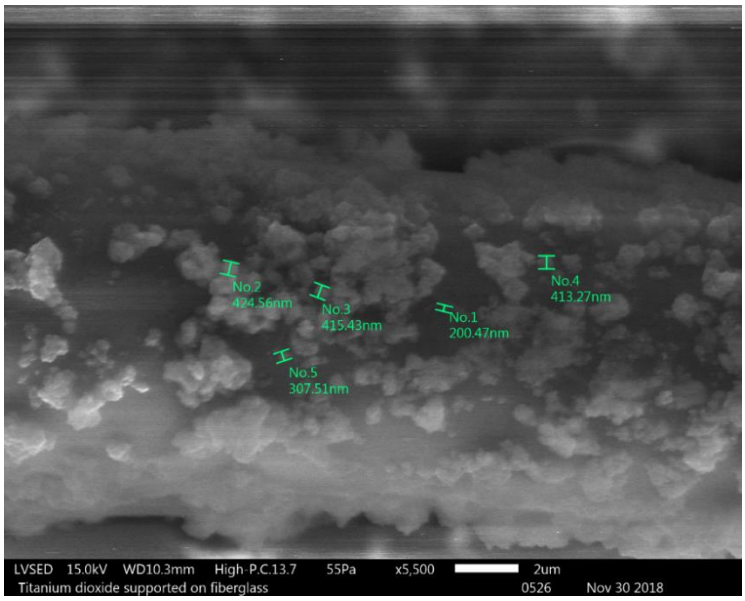

Figure S2. SEM images of the TiO_2/fiberglass substrate. The size of some agglomerates of TiO_2 immobilized on fiberglass is reported

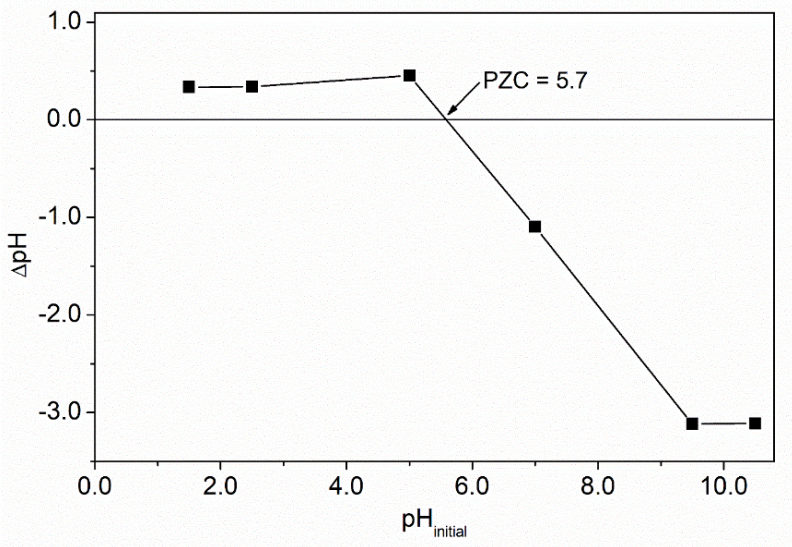

Figure S3. Point of zero charge of the TiO_2/fiberglass substrate

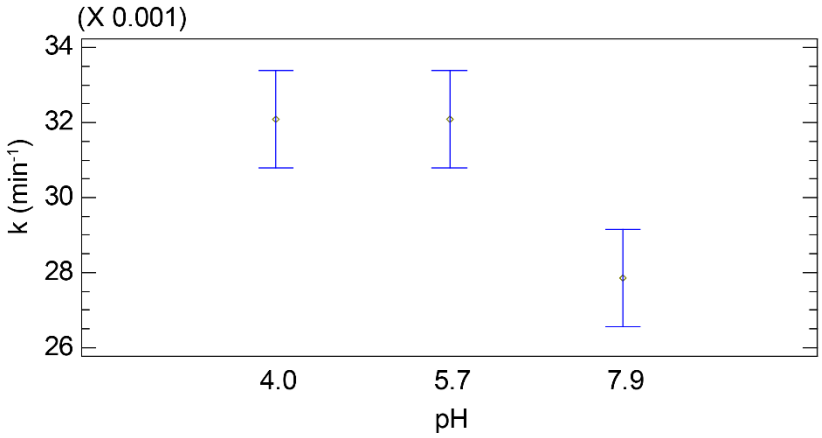

Figure S4. Statistical analysis of the effect of the pH value on the pseudo-first order rate constant of the photocatalytic degradation meropenem

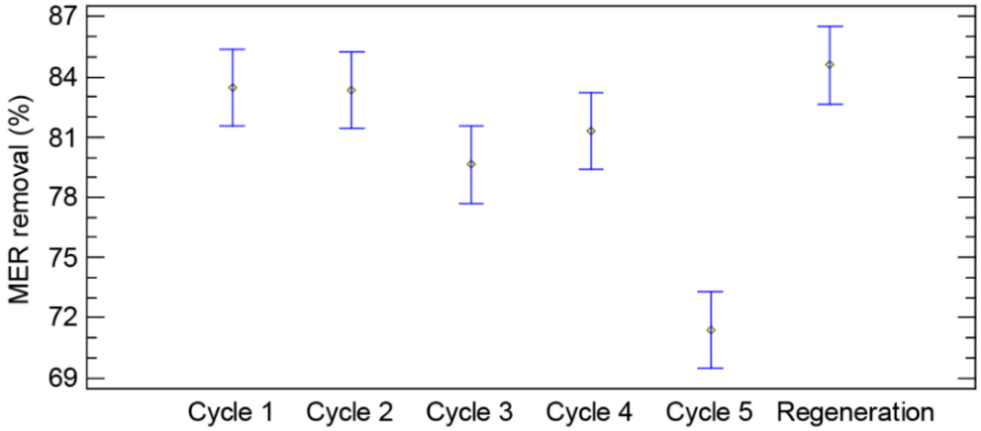

Figure S5. Statistical analysis of the effect of the reuse of the TiO_2/fiberglass substrate on the removal of MER after 60 min of reaction (pH = 5.7)