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Synthesis of Ag nanoparticle-decorated 2,4,6-tris(2-pyridyl)-1,3,5-triazine nanobelts and their application for H₂O₂ and glucose detection

Xiaoyun Qin, Wenbo Lu, Yonglan Luo, Guohui Chang, Abdullah M. Asiri, Abdulrahman O. Al-Youbi and Xuping Sun

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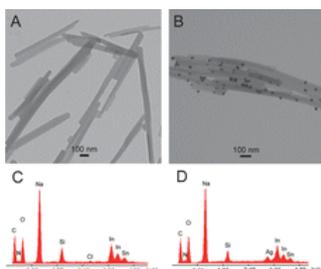
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The present paper reports on the first preparation of 2,4,6-tris(2-pyridyl)-1,3,5-triazine nanobelts (TPTNBs) by adjusting the pH value of the solution and the subsequent synthesis of Ag nanoparticle (AgNP)-decorated TPTNBs (AgNP-TPTNBs) by mixing an aqueous AgNO₃ solution with preformed TPTNBs without use of any external reducing agent. It is found that the resultant AgNP-TPTNBs exhibit notable catalytic performance for H₂O₂ reduction. A glucose biosensor was fabricated by immobilizing glucose oxidase (GOD) onto a AgNP-TPTNBs-modified glassy carbon electrode (GCE) for glucose detection. The constructed glucose sensor has a wide linear response range from 3 mM to 20 mM (*r*: 0.999) with a detection limit of 190 μM. It is further shown that this glucose biosensor can be used for glucose detection in human blood serum.

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Articles By

- Xiaoyun Qin
- Wenbo Lu
- Yonglan Luo
- Guohui Chang
- Abdullah M. Asiri
- Abdulrahman O. Al-Youbi
- Xuping Sun

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