

## Photocatalytic microbial sterilization using nanostructured graphitic carbon nitride (g-CN)

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Polymeric graphitic carbon nitride (g-C<sub>3</sub>N<sub>4</sub>), which has an optical band gap of 2.7 eV, is the most stable allotrope of carbon nitride, and its potential applications for energy conversion, gas sensors, and solar cells have been reported. However, scarce efforts have been made to employ g-C<sub>3</sub>N<sub>4</sub> as the active material for photocatalytic microbial sterilization. We prepared a rod-type g-C<sub>3</sub>N<sub>4</sub> via self-assembly process. The as-prepared rod-type g-C<sub>3</sub>N<sub>4</sub> with a length of 10–20 μm showed enhanced photocatalytic activity [1]. We investigated the photocatalytic microbial sterilization of gram positive and gram negative bacteria, *Escherichia coli*, *Salmonella typhimurium*, and *Staphylococcus aureus*. The microorganisms were treated with g-C<sub>3</sub>N<sub>4</sub> (rod-type morphology) in 0.9% saline solution under visible light, and exhibited excellent photocatalytic sterilizing effect within 2 hours as compared to the reference sample (g-C<sub>3</sub>N<sub>4</sub> of no specific morphology).