

## Fe<sup>2+</sup>-glutamate intercalated montmorillonite used as photo-heterogeneous photo Fenton catalyst at neutral pH

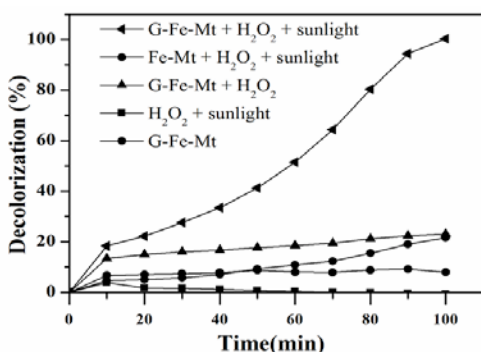
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### Catalytic Activity Comparison

The catalytic performance of the Fe<sup>2+</sup>-glutamate intercalated montmorillonite (G-Fe-Mt) and the comparison sample (Fe<sup>2+</sup>-montmorillonite, Fe-Mt) was evaluated by the degradation of reactive blue 19 (RB19) under sunlight using H<sub>2</sub>O<sub>2</sub> as oxidant. The whole reaction set-up was placed in sunlight (23°02'N, 113°24'E, Guangzhou, China) for a fixed period of daily between 11:30 a.m. - 14:30 p.m.



**Figure 1:** Removal of RB19 in different reaction conditions.

### Results and Discussion

It indicated that Fe-Mt has a low reactivity under sunlight irradiation while G-Fe-Mt has excellent ability of light utilization. The photocatalytic reaction of G-Fe-Mt is possibly attributed to electron transfer between glutamic acid organic ligands and irons in chelates. The chelation and the visible light responsiveness of glutamic acid produce a synergistic effect leading to greatly enhanced sunlight-Fenton reaction catalyzed by the heterogeneous G-Fe-Mt under neutral pH [1, 2].

[1] S. Navalon *et al.* (2010), *Appl. Catal. B-Environ.* **99**, 1-26. [2] Z. Huang *et al.* (2014), *RSC Adv.* **4**, 6500-6507.