SUPPLEMENTARY MATERIAL

Degradation of meropenem by heterogeneous photocatalysis using TiO$_2$/fiberglass substrates

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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 immobilization 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)