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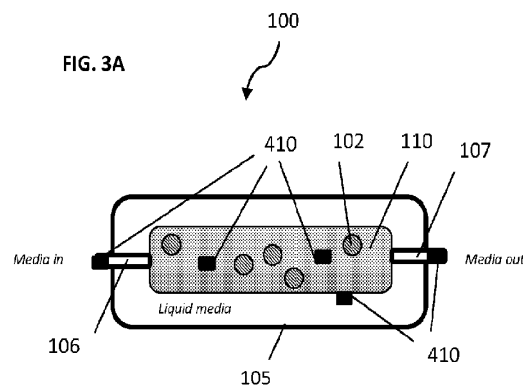
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(54) Title: ENCAPSULATION DEVICE SYSTEMS WITH OXYGEN SENSORS WITH OR WITHOUT EXOGENOUS OXYGEN DELIVERY



(57) Abstract: An encapsulation device system for therapeutic applications such as but not limited to regulating blood glucose. The system may comprise an encapsulation device with a first oxygen sensor integrated inside the device and a second oxygen sensor disposed on an outer surface of the device, wherein the sensors allow for real-time measurements (such as oxygen levels) related to cells (e.g., islet cells, stem cell derived beta cells, etc.) housed in the encapsulation device. The system may also feature an exogenous oxygen delivery system operatively connected to the encapsulation device via a channel, wherein the exogenous oxygen delivery system is adapted to deliver oxygen to the encapsulation device.

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