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(54) Title: DURABLE GRAPHENE OXIDE MEMBRANES

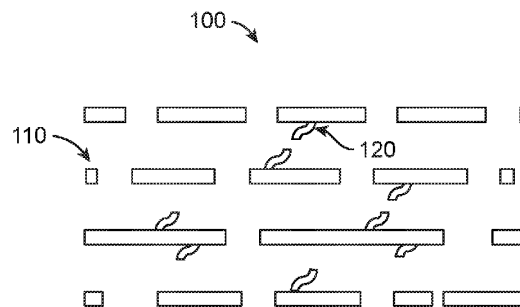


FIG. 1

(57) Abstract: Embodiments described herein relate generally to durable graphene oxide membranes for fluid filtration. For example, the graphene oxide membranes can be durable under high temperatures non-neutral pH, and/or high pressures. One aspect of the present disclosure relates to a filtration apparatus comprising: a support substrate, and a graphene oxide membrane disposed on the support substrate. The graphene oxide membrane has a first lactose rejection rate of at least 50% with a first 1 wt% lactose solution at room temperature. The graphene oxide membrane has a second lactose rejection rate of at least 50% with a second 1 wt% lactose solution at room temperature after the graphene oxide membrane is contacted with a solution that is at least 80 °C for a period of time.

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