

What is claimed is:

1. A system to purge dissolved gases selectively from liquids, comprising:
 - a first contactor including two first contactor inlets and two first contactor outlets, the first contactor being in fluid communication with a liquid source at a first inlet of the first contactor and an inert gas source at a second inlet of the first contactor, the second inlet of the first contactor receiving inert gas that purges a first portion of gas from the liquid source, the first portion of purged gas exiting the first contactor at a first outlet of the first contactor; and
 - a second contactor including two second contactor inlets and two second contactor outlets, the second contactor being in fluid communication with a second outlet of the first contactor and the inert gas source at a second inlet of the second contactor, the second inlet of the second contactor receiving inert gas that purges a second portion of the gas from the liquid source, the second portion of purged gas exiting the second contactor at a first outlet of the second contactor.
2. The system of claim 1 further comprising:
 - a liquid jet vacuum pump being in fluid communication with the second contactor via a) a second outlet of the second contactor being in fluid communication with at least one inlet of the vacuum pump and b) an outlet of the vacuum pump being in fluid communication with the first inlet of the first contactor.
3. The system of claim 1 wherein the first contactor includes a plurality of first contactor inlets and a plurality of first contactor outlets, the liquid source and the inert gas being in fluid communication with one or more of the plurality of first contactor inlets.
4. The system of claim 1 where the second contactor includes a plurality of second contactor inlets and a plurality of second contactor outlets, one or more of the plurality of second contactor inlets being in fluid communication with one or more of the plurality of first contactor outlets and the inert gas source.
5. The system of claim 2, wherein a liquid pump pressurizes fluid exiting the second outlet of the second contactor.

6. The system of claim 5, wherein a portion of the pressurized fluid is used as a motivating liquid for the liquid jet vacuum pump.
7. The system of claim 1 wherein a portion of the inert gas comprises an inert blanket gas.
8. The system of claim 1 wherein the first portion of purged gas or the second portion of purged gas comprises an inert blanket gas.
9. The system of claim 1 further comprising a housing that surrounds at least a portion of the first contactor and the second contactor, wherein the housing is a material with low permeability.
10. The system of claim 9 wherein the housing is purged with an inert gas.
11. The system of claim 10 wherein the inert gas is the first portion of gas purged from the liquid source.
12. The system of claim 1 further comprising:
 - a plurality of contactors each including two contactor inlets and two contactor outlets, the plurality of contactors being in fluid communication such that a first inlet of a third contactor of the plurality of contactors is in fluid communication with the second outlet of the second contactor,
 - each first outlet of the plurality of contactors is in fluid communication with a first inlet of one of the plurality of contactors and a second inlet of each of the plurality of contactors is in fluid communication with the inert gas source, the second inlet of each of the plurality of contactors receiving inert gas that purges a portion of gas from the liquid source, each portion of purged gas exiting each of the plurality of contactors at a second outlet of each of the plurality of contactors.
13. The system of claim 10 further comprising a liquid jet vacuum pump being in fluid communication with a last contactor of the plurality of contactors via:
 - a) a second outlet of the last contactor being in fluid communication with at least one inlet of the liquid jet vacuum pump, and

b) an outlet of the liquid jet vacuum pump being in fluid communication with the first inlet of the first contactor.

14. The system of claim 13 wherein a vacuum level of the liquid jet vacuum pump is controlled by supplying additional inert gas to a second inlet of the last contactor, the inert gas purges an additional portion of the first gas.
15. The system of claim 12 wherein the last contactor further comprises a third inlet, the third inlet being in fluid communication with an additional gas source such that fluid at the second outlet of the last contactor includes a desired concentration of the additional gas.
16. The system of claim 13 wherein a vacuum level of the liquid jet vacuum pump is controlled by varying a water flow to the liquid jet vacuum pump, disabling the liquid jet vacuum pump, or enabling the liquid jet vacuum pump.
17. The system of claim 1 further comprising one or more sensors to measure a concentration of gas at the first outlet of the second contactor outlet, the second outlet of the second contactor, or both the first outlet and the second outlet of the second contactor, the gas is substantially similar to the purged gas.
18. The system of claim 17 further comprising a controller to control the concentration of gas at the second outlet of the second contactor based on the measured concentration by:
 - a) inputting the purged gas into the second contactor via the second inlet of the second contactor inlet,
 - b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or
 - c) any combination thereof.
19. The system of claim 1 further comprising a third contactor including two inlets and an outlet, the third contactor being in fluid communication with a second liquid source at the first inlet of the third contactor, the inert gas source at the second inlet of the third contactor, and the first contactor at the outlet of the third contactor, the first inlet of

the third contactor receiving the second liquid source that humidifies the inert gas, the first contactor receives the humidified inert gas at the second inlet of the first contactor.

20. The system of claim 1 wherein the first contactor further comprises a third inlet, the third inlet being in fluid communication with a second liquid source, the third inlet receiving a second liquid based on a concentration of the liquid source at the first inlet of the first contactor.
21. A method for purging dissolved gases selectively from liquids, comprising:
 - supplying a liquid source and an inert gas to a first contactor to purge a first portion of a gas from the liquid source; and
 - supplying the inert gas and an output of the first contactor to a second contactor to purge a second portion of the gas from the liquid source.
22. The method of claim 21 further comprising:
 - supplying an output of the second contactor to a liquid jet vacuum pump to purge dissolved inert gas from a second contactor output; and
 - supplying an output of the liquid jet vacuum pump to the second contactor to purge a third portion of the gas from the liquid source.
23. The method of claim 22 further comprising pressurizing fluid exiting the second contactor via a liquid pump.
24. The method of claim 23 further comprising supplying a portion of the pressurized fluid to the liquid jet vacuum pump for use as a motivating liquid for the liquid jet vacuum pump.
25. The method of claim 22 further comprising supplying a second gas to the inert gas to purge a third portion of the gas from the liquid source.
26. The method of claim 22 further comprising controlling a vacuum level of the second contactor to purge a third portion of the gas from the liquid source.

27. The method of claim 21 further comprising:
- supplying the inert gas and an output of the second contactor to a third contactor of a plurality of contactors;
 - supplying an output of each of the plurality of contactors to an input of one contactor of the plurality of contactors such that the first contactor, the second contactor and the plurality of contactors are connected; and
 - supplying the inert gas to each of the plurality of contactors, the inert gas purging a portion of the gas from each of the plurality of contactors.
28. The method of claim 27 further comprising supplying an output of a last contactor of the plurality of contactors to a liquid jet vacuum pump to purge an additional portion of the first gas from the liquid source.
29. The method of claim 28 further comprising supplying additional inert gas to the last contactor to control a vacuum level of the liquid jet vacuum pump.
30. The method of claim 29 further comprising supplying an additional gas source to an input of the last contactor such that fluid at the output of the last contactor includes a desired concentration of the additional gas.
31. The method of claim 28 further comprising controlling a vacuum level of the liquid jet vacuum pump by varying a water flow to the liquid jet vacuum pump, disabling the liquid jet vacuum pump, or enabling the liquid jet vacuum pump.
32. The method of claim 30 further comprising measuring a concentration of gas at the output of the second contactor, the gas is substantially similar to the purged gas.
33. The method of claim 32 further comprising controlling the concentration of gas at the output of the second contactor based on the measured concentration by a) inputting the purged gas into the second contactor, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.
34. The method of claim 21 further comprising:
- supplying a second liquid source and the inert gas to a third contactor to

humidify the inert gas; and

supplying the output of the third contactor to the first contactor such that the first contactor receives the humidified inert gas.

35. The method of claim 21 further comprising supplying a second liquid source to the first contactor based on a concentration of the liquid source at the first contactor.

CLAIMS

1. A system to purge dissolved gases selectively from liquids, comprising:
 - a first contactor including two first contactor inlets and two first contactor outlets, the first contactor being in fluid communication with a liquid source at a first inlet of the first contactor and an inert gas source at a second inlet of the first contactor, the second inlet of the first contactor receiving inert gas that purges a first portion of gas from the liquid source, the first portion of purged gas exiting the first contactor at a first outlet of the first contactor; and
 - a second contactor including two second contactor inlets and two second contactor outlets, the second contactor being in fluid communication with a second outlet of the first contactor and the inert gas source at a second inlet of the second contactor, the second inlet of the second contactor receiving inert gas that purges a second portion of the gas from the liquid source, the second portion of purged gas exiting the second contactor at a first outlet of the second contactor; and
 - a liquid jet vacuum pump being in fluid communication with the second contactor via a) a second outlet of the second contactor being in fluid communication with at least one inlet of the vacuum pump and b) an outlet of the vacuum pump being in fluid communication with the first inlet of the first contactor.
2. The system of claim 1 wherein the first contactor includes a plurality of first contactor inlets and a plurality of first contactor outlets, the liquid source and the inert gas being in fluid communication with one or more of the plurality of first contactor inlets.
3. The system of claim 1 where the second contactor includes a plurality of second contactor inlets and a plurality of second contactor outlets, one or more of the plurality of second contactor inlets being in fluid communication with one or more of the plurality of first contactor outlets and the inert gas source.
4. The system of claim 1, further comprising a liquid pump being in fluid communication

with the second contactor via the second outlet of the second contactor to pressurize fluid exiting the outlet of the second contactor.

5. The system of claim 4, wherein the liquid pump is in fluid communication with the liquid jet vacuum pump to provide a portion of the pressurized fluid to be used as a motivating liquid for the liquid jet vacuum pump.

6. The system of claim 1 wherein the inert gas source is in fluid communication with the first contactor and the second contactor such that a portion of the inert gas provides an inert blanket gas to the first contactor and the second contactor.

7. The system of claim 1 wherein the first portion of purged gas or the second portion of purged gas is in fluid communication with the first contactor and the second contactor to provide an inert blanket gas to the first contactor and the second contactor.

8. The system of claim 1 further comprising:

a plurality of contactors each including two contactor inlets and two contactor outlets, the plurality of contactors being in fluid communication such that a first inlet of a third contactor of the plurality of contactors is in fluid communication with the second outlet of the second contactor, each first outlet of the plurality of contactors is in fluid communication with a first inlet of one of the plurality of contactors and a second inlet of each of the plurality of contactors is in fluid communication with the inert gas source, the second inlet of each of the plurality of contactors receiving inert gas that purges a portion of gas from the liquid source, each portion of purged gas exiting each of the plurality of contactors at a second outlet of each of the plurality of contactors.

9. The system of claim 8 further comprising a liquid jet vacuum pump being in fluid communication with a last contactor of the plurality of contactors via: a) a second outlet of the last contactor being in fluid communication with at least one inlet of the liquid jet vacuum pump, and b) an outlet of the liquid jet vacuum pump being in fluid communication with the first inlet of the first contactor.

10. The system of claim 9 wherein the second inlet of the last contactor is in fluid communication with the inert gas source such that a vacuum level of the liquid jet vacuum pump is controlled and the inert gas purges an additional portion of the first gas.

11. The system of claim 1 further comprising one or more sensors to measure a concentration of gas at the first outlet of the second contactor, the second outlet of the second contactor, or both the first outlet and the second outlet of the second contactor, the gas is substantially similar to the purged gas.

12. The system of claim 11 further comprising a controller to control the concentration of gas at the second outlet of the second contactor based on the measured concentration by:
a) inputting the purged gas into the second contactor via the second inlet of the second contactor inlet, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.

13. The system of claim 1 further comprising a housing that surrounds at least a portion of the first contactor and the second contactor, wherein the housing is a material with low permeability.

14. The system of claim 13 wherein inert gas source is in fluid communication with the housing to purge the housing with the inert gas.

15. The system of claim 14 wherein the first portion of gas purged from the liquid source is in fluid communication with the housing to purge the housing with the first portion of gas purged.

16. The system of claim 1 wherein the first contactor further comprises a third inlet, the third inlet being in fluid communication with a second liquid source, the third inlet receiving a second liquid based on a concentration of the liquid source at the first inlet of the first contactor.

17. A system to purge dissolved gases selectively from liquids, comprising:

a first contactor including two first contactor inlets and two first contactor outlets, the first contactor being in fluid communication with a liquid source at a first inlet of the first contactor and an inert gas source at a second inlet of the first contactor, the second inlet of the first contactor receiving inert gas that purges a first portion of gas from the liquid source, the first portion of purged gas exiting the first contactor at a first outlet of the first contactor; and

a second contactor including two second contactor inlets and two second contactor outlets, the second contactor being in fluid communication with a second outlet of the first contactor and the inert gas source at a second inlet of the second contactor, the second inlet of the second contactor receiving inert gas that purges a second portion of the gas from the liquid source, the second portion of purged gas exiting the second contactor at a first outlet of the second contactor; and

a housing that surrounds at least a portion of the first contactor and the second contactor, wherein the housing is a material with low permeability.

18. The system of claim 17 wherein the inert gas source is in fluid communication with the housing to purge the housing with the inert gas.

19. The system of claim 18 wherein the first portion of gas purged from the liquid source is in fluid communication with the housing to purge the housing with the first portion of gas purged.

20. The system of claim 17 wherein the first contactor includes a plurality of first contactor inlets and a plurality of first contactor outlets, the liquid source and the inert gas being in fluid communication with one or more of the plurality of first contactor inlets.

21. The system of claim 17 where the second contactor includes a plurality of second contactor inlets and a plurality of second contactor outlets, one or more of the plurality of second contactor inlets being in fluid communication with one or more of the plurality of

first contactor outlets and the inert gas source.

22. The system of claim 17, further comprising a liquid pump being in fluid communication with the second contactor via a second outlet of the second contactor to pressurize fluid exiting the outlet of the second contactor.

23. The system of claim 17, further comprising a liquid jet vacuum pump being in fluid communication with the second contactor via a) a second outlet of the second contactor being in fluid communication with at least one inlet of the vacuum pump and b) an outlet of the vacuum pump being in fluid communication with the first inlet of the first contactor, wherein the liquid pump is in fluid communication with the liquid jet vacuum pump to provide a portion of the pressurized fluid to be used as a motivating liquid for the liquid jet vacuum pump.

24. The system of claim 17 wherein the inert gas source is in fluid communication with the first contactor and the second contactor such that a portion of the inert gas provides an inert blanket gas to the first contactor and the second contactor.

25. The system of claim 17 wherein the first portion of purged gas or the second portion of purged gas is in fluid communication with the first contactor and the second contactor to provide an inert blanket gas to the first contactor and the second contactor.

26. The system of claim 17 further comprising: a plurality of contactors each including two contactor inlets and two contactor outlets, the plurality of contactors being in fluid communication such that a first inlet of a third contactor of the plurality of contactors is in fluid communication with the second outlet of the second contactor, each first outlet of the plurality of contactors is in fluid communication with a first inlet of one of the plurality of contactors and a second inlet of each of the plurality of contactors is in fluid communication with the inert gas source, the second inlet of each of the plurality of contactors receiving inert gas that purges a portion of gas from the liquid source, each portion of purged gas exiting each of the plurality of contactors at a second outlet of each

of the plurality of contactors.

27. The system of claim 26 further comprising a liquid jet vacuum pump being in fluid communication with a last contactor of the plurality of contactors via: a) a second outlet of the last contactor being in fluid communication with at least one inlet of the liquid jet vacuum pump, and b) an outlet of the liquid jet vacuum pump being in fluid communication with the first inlet of the first contactor.

28. The system of claim 27 wherein a vacuum level of the liquid jet vacuum pump is controlled by supplying additional inert gas to a second inlet of the last contactor, the inert gas purges an additional portion of the first gas.

29. The system of claim 26 wherein the last contactor further comprises a third inlet, the third inlet being in fluid communication with an additional gas source such that fluid at the second outlet of the last contactor includes a desired concentration of the additional gas.

30. The system of claim 17 further comprising one or more sensors to measure a concentration of gas at the first outlet of the second contactor, the second outlet of the second contactor, or both the first outlet and the second outlet of the second contactor, the gas is substantially similar to the purged gas.

31. The system of claim 30 further comprising a controller to control the concentration of gas at the second outlet of the second contactor based on the measured concentration by: a) inputting the purged gas into the second contactor via the second inlet of the second contactor inlet, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.

32. The system of claim 17 further comprising a third contactor including two inlets and an outlet, the third contactor being in fluid communication with a second liquid source at the first inlet of the third contactor, the inert gas source at the second inlet of the third

contactor, and the first contactor at the outlet of the third contactor, the first inlet of the third contactor receiving the second liquid source that humidifies the inert gas, the first contactor receives the humidified inert gas at the second inlet of the first contactor.

33. The system of claim 17 wherein the first contactor further comprises a third inlet, the third inlet being in fluid communication with a second liquid source, the third inlet receiving a second liquid based on a concentration of the liquid source at the first inlet of the first contactor.

34. A system to purge dissolved gases selectively from liquids, comprising:

- a first contactor including two first contactor inlets and two first contactor outlets, the first contactor being in fluid communication with a liquid source at a first inlet of the first contactor and an inert gas source at a second inlet of the first contactor, the second inlet of the first contactor receiving inert gas that purges a first portion of gas from the liquid source, the first portion of purged gas exiting the first contactor at a first outlet of the first contactor; and

- a second contactor including two second contactor inlets and two second contactor outlets, the second contactor being in fluid communication with a second outlet of the first contactor and the inert gas source at a second inlet of the second contactor, the second inlet of the second contactor receiving inert gas that purges a second portion of the gas from the liquid source, the second portion of purged gas exiting the second contactor at a first outlet of the second contactor; and

- a plurality of contactors each including two contactor inlets and two contactor outlets, the plurality of contactors being in fluid communication such that a first inlet of a third contactor of the plurality of contactors is in fluid communication with the second outlet of the second contactor, each first outlet of the plurality of contactors is in fluid communication with a first inlet of one of the plurality of contactors and a second inlet of each of the plurality of contactors is in fluid communication with the inert gas source, the second inlet of each of the plurality of contactors receiving inert gas that purges a portion of gas from the liquid source, each portion of purged gas exiting each of the plurality of contactors at a second outlet of each of the plurality of contactors, and wherein the last

contactor further comprises a third inlet, the third inlet being in fluid communication with an additional gas source such that fluid at the second outlet of the last contactor includes a desired concentration of the additional gas.

35. The system of claim 34 further comprising a liquid jet vacuum pump being in fluid communication with the last contactor via a) a second outlet of a last contactor of the plurality of contactors being in fluid communication with at least one inlet of the liquid jet vacuum pump and b) an outlet of the liquid jet vacuum pump being in fluid communication with the first inlet of the first contactor.

36. The system of claim 35, further comprising a liquid pump being in fluid communication with the second contactor via the second outlet of the last contactor to pressurize fluid exiting the outlet of the last contactor.

37. The system of claim 36, wherein the liquid pump is in fluid communication with the liquid jet vacuum pump to provide a portion of the pressurized fluid to be used as a motivating liquid for the liquid jet vacuum pump.

38. The system of claim 35 wherein the second inlet of the last contactor is in fluid communication with the inert gas source such that a vacuum level of the liquid jet vacuum pump is controlled and the inert gas purges an additional portion of the first gas.

39. The system of claim 34 wherein the first contactor includes a plurality of first contactor inlets and a plurality of first contactor outlets, the liquid source and the inert gas being in fluid communication with one or more of the plurality of first contactor inlets.

40. The system of claim 34 where the second contactor includes a plurality of second contactor inlets and a plurality of second contactor outlets, one or more of the plurality of second contactor inlets being in fluid communication with one or more of the plurality of first contactor outlets and the inert gas source.

41. The system of claim 34 wherein the inert gas source is in fluid communication with the first contactor, the second contactor and the plurality of contactors such that a portion of the inert gas provides an inert blanket gas to the first contactor, the second contactor and the plurality of contactors.

42. The system of claim 34 wherein each portion of purged gas is in fluid communication with the first contactor, the second contactor and the plurality of contactors to provide an inert blanket gas to the first contactor, the second contactor and the plurality of contactors.

43. The system of claim 34 further comprising a housing that surrounds at least a portion of the first contactor, the second contactor and the plurality of contactors, wherein the housing is a material with low permeability.

44. The system of claim 43 wherein inert gas source is in fluid communication with the housing to purge the housing with the inert gas.

45. The system of claim 43 wherein the first portion of gas purged from the liquid source is in fluid communication with the housing to purge the housing with the first portion of gas purged.

46. The system of claim 34 further comprising one or more sensors to measure a concentration of gas at the first outlet of the second contactor, the second outlet of the second contactor, or both the first outlet and the second outlet of the second contactor, the gas is substantially similar to the purged gas.

47. The system of claim 46 further comprising a controller to control the concentration of gas at the second outlet of the second contactor based on the measured concentration by: a) inputting the purged gas into the second contactor via the second inlet of the second contactor inlet, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.

48. The system of claim 34 further comprising a third contactor including two inlets and an outlet, the third contactor being in fluid communication with a second liquid source at the first inlet of the third contactor, the inert gas source at the second inlet of the third contactor, and the first contactor at the outlet of the third contactor, the first inlet of the third contactor receiving the second liquid source that humidifies the inert gas, the first contactor receives the humidified inert gas at the second inlet of the first contactor.

49. The system of claim 34 wherein the first contactor further comprises a third inlet, the third inlet being in fluid communication with a second liquid source, the third inlet receiving a second liquid based on a concentration of the liquid source at the first inlet of the first contactor.

50. A system to purge dissolved gases selectively from liquids, comprising:

a first contactor including two first contactor inlets and two first contactor outlets, the first contactor being in fluid communication with a liquid source at a first inlet of the first contactor and an inert gas source at a second inlet of the first contactor, the second inlet of the first contactor receiving inert gas that purges a first portion of gas from the liquid source, the first portion of purged gas exiting the first contactor at a first outlet of the first contactor; and

a second contactor including two second contactor inlets and two second contactor outlets, the second contactor being in fluid communication with a second outlet of the first contactor and the inert gas source at a second inlet of the second contactor, the second inlet of the second contactor receiving inert gas that purges a second portion of the gas from the liquid source, the second portion of purged gas exiting the second contactor at a first outlet of the second contactor; and

a third contactor including two inlets and an outlet, the third contactor being in fluid communication with a second liquid source at the first inlet of the third contactor, the inert gas source at the second inlet of the third contactor, and the first contactor at the outlet of the third contactor, the first inlet of the third contactor receiving the second liquid source that humidifies the inert gas, the first contactor receives the humidified inert

gas at the second inlet of the first contactor.

51. The system of claim 50 further comprising a liquid jet vacuum pump being in fluid communication with the third contactor via a) a second outlet of the third contactor being in fluid communication with at least one inlet of the vacuum pump and b) an outlet of the vacuum pump being in fluid communication with the first inlet of the first contactor.

52. The system of claim 51 further comprising a liquid pump being in fluid communication with the second contactor via the second outlet of the second contactor to pressurize fluid exiting the outlet of the second contactor.

53. The system of claim 52, wherein the liquid pump is in fluid communication with the liquid jet vacuum pump to provide a portion of the pressurized fluid to be used as a motivating liquid for the liquid jet vacuum pump.

54. The system of claim 50 wherein the first contactor includes a plurality of first contactor inlets and a plurality of first contactor outlets, the liquid source and the inert gas being in fluid communication with one or more of the plurality of first contactor inlets.

55. The system of claim 50 where the second contactor includes a plurality of second contactor inlets and a plurality of second contactor outlets, one or more of the plurality of second contactor inlets being in fluid communication with one or more of the plurality of first contactor outlets and the inert gas source.

56. The system of claim 50 wherein the inert gas source is in fluid communication with the first contactor and the second contactor such that a portion of the inert gas provides an inert blanket gas to the first contactor and the second contactor.

57. The system of claim 50 wherein the first portion of purged gas or the second portion of purged gas is in fluid communication with the first contactor and the second contactor to provide an inert blanket gas to the first contactor and the second contactor.

58. The system of claim 50 further comprising: a plurality of contactors each including two contactor inlets and two contactor outlets, the plurality of contactors being in fluid communication such that a first inlet of a fourth contactor of the plurality of contactors is in fluid communication with the second outlet of the second contactor, each first outlet of the plurality of contactors is in fluid communication with a first inlet of one of the plurality of contactors and a second inlet of each of the plurality of contactors is in fluid communication with the inert gas source, the second inlet of each of the plurality of contactors receiving inert gas that purges a portion of gas from the liquid source, each portion of purged gas exiting each of the plurality of contactors at a second outlet of each of the plurality of contactors.

59. The system of claim 58 further comprising a liquid jet vacuum pump being in fluid communication with a last contactor of the plurality of contactors via: a) a second outlet of the last contactor being in fluid communication with at least one inlet of the liquid jet vacuum pump, and b) an outlet of the liquid jet vacuum pump being in fluid communication with the first inlet of the first contactor.

60. The system of claim 59 wherein the second inlet of the last contactor is in fluid communication with the inert gas source such that a vacuum level of the liquid jet vacuum pump is controlled and the inert gas purges an additional portion of the first gas.

61. The system of claim 58 wherein the last contactor further comprises a third inlet, the third inlet being in fluid communication with an additional gas source such that fluid at the second outlet of the last contactor includes a desired concentration of the additional gas.

62. The system of claim 50 further comprising one or more sensors to measure a concentration of gas at the first outlet of the second contactor, the second outlet of the second contactor, or both the first outlet and the second outlet of the second contactor, the gas is substantially similar to the purged gas.

63. The system of claim 62 further comprising a controller to control the concentration of gas at the second outlet of the second contactor based on the measured concentration by: a) inputting the purged gas into the second contactor via the second inlet of the second contactor inlet, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.

64. A system to purge dissolved gases selectively from liquids, comprising:

a first contactor including two first contactor inlets and two first contactor outlets, the first contactor being in fluid communication with a liquid source at a first inlet of the first contactor and an inert gas source at a second inlet of the first contactor, the second inlet of the first contactor receiving inert gas that purges a first portion of gas from the liquid source, the first portion of purged gas exiting the first contactor at a first outlet of the first contactor; and

a second contactor including two second contactor inlets and two second contactor outlets, the second contactor being in fluid communication with a second outlet of the first contactor and the inert gas source at a second inlet of the second contactor, the second inlet of the second contactor receiving inert gas that purges a second portion of the gas from the liquid source, the second portion of purged gas exiting the second contactor at a first outlet of the second contactor, wherein the first contactor further comprises a third inlet, the third inlet being in fluid communication with a second liquid source, the third inlet receiving a second liquid based on a concentration of the liquid source at the first inlet of the first contactor.

65. The system of claim 64 wherein the first contactor includes a plurality of first contactor inlets and a plurality of first contactor outlets, the liquid source and the inert gas being in fluid communication with one or more of the plurality of first contactor inlets.

66. The system of claim 64 where the second contactor includes a plurality of second contactor inlets and a plurality of second contactor outlets, one or more of the plurality of second contactor inlets being in fluid communication with one or more of the plurality of

first contactor outlets and the inert gas source.

67. The system of claim 64 wherein the inert gas source is in fluid communication with the first contactor and the second contactor such that a portion of the inert gas provides an inert blanket gas to the first contactor and the second contactor.

68. The system of claim 64 wherein the first portion of purged gas or the second portion of purged gas is in fluid communication with the first contactor and the second contactor to provide an inert blanket gas to the first contactor and the second contactor.

69. The system of claim 64 further comprising: a plurality of contactors each including two contactor inlets and two contactor outlets, the plurality of contactors being in fluid communication such that a first inlet of a third contactor of the plurality of contactors is in fluid communication with the second outlet of the second contactor, each first outlet of the plurality of contactors is in fluid communication with a first inlet of one of the plurality of contactors and a second inlet of each of the plurality of contactors is in fluid communication with the inert gas source, the second inlet of each of the plurality of contactors receiving inert gas that purges a portion of gas from the liquid source, each portion of purged gas exiting each of the plurality of contactors at a second outlet of each of the plurality of contactors.

70. The system of claim 69 further comprising a liquid jet vacuum pump being in fluid communication with a last contactor of the plurality of contactors via: a) a second outlet of the last contactor being in fluid communication with at least one inlet of the liquid jet vacuum pump, and b) an outlet of the liquid jet vacuum pump being in fluid communication with the first inlet of the first contactor.

71. The system of claim 70 wherein the second inlet of the last contactor is in fluid communication with the inert gas source such that a vacuum level of the liquid jet vacuum pump is controlled and the inert gas purges an additional portion of the first gas.

72. The system of claim 69 wherein the last contactor further comprises a third inlet, the third inlet being in fluid communication with an additional gas source such that fluid at the second outlet of the last contactor includes a desired concentration of the additional gas.

73. The system of claim 64 further comprising one or more sensors to measure a concentration of gas at the first outlet of the second contactor, the second outlet of the second contactor, or both the first outlet and the second outlet of the second contactor, the gas is substantially similar to the purged gas.

74. The system of claim 73 further comprising a controller to control the concentration of gas at the second outlet of the second contactor based on the measured concentration by:
a) inputting the purged gas into the second contactor via the second inlet of the second contactor inlet, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.

75. A method for purging dissolved gases selectively from liquids, comprising: supplying a liquid source and an inert gas to a first contactor to purge a first portion of a gas from the liquid source; supplying the inert gas and an output of the first contactor to a second contactor to purge a second portion of the gas from the liquid source; supplying an output of the second contactor to a liquid jet vacuum pump to purge dissolved inert gas from a second contactor output; and supplying an output of the liquid jet vacuum pump to the second contactor to purge a third portion of the gas from the liquid source.

76. The method of claim 75 further comprising pressurizing fluid exiting the second contactor via a liquid pump.

77. The method of claim 76 further comprising supplying a portion of the pressurized fluid to the liquid jet vacuum pump for use as a motivating liquid for the liquid jet vacuum pump.

78. The method of claim 75 further comprising supplying a second gas to the inert gas to purge a third portion of the gas from the liquid source.

79. The method of claim 75 further comprising controlling a vacuum level of the second contactor to purge a third portion of the gas from the liquid source.

80. The method of claim 75 further comprising: supplying the inert gas and an output of the second contactor to a third contactor of a plurality of contactors; supplying an output of each of the plurality of contactors to an input of one contactor of the plurality of contactors such that the first contactor, the second contactor and the plurality of contactors are connected; and supplying the inert gas to each of the plurality of contactors, the inert gas purging a portion of the gas from each of the plurality of contactors.

81. The method of claim 80 further comprising supplying an output of a last contactor of the plurality of contactors to a liquid jet vacuum pump to purge an additional portion of the first gas from the liquid source.

82. The method of claim 81 further comprising supplying additional inert gas to the last contactor to control a vacuum level of the liquid jet vacuum pump.

83. The method of claim 82 further comprising supplying an additional gas source to an input of the last contactor such that fluid at the output of the last contactor includes a desired concentration of the additional gas.

84. The method of claim 83 further comprising measuring a concentration of gas at the output of the second contactor, the gas is substantially similar to the purged gas.

85. The method of claim 84 further comprising controlling the concentration of gas at the output of the second contactor based on the measured concentration by a) inputting the purged gas into the second contactor, b) varying an amount of the inert gas supplied to

the first contactor and the second contactor, or c) any combination thereof.

86. The method of claim 81 further comprising controlling a vacuum level of the liquid jet vacuum pump by varying a water flow to the liquid jet vacuum pump, disabling the liquid jet vacuum pump, or enabling the liquid jet vacuum pump.

87. A method for purging dissolved gases selectively from liquids, comprising: supplying a liquid source and an inert gas to a first contactor to purge a first portion of a gas from the liquid source; supplying the inert gas and an output of the first contactor to a second contactor to purge a second portion of the gas from the liquid source; supplying the inert gas and an output of the second contactor to a third contactor of a plurality of contactors; supplying an output of each of the plurality of contactors to an input of one contactor of the plurality of contactors such that the first contactor, the second contactor and the plurality of contactors are connected; supplying the inert gas to each of the plurality of contactors, the inert gas purging a portion of the gas from each of the plurality of contactors; and supplying an output of a last contactor of the plurality of contactors to a liquid jet vacuum pump to purge an additional portion of the first gas from the liquid source.

88. The method of claim 87 further comprising supplying additional inert gas to the last contactor to control a vacuum level of the liquid jet vacuum pump.

89. The method of claim 88 further comprising supplying an additional gas source to an input of the last contactor such that fluid at the output of the last contactor includes a desired concentration of the additional gas.

90. The method of claim 89 further comprising measuring a concentration of gas at the output of the second contactor, the gas is substantially similar to the purged gas.

91. The method of claim 90 further comprising controlling the concentration of gas at the output of the second contactor based on the measured concentration by a) inputting the

purged gas into the second contactor, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.

92. The method of claim 87 further comprising controlling a vacuum level of the liquid jet vacuum pump by varying a water flow to the liquid jet vacuum pump, disabling the liquid jet vacuum pump, or enabling the liquid jet vacuum pump.

93. The method of claim 87 further comprising pressurizing fluid exiting the second contactor via a liquid pump.

94. The method of claim 93 further comprising supplying a portion of the pressurized fluid to the liquid jet vacuum pump for use as a motivating liquid for the liquid jet vacuum pump.

95. The method of claim 87 further comprising supplying a second gas to the inert gas to purge a third portion of the gas from the liquid source.

96. The method of claim 87 further comprising controlling a vacuum level of the second contactor to purge a third portion of the gas from the liquid source.

97. A method for purging dissolved gases selectively from liquids, comprising: supplying a liquid source and an inert gas to a first contactor to purge a first portion of a gas from the liquid source; supplying the inert gas and an output of the first contactor to a second contactor to purge a second portion of the gas from the liquid source; supplying a second liquid source and the inert gas to a third contactor to humidify the inert gas; and supplying the output of the third contactor to the first contactor such that the first contactor receives the humidified inert gas.

98. The method of claim 97 further comprising supplying an output of the second contactor to a liquid jet vacuum pump to purge dissolved inert gas from a second contactor output; and supplying an output of the liquid jet vacuum pump to the second

contactor to purge a third portion of the gas from the liquid source.

99. The method of claim 98 further comprising pressurizing fluid exiting the second contactor via a liquid pump.

100. The method of claim 99 further comprising supplying a portion of the pressurized fluid to the liquid jet vacuum pump for use as a motivating liquid for the liquid jet vacuum pump.

101. The method of claim 98 further comprising supplying a second gas to the inert gas to purge a third portion of the gas from the liquid source.

102. The method of claim 98 further comprising controlling a vacuum level of the second contactor to purge a third portion of the gas from the liquid source.

103. The method of claim 97 further comprising: supplying the inert gas and an output of the second contactor to a third contactor of a plurality of contactors; supplying an output of each of the plurality of contactors to an input of one contactor of the plurality of contactors such that the first contactor, the second contactor and the plurality of contactors are connected; and supplying the inert gas to each of the plurality of contactors, the inert gas purging a portion of the gas from each of the plurality of contactors.

104. The method of claim 103 supplying an output of a last contactor of the plurality of contactors to a liquid jet vacuum pump to purge an additional portion of the first gas from the liquid source.

105. The method of claim 104 further comprising supplying additional inert gas to the last contactor to control a vacuum level of the liquid jet vacuum pump.

106. The method of claim 105 further comprising supplying an additional gas source to

an input of the last contactor such that fluid at the output of the last contactor includes a desired concentration of the additional gas.

107. The method of claim 106 further comprising measuring a concentration of gas at the output of the second contactor, the gas is substantially similar to the purged gas.

108. The method of claim 107 further comprising controlling the concentration of gas at the output of the second contactor based on the measured concentration by a) inputting the purged gas into the second contactor, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.

109. The method of claim 104 further comprising controlling a vacuum level of the liquid jet vacuum pump by varying a water flow to the liquid jet vacuum pump, disabling the liquid jet vacuum pump, or enabling the liquid jet vacuum pump.

110. A method for purging dissolved gases selectively from liquids, comprising: supplying a liquid source and an inert gas to a first contactor to purge a first portion of a gas from the liquid source; supplying the inert gas and an output of the first contactor to a second contactor to purge a second portion of the gas from the liquid source; supplying a second liquid source to the first contactor based on a concentration of the liquid source at the first contactor.

111. The method of claim 110 further comprising supplying an output of the second contactor to a liquid jet vacuum pump to purge dissolved inert gas from a second contactor output; and supplying an output of the liquid jet vacuum pump to the second contactor to purge a third portion of the gas from the liquid source.

112. The method of claim 111 further comprising pressurizing fluid exiting the second contactor via a liquid pump.

113. The method of claim 112 further comprising supplying a portion of the pressurized

fluid to the liquid jet vacuum pump for use as a motivating liquid for the liquid jet vacuum pump.

114. The method of claim 111 further comprising supplying a second gas to the inert gas to purge a third portion of the gas from the liquid source.

115. The method of claim 111 further comprising controlling a vacuum level of the second contactor to purge a third portion of the gas from the liquid source.

116. The method of claim 110 further comprising: supplying the inert gas and an output of the second contactor to a third contactor of a plurality of contactors; supplying an output of each of the plurality of contactors to an input of one contactor of the plurality of contactors such that the first contactor, the second contactor and the plurality of contactors are connected; and supplying the inert gas to each of the plurality of contactors, the inert gas purging a portion of the gas from each of the plurality of contactors.

117. The method of claim 116 supplying an output of a last contactor of the plurality of contactors to a liquid jet vacuum pump to purge an additional portion of the first gas from the liquid source.

118. The method of claim 117 further comprising supplying additional inert gas to the last contactor to control a vacuum level of the liquid jet vacuum pump.

119. The method of claim 118 further comprising supplying an additional gas source to an input of the last contactor such that fluid at the output of the last contactor includes a desired concentration of the additional gas.

120. The method of claim 119 further comprising measuring a concentration of gas at the output of the second contactor, the gas is substantially similar to the purged gas.

121. The method of claim 120 further comprising controlling the concentration of gas at the output of the second contactor based on the measured concentration by a) inputting the purged gas into the second contactor, b) varying an amount of the inert gas supplied to the first contactor and the second contactor, or c) any combination thereof.

122. The method of claim 117 further comprising controlling a vacuum level of the liquid jet vacuum pump by varying a water flow to the liquid jet vacuum pump, disabling the liquid jet vacuum pump, or enabling the liquid jet vacuum pump.