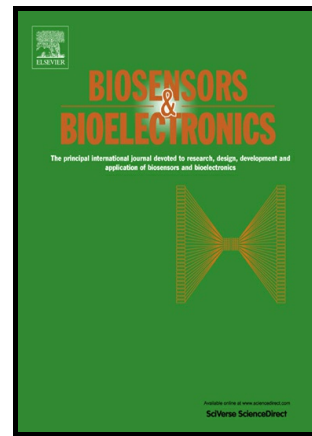


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CLASP (Continuous lifestyle awareness through sweat platform): A novel sensor for simultaneous detection of alcohol and glucose from passive perspired sweat

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Abstract

Wearable- IOT based low- cost platforms can enable dynamic lifestyle monitoring through enabling promising and exciting opportunities for wellness and chronic- disease management in personalized environments. Diabetic and pre- diabetic populations can modulate their alcohol intake by tracking their glycemic content continuously to prevent health risks through these platforms. We demonstrate the first technological proof of a combinatorial biosensor for continuous, dynamic monitoring of alcohol and glucose in ultra- low volumes (1- 5 μ L) of passive perspired sweat towards developing a wearable- IOT based platform. Non-invasive biosensing in sweat is achieved by a unique gold- zinc oxide (ZnO) thin film electrode stack fabricated on a flexible substrate suitable for wearable applications. The active ZnO sensing region is immobilized with enzyme complexes specific for the detection of alcohol and glucose

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