What is claimed is:

1. A metal air battery comprising:

a liquid electrolyte compartment and a chamber with an anode, a cathode, an overflow port and a liquid electrolyte input that introduces liquid electrolyte from the liquid electrolyte compartment to the chamber wherein the liquid electrolyte input is disposed at a lower end of the chamber and the overflow port is disposed at an upper end of the chamber;

a heat exchanger comprising:

a plurality of air-side fins directly connected to a backplate;

a plurality of liquid-side fins thermally connected to the backplate, the plurality of liquid-side fins being disposed in an overflow path positioned to receive liquid electrolyte from the overflow port, pass the liquid electrolyte over the plurality of liquid-side fins and into the liquid electrolyte compartment; and

the plurality of liquid-side fins consisting of alternating, adjacent first fins and second fins that are at an angle (θ) greater than 0° and less than 135° to one another and separated by a gap such that liquid electrolyte cascades from a distal end of the first fins, through the gap and to a proximal end of the second fins.

2. The metal air battery as recited in claim 1, wherein the angle (θ) is between 45° and 120°.

3. The metal air battery as recited in claim 1, wherein the angle (θ) is between 80° and 100°.

4. The metal air battery as recited in claim 1, wherein the angle (θ) is 90°.

5. The metal air battery as recited in claim 1, wherein each air-side fin in the plurality of air-side fins is parallel one another along their length to provide elongated, parallel air flow paths that are arranged vertically.

6. The metal air battery as recited in claim 1 , wherein each liquid-side fin extends in a first direction outwardly from the backplate to provide a first fin depth and each air-side fin

extends in a second direction to provide a second fin depth, wherein the second direction is opposite the first direction.

7. The metal air battery as recited in claim 1, wherein the plurality of air-side fins and the backplate are monolithic.

8. The metal air battery as recited in claim 1, wherein the plurality of liquid-side fins are directly attached to a mounting plate, the mounting plate being directly attached to the backplate.

9. The metal air battery as recited in claim 8, wherein the plurality of liquid-side fins and the mounting plate are monolithic.

10. The metal air battery as recited in claim 1, wherein the plurality of liquid-side fins are directly attached to the backplate.

11. The metal air battery as recited in claim 1, wherein the plurality of air-side fins, the plurality of liquid-side fins and the backplate are monolithic.

12. The metal air battery as recited in claim 1, wherein the air-side fins and the liquid-side fins are formed of different metals.

13. The metal air battery as recited in claim 1, wherein the air-side fins consist of aluminum and the liquid-side fins are aluminum- free.

14. The metal air battery as recited in claim 1, wherein the distal end of the first fins terminate directly above the proximal end of the second fins.