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The "monkey business" with heterogeneous photocatalysts

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Numerous titania-based photocatalysts have been described in recent years and their photocatalytic activities have been examined with attempts to generalize achieved results. However, it could be misleading to use such kinetic data for drawing general conclusions. It is often claimed that to achieve an extraordinary photocatalytic material many structural parameters such as particle size, crystal phase, surface morphology, specific surface area, nanostructure order, may contribute. This is wrong - there are only random correlations.

In this study main misconceptions in the treatment of the heterogeneous photocatalytic data are summarized first. Then an illustrative case-study is reported. Finally the concept of dynamic active site is introduced as appropriate way to quantify correctly the essential parameter of the photocatalytic activity in the heterogeneous photocatalytic reaction.

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