The challenge of large-scale application of biomimetic photocatalytic water treatment

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Very limited studies on full-scale photocatalytic treatment of wastewater are available in the literature, fact that renders difficult the large-scale application in spite of numerous research articles on the application of heterogeneous photocatalysis.[1] On the other hand, biotemplating is an effective strategy to obtain morphology controllable materials with structural specialty, complexity, and related unique properties. Biotemplating is also readily available at low costs and on a large scale. [2]

This presentation will summarize the recent advances in the synthesis of nano/microstructures using biotemplates. Particularly, the design, assembling, and manufacturing of a few novel skid-mounted plug flow photocatalytic reactors will be reported. The applications in the treatment of hospital wastewater, lignite gasification wastewater, wastewater at the expressway service area, and hydropower stations will also presented. Finally, the future challenges and opportunities for photocatalytic wastewater treatment will be discussed.

Significance

At present, there are few reviews on the preparation of photocatalytic materials by biological templates and their practical applications. On the other hand, very limited studies on full-scale photocatalytic treatment of wastewater are available in the literature, fact that renders difficult the large-scale application in spite of numerous research articles. More importantly, this could be one of the first commercial photocatalytic reactors presented so far. It would be also expected that more people will be attracted to do further study about skid-mounted plug flow photocatalytic reactors treatment of wastewater.

References

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