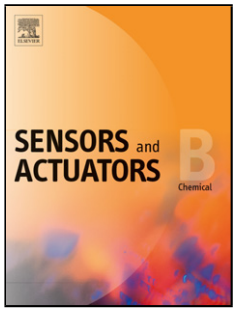

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In vivo "real-time" monitoring of glucose in the brain with an amperometric enzyme-based biosensor based on gold coated tungsten (W-Au) microelectrodes

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Highlights

- We developed and characterized W-Au based amperometric enzyme-based glucose biosensors.
- W-Au microelectrodes continuously monitored *in vitro*, changes in H_2O_2.
- Functionalization of W-Au microelectrodes with permselective membranes, enhanced its selectivity.
- The performance of W-Au based biosensors was dependent on enzyme loading and applied potential.
- W-Au/Nafion-PPD/GOx (0.6U/µL) polarized at 900 mV, was the most suitable design for implantation.
- W-Au based biosensors were able to accurately monitor, *in vivo* and in real-time, changes in brain glucose.