Claims

1. A fluidized membrane bioreactor comprising:
a bioreactor including biochemically active organisms;
fluidized particles as a support media attached by the organisms;
membranes which permit treated water to pass through but not the organisms;
wherein the fluidized particles are in direct contact with the membranes, and
~~wherein the particles are primarily fluidized by liquid waste influent to the bioreactor without introduction of a gas~~
wherein the particles are fluidized by the waste influent and/or recycled reactor fluid flowing into the bioreactor without introduction of a gas.

2. The fluidized membrane bioreactor according to claim 1, wherein the membranes are installed internally in the bioreactor.

3. The fluidized membrane bioreactor according to claim 1, wherein the membranes are installed externally to the bioreactor.

4. The fluidized membrane bioreactor according to any one of claims 1, wherein the fluidized particles are heavier than water when in their wet state, having a specific gravity ranging from about 1.05 to 3, and having a size between 0.1 mm and 5 mm.

5. The fluidized membrane bioreactor according to any one of claims 4, wherein the fluidized particles are granular activated carbon.

6. The fluidized membrane bioreactor according to any one of claims 1, wherein the membranes are selected from the group consisting of: hollow fiber membranes, tubular membranes, and flat sheet membranes.

7. The fluidized membrane bioreactor according to any one of claims 1, wherein treatment in the bioreactor is anaerobic treatment.

~~8. The fluidized membrane bioreactor according to any one of claims 1, wherein the particles are fluidized by introduction of the waste influent and recycled reactor fluid.~~

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1. A fluidized membrane bioreactor comprising:
a bioreactor including biochemically active organisms;
fluidized particles as a support media attached by the organisms;
membranes which permit treated water to pass through but not the organisms;
wherein the fluidized particles are in direct contact with the membranes, and
wherein the particles are fluidized by the waste influent and/or recycled reactor fluid flowing into the bioreactor without introduction of a gas.

2. The fluidized membrane bioreactor according to claim 1, wherein the membranes are installed internally in the bioreactor.

3. The fluidized membrane bioreactor according to claim 1, wherein the membranes are installed externally to the bioreactor.

4. The fluidized membrane bioreactor according to any one of claims 1, wherein the fluidized particles are heavier than water when in their wet state, having a specific gravity ranging from about 1.05 to 3, and having a size between 0.1 mm and 5 mm.

5. The fluidized membrane bioreactor according to any one of claims 4, wherein the fluidized particles are granular activated carbon.

6. The fluidized membrane bioreactor according to any one of claims 1, wherein the membranes are selected from the group consisting of: hollow fiber membranes, tubular membranes, and flat sheet membranes.

7. The fluidized membrane bioreactor according to any one of claims 1, wherein treatment in the bioreactor is anaerobic treatment.