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Calcium-doped fluorescent carbon nanoparticles: spontaneous thermal synthesis, pH-sensitive fluorescence off-on, and mechanism

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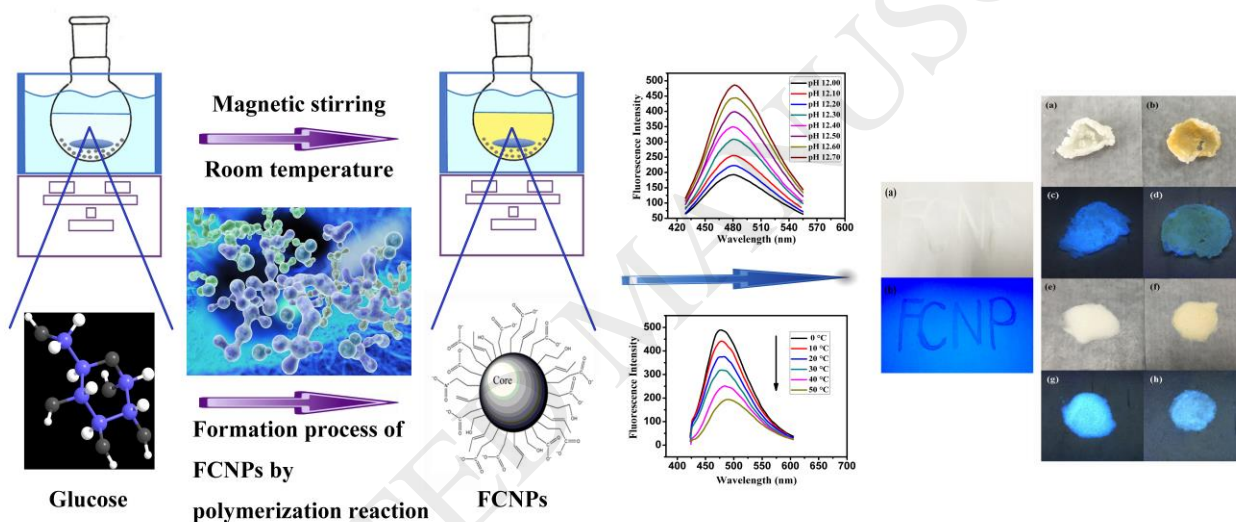
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Graphical Abstract:



Highlights

- Spontaneous thermal polymerization and carbonization route assisted by calcium oxide was proposed to product FCNPs.
- Effective fluorescent nanosensors for the pH and temperature were established.
- The formation mechanism dramatically influencing the nucleation and growth of FCNPs were meticulously discussed.

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