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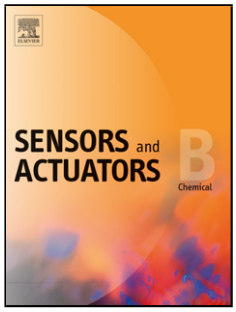

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N, P-doped carbon quantum dots as a fluorescent sensing platform for carbendazim detection based on fluorescence resonance energy transfer

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Highlight

- N, P-CQDs used in this sensing platform show strong green fluorescence and high fluorescence quantum field.
- This is the first report based on N, P-CQDs and Au NPs for carbendazim detection.
- Carbendazim detection based on this sensing platform have high sensitivity.
- This sensing platform showed excellent anti-interference capability for carbendazim.
- This sensing platform could serve as a good model for the design of new fluorescence-based FRET biosensors.

Abstract

In this work, a simple, sensitive and reliable fluorescence resonance energy transfer (FRET) sensing platform was established to determine carbendazim based on N, P-doped carbon quantum dots (N, P-CQDs) and gold nanoparticles (Au NPs). N, P-CQDs with strong green fluorescence were prepared via one-pot hydrothermal