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(54) **Title:** EPIDERMAL BIOSENSOR

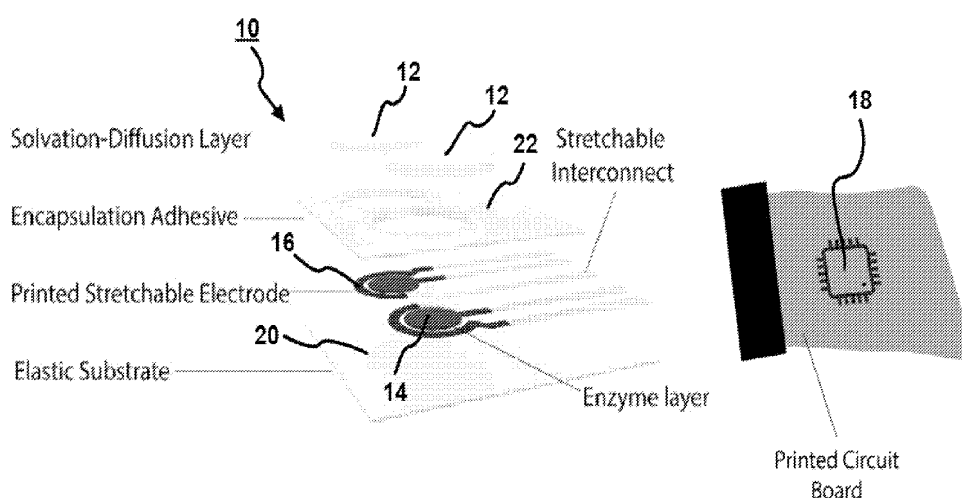


FIG. 1

(57) **Abstract:** An epidermal biosensor comprising a diffusion layer operable to dissolve a solid-phase epidermal analyte, an enzymatic bioreceptor operable to oxidise the dissolved epidermal analyte from the diffusion layer, a transducer having an interface with the diffusion layer, a processor configured to process electrochemical data from the transducer, and a substrate to which the enzymatic bioreceptor and the transducer are attached. The solid-phase epidermal analyte may include water-insoluble cholesterol and water-soluble lactate. The diffusion-solvation layer may comprise agarose hydrogel and additives including glycerol and/or gelatin to improve mechanical robustness and reduce water evaporation rate of the hydrogel, and ethanol and/or Triton X-100 to facilitate solvation and transportation of hydrophobic analytes.

[Continued on next page]

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