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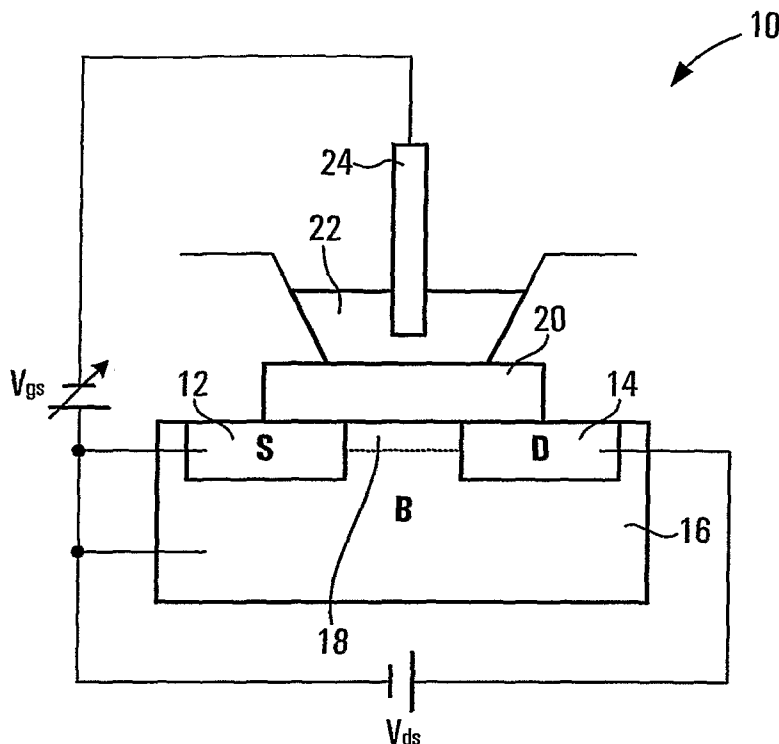
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(54) Title: ADDRESSABLE TRANSISTOR CHIP FOR CONDUCTING ASSAYS



(57) Abstract: A bioelectronic microchip formed on a substrate (16) includes a plurality of field effect transistors (10), each including first (12) and second (14) electrodes on the substrate; and a channel (18) extending between the first and second electrodes. An organic/semiconducting material fills the channel (18); and a dielectric layer (20) is formed atop the first and second electrodes and the channel. An electrolyte (22) to hold a probe molecule may be formed on the dielectric. A third electrode (24) in proximity with the first and second electrodes and isolated therefrom by contacts (24) that contact the dielectric. Capture of target molecules may be detected at each transistor through changes in source to drain characteristics. The method provides high density and low cost sensors, particularly in diagnostic and drug discovery applications.



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