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Self-Assembled ZnO/Ag Hollow Spheres for Effective Photocatalysis and Bacteriostasis

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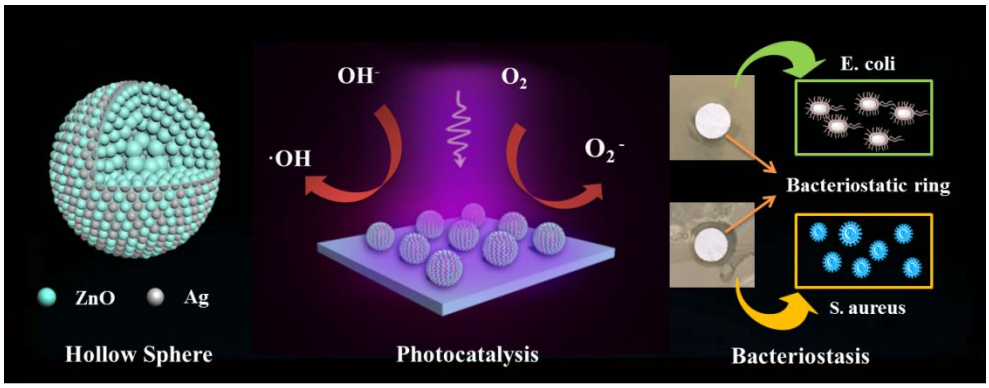
Graphical abstract



Highlights

1. ZnO hollow spheres were self-assembled without any template.
2. Hollow structure improved the light trapping for photocatalysis.
3. Ag nanoparticles were decorated in situ on ZnO by photochemical reaction.
4. ZnO/Ag hollow spheres could be realized effective bacteriostasis to animalcule.
5. Synergic enhancement mechanism of the multi-effects was analyzed.

Abstract:

Zinc oxide/silver hollow spheres (ZnO/Ag HSs) have been synthesized and employed as both photocatalyst and antimicrobial agent. They possess an efficient photocatalysis to various organic molecular dyes such as methylene blue (MB), methyl orange (MO), phenol