~~What is claimed is:~~

CLAIMS

~~1. An electrochlorination system comprising:~~

~~a source of feed fluid;~~

~~a product fluid outlet; and~~

~~a plurality of electrochemical cells connected fluidically between the source of feed fluid and the product fluid outlet,~~

~~the system being configured to operate at least one of the plurality of electrochemical cells at one of a first current density or a first flow rate, and to operate another of the plurality of electrochemical cells at a second current density or second flow rate different from the respective first current density or first flow rate.~~

~~2. The system of claim 1, wherein the plurality of electrochemical cells are series electrochemical cells fluidically connected in series.~~

~~3. The system of claim 1, wherein the plurality of electrochemical cells are parallel electrochemical cells fluidically connected in parallel.~~

~~4. The system of claim 1, wherein the plurality of electrochemical cells includes one or more series electrochemical cells that are fluidically connected in series with one or more parallel electrochemical cells that are fluidically connected in parallel.~~

~~5. The system of any of claims 2-4, wherein the plurality of electrochemical cells are electrically connected in series.~~

~~6. The system of any of claims 2-4, wherein the plurality of electrochemical cells are electrically connected in parallel.~~

~~7. The system of any of claims 2-4, wherein the plurality of electrochemical cells includes one or more electrochemical cells that are electrically connected in series with one or more electrochemical cells that are electrically connected in parallel.~~

~~8. The system of any of claims 2-4, wherein the plurality of electrochemical cells includes one or more electrochemical cells that are electrically independent of others of the plurality of electrochemical cells.~~

~~9. The system of claim 1, further comprising a controller configured to operate a first electrochemical cell fluidically upstream of a second electrochemical cell at the first current density and to operate the second electrochemical cell at the second current density, the first current density being higher than the second current density.~~

~~10. The system of claim 9, further comprising a third electrochemical cell disposed fluidically between the first electrochemical cell and the second electrochemical cell.~~

~~11. The system of claim 10, wherein the controller is further configured to operate the third electrochemical cell at a third current density that is lower than the first current density and higher than the second current density.~~

~~12. The system of claim 11, further comprising a fourth electrochemical cell disposed fluidically downstream of the second electrochemical cell, the controller being further configured to operate the fourth electrochemical cell at the second current density.~~

~~13. The system of claim 12, further comprising a pump, wherein the controller is further configured to cause the pump to flow fluid from the source of feed fluid through each of the first, second, third, and fourth electrochemical cells at the first flow rate.~~

~~14. The system of claim 1, wherein the plurality of electrochemical cells includes a first group of parallel electrochemical cells fluidically connected in parallel between the source of feed fluid and a plurality of series electrochemical cells fluidically connected in series.~~

~~15. The system of claim 14, further comprising a controller configured to operate each of the electrochemical cells in the group of parallel electrochemical cells at the first flow rate and to operate each of the electrochemical cells in the plurality of series electrochemical cells at the second flow rate, the first flow rate being less than the second flow rate.~~

~~16. The system of claim 15, wherein fluid outlet conduits from each of the electrochemical cells in the group of parallel electrochemical cells are combined into a single fluid input conduit of the plurality of series electrochemical cells.~~

~~17. The system of claim 15, wherein the controller is further configured to operate each of the electrochemical cells in the group of parallel electrochemical cells and each of the electrochemical cells in the plurality of series electrochemical cells at the first current density.~~

~~18. The system of claim 15, wherein the controller is further configured to operate each of the electrochemical cells in the group of parallel electrochemical cells at the first current density and to operate each of the electrochemical cells in the plurality of series electrochemical cells at the second current density.~~

~~19. The system of claim 18, wherein the first current density is greater than the second current density.~~

~~20. The system of claim 1, further comprising a product tank fluidically connected to a fluid outlet of the plurality of electrochemical cells.~~

~~21. The system of claim 20, further comprising a parallel electrochemical cell having a fluid inlet connected to a fluid outlet of the product tank and a fluid outlet connected to a fluid inlet of the product tank.~~

~~22. The system of claim 20, further comprising a controller configured to operate the parallel electrochemical cell at a third current density different from the first current density and from the second current density.~~

~~23. The system of claim 20, further comprising a controller configured to operate the parallel electrochemical cell at a third flow rate different from the first flow rate and from the second flow rate.~~

~~24. The system of claim 20, further comprising a controller configured to operate the parallel electrochemical cell at one of the first current density or the second current density.~~

~~25. The system of claim 20, further comprising a controller configured to operate the parallel electrochemical cell at one of the first flow rate or the second flow rate.~~

~~26. An electrochlorination system comprising:~~

~~a source of feed fluid;~~

~~a product fluid outlet;~~

~~a pair of parallel electrochemical cells fluidly connected in parallel to a fluid outlet of the source of feed fluid;~~

~~a series electrochemical cell connected fluidically in series between the pair of parallel electrochemical cells and the product fluid outlet; and~~

~~a controller configured to operate the pair of parallel electrochemical cells at one of a first current density or a first flow rate, and to operate the series electrochemical cell at a second current density or second flow rate different from the first current density or first flow rate.~~

~~27. The system of claim 26, wherein the controller is configured to operate each of the electrochemical cells in the pair of parallel electrochemical cells and the series electrochemical cell at a same current density.~~

~~28~~1. A method of operating an electrochlorination system, the method comprising:

flowing a feed fluid through a first electrochemical cell and through a second electrochemical cell of the system, the second electrochemical cell being operated at one of a different current density or a different flow velocity than a respective current density or flow velocity of the first cell~~.~~

~~29. The method of claim 28, comprising flowing the feed fluid through the first electrochemical cell and through the second electrochemical cell in series.~~

~~30. The method of claim 28~~, comprising flowing the feed fluid through the first electrochemical cell and through the second electrochemical cell in parallel~~.~~

~~31. The method of claim 30~~, further comprising flowing the feed fluid through a third electrochemical cell in series with the first and second electrochemical cells~~.~~

~~32. The method of claim 31~~, further comprising one of:

flowing the feed fluid from both the first and second electrochemical cells into the third electrochemical cell, or

flowing the feed fluid from the third electrochemical cell into both the first and second electrochemical cells~~.~~

~~33. The method of claim 32~~, where the flow velocity of the feed fluid through the third electrochemical cell is a sum of the flow velocities of the feed fluid through the first and second electrochemical cells~~.~~

~~34. The method of claim 33~~, wherein each of the first, second, and third electrochemical cells are operated at a same current density.

~~35. The method of claim 29, comprising flowing the feed fluid through the first and second electrochemical cells at a same flow velocity.~~

~~36. The method of claim 35, further comprising operating the first electrochemical cell at a higher current density than the second electrochemical cell.~~

~~37. The method of claim 29, comprising flowing the feed fluid through the second electrochemical cell at a flow velocity higher than a flow velocity of the feed fluid through the first electrochemical cell.~~

~~38. The method of claim 37, further comprising recirculating feed fluid from an outlet of the second electrochemical cell to an inlet of the second electrochemical cell.~~

~~39. The method of claim 38, further comprising operating the first electrochemical cell at a higher current density than the second electrochemical cell.~~

~~40. The method of claim 29, further comprising recirculating feed fluid from an outlet of the second electrochemical cell to an inlet of the first electrochemical cell.~~

~~41. The method of claim 40, further comprising operating the first electrochemical cell at a higher current density than the second electrochemical cell.~~

~~42. The method of claim 29, further comprising flowing the feed fluid from a product tank into the first electrochemical cell, from the first electrochemical cell through the second electrochemical cell, and from the second electrochemical cell back into the product tank.~~

~~43. The method of claim 42, further comprising operating the first electrochemical cell at a higher current density than the second electrochemical cell.~~

~~44. The method of claim 28, further comprising flowing the feed fluid from the first electrochemical cell into a product tank.~~

~~45. The method of claim 44, further comprising recirculating feed fluid from the product tank through the second electrochemical cell and then back into the product tank.~~

~~46. The method of claim 45, further comprising operating the first electrochemical cell at a higher current density than the second electrochemical cell.~~

~~47. A method of operating an electrochlorination system, the method comprising:~~

~~flowing feed fluid through an electrolyzer at a first flow rate to produce a product solution, the electrolyzer including one or more electrochemical cells;~~

~~flowing the product solution from the electrolyzer operating at the first flow rate into a product tank;~~

~~recirculating the product solution from the product tank through the electrolyzer and back into the product tank at a second flow rate higher than the first flow rate; and~~

~~flowing the product solution at a third flow rate higher than the second flow rate from the product tank and through an outlet of the electrochlorination system to a point of use.~~

~~48. The method of any of claims 28-47, comprising electrochemically generating a product solution having a NaOCl concentration of at least 3000 ppm from the feed fluid.~~

~~49. The method of claim 48, comprising electrochemically generating a product solution having a NaOCl concentration of at least 6000 ppm from the feed fluid.~~