

Electrochemical biosensor for glucose detection using zinc oxide nanotetrapods

Loan N.T., Quynh L.M., Dai N.X., Long N.N.

Faculty of Physics, Hanoi University of Science, Vietnam National University, 334 Nguyen Trai Road,
Thanh Xuan District, Hanoi, Viet Nam

Abstract: Wurtzite structural zinc oxide (ZnO) nanotetrapods were synthesised by a thermal evaporation method. These ZnO nanotetrapods were used for the construction of an electrochemical biosensor for detecting glucose. In the biosensor, the ZnO nanotetrapods acted as supporting materials for glucose oxidase (GO_x) enzyme loading because of the large surface area to volume ratio. The results indicated that the biosensor with the structure of [polystyrene mixed with ZnO powder/ GO_x /ZnO nanotetrapod powder/Au electrode] exhibited the lowest glucose detection limit (0.5 mM). These results demonstrate that zinc oxide nanostructures have potential applications in biosensors. Copyright © 2011 Inderscience Enterprises Ltd.

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Correspondence Address: Long, N. N.; Faculty of Physics, Hanoi University of Science, Vietnam National University, 334 Nguyen Trai Road, Thanh Xuan District, Hanoi, Viet Nam; email: longnn@vnu.edu.vn

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Authors with affiliations:

- Loan, N.T., Faculty of Physics, Hanoi University of Science, Vietnam National University, 334 Nguyen Trai Road, Thanh Xuan District, Hanoi, Viet Nam
- Quynh, L.M., Faculty of Physics, Hanoi University of Science, Vietnam National University, 334 Nguyen Trai Road, Thanh Xuan District, Hanoi, Viet Nam
- Dai, N.X., Faculty of Physics, Hanoi University of Science, Vietnam National University, 334 Nguyen Trai Road, Thanh Xuan District, Hanoi, Viet Nam
- Long, N.N., Faculty of Physics, Hanoi University of Science, Vietnam National University, 334 Nguyen Trai Road, Thanh Xuan District, Hanoi, Viet Nam

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