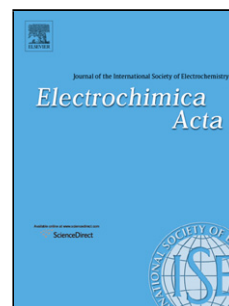


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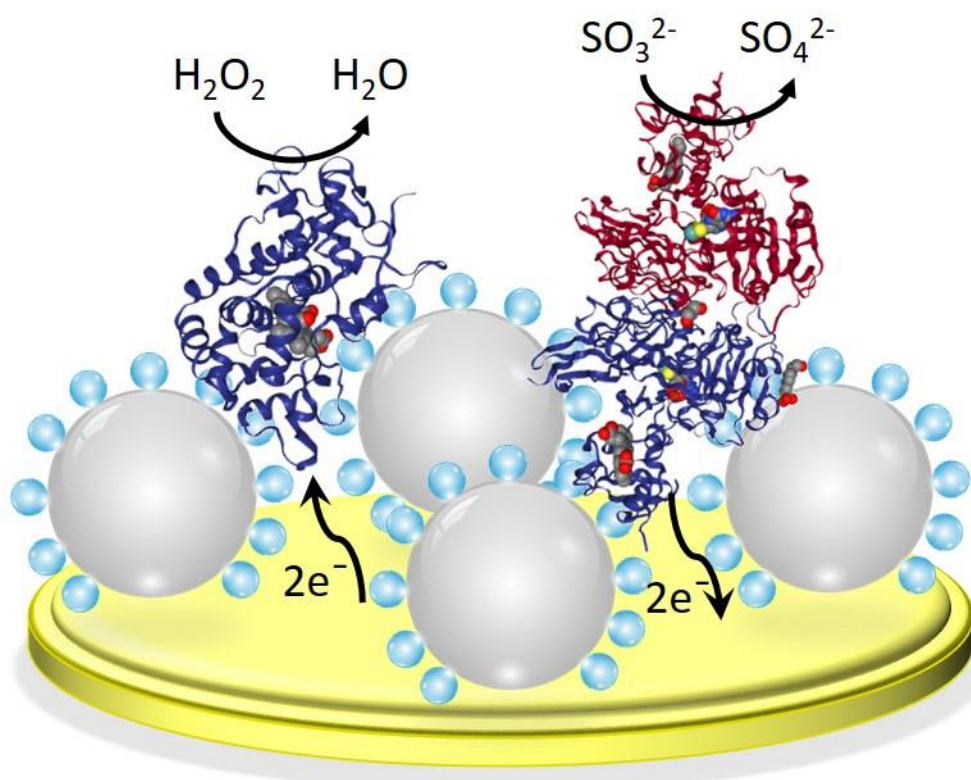
Isabel Álvarez-Martos^{a*}, Faezeh Shahdoost-fard^{a,b}, and Elena E. Ferapontova^{a*}

^a*Interdisciplinary Nanoscience Center (iNANO), Aarhus University, Gustav Wieds Vej 14, DK-8000 Aarhus C, Denmark*

^b*Ilam University, Department of Chemistry, Ilam, Iran*

* e-mails: martos@inano.au.dk, elena.ferapontova@inano.au.dk

Graphical Abstract



Research Highlights

- Gold nanostructured dendrimer films allow to stabilize and electrically wire heme-enzymes
- Electron transfer and bioelectrocatalysis of heme-enzymes were studied
- H₂O₂-reducing horseradish peroxidase showed better performance on unlabelled dendrimer layers.
- Methylene blue-dendrimer is a more efficient wire for complex cofactor sulfite oxidase.

Abstract.

Redox-modified branched 3D dendrimeric nanostructures may be considered as perspective wires for electrical connection between redox enzymes and electrodes. Here, we studied electron transfer (ET) reactions and bioelectrocatalysis of heme-containing horseradish peroxidase (HRP) and heme- and molibdopterin-containing sulfite oxidase (SOx), wired to gold by the methylene blue (MB)-labeled

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