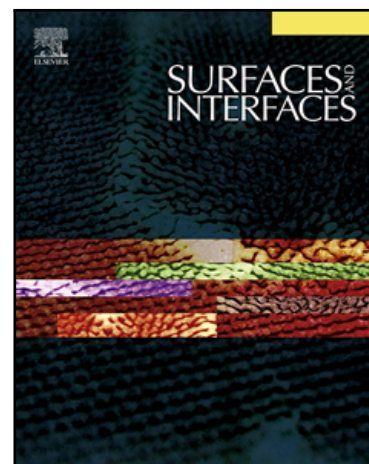


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Application of 3D gold nanotube ensembles in electrochemical sensing of ultra-trace Hg (II) in drinkable water

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Highlights

- Highly sensitive three dimensional gold nanotubes (3D GNT) were fabricated by gold electrodeposition inside polycarbonate template and then partially etching the template.
- The modified 3D GNT/glassy carbon (GC) electrode showed a lower resistance and a better electron transfer compared to unmodified GC electrode and a significant enhancement in response was observed towards $\text{Fe}^{2+}/\text{Fe}^{3+}$ redox couples.
- The performance of 3D GNT/GC electrode was examined in determination of Hg (II) in drinkable water samples. An excellent linearity over a wide range (0.1 nM-50 nM) and a sufficiently low detection limit of 0.06 nM were obtained for Hg (II) detection.

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