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(54) **CELLARIUM: THIN-FILM SENSOR WITH MICROARRAY SEAL**

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CPC **G01N 33/84** (2013.01); **G01N 21/6428** (2013.01); **G01N 33/66** (2013.01)

(58) **Field of Classification Search**

None
See application file for complete search history.

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(57) **ABSTRACT**

A triple sensor structured for simultaneous measurement of glucose, oxygen, and pH. The sensor components are in thin film states such as sensing films or membranes, with a glucose probe associated with emission of radiation in the blue part of the spectrum, an oxygen probe associated with radiation in red portion of the spectrum, and a pH probe—with a green portion of the spectrum. The optical probes are chemically grafted or immobilized in a suitable polymer matrix, alleviating the leaching of the probes from the matrix, improving the thin film sensing stability, and enabling the repeatable use of the same sensing films.

11 Claims, 6 Drawing Sheets