CLAIMS

1. A method of additively manufacturing a composite structure, comprising:

directing a continuous reinforcement into a print head;

coating the continuous reinforcement with a first matrix component inside of the print head;

coating the continuous reinforcement with a second matrix component that is different from the first matrix component;

discharging the continuous reinforcement through a nozzle of the print head; and

moving the print head in multiple dimensions during the discharging,

wherein the first and second matrix components interact to cause hardening of a matrix around the continuous reinforcement.

2. The method of claim 1, wherein:

the first matrix component is a resin; and

the second matrix component is one of a catalyst, a hardener, and an initiator.

3. The method of claim 2, wherein coating the continuous reinforcement with the second matrix component includes coating the continuous reinforcement inside the print head with the second matrix component after the continuous reinforcement has been coated with the first matrix component.

4. The method of claim 3, wherein coating the continuous reinforcement with the second matrix component includes at least one of directing the second matrix component into the print head at a discharge end of a first matrix component chamber or directing the second matrix component into the nozzle.

5. The method of claim 2, wherein coating the continuous reinforcement with the second matrix component includes coating the continuous reinforcement with the

second matrix component before the continuous reinforcement has been coated with the first matrix component.

6. The method of claim 5, wherein coating the continuous reinforcement with the second matrix component includes coating the continuous reinforcement prior to directing the continuous reinforcement into the print head.

7. The method of claim 1, further including exposing a mixture of the first and second matrix components coating the continuous reinforcement to a cure energy after the continuous reinforcement has been discharged from the nozzle.

8. The method of claim 6, wherein the cure energy is UV light.

9. The method of claim 1, further including at least one of separating and flattening the continuous reinforcement prior to coating the continuous reinforcement with at least one of the first and second matrix components.

10. The method of claim 1, wherein coating the continuous reinforcement with the first matrix component includes submerging the continuous reinforcement in a bath of the first matrix component.

11. The method of claim 1, wherein coating the continuous reinforcement with the first matrix component includes exposing the continuous reinforcement to at least one of a gas and a powder of the first matrix component.

12. A method of additively manufacturing a composite structure, comprising:

directing a continuous reinforcement that has been coated with a catalyst into a print head;

coating the continuous reinforcement with a resin that is different from the catalyst inside of the print head;

discharging the continuous reinforcement through a nozzle of the print head; and

moving the print head in multiple dimensions during the discharging.

13. The method of claim 12, further including:

coating the continuous reinforcement with the catalyst; and

at least partially curing the catalyst prior to the continuous reinforcement entering the print head.

14. The method of claim 12, further including exposing a mixture of the catalyst and the resin coating the continuous reinforcement to a cure energy after the continuous reinforcement has been discharged from the nozzle.

15. The method of claim 14, wherein the cure energy is UV light.

16. The method of claim 12, wherein coating the continuous reinforcement with the resin includes at least one of submerging the continuous reinforcement in a bath of the resin and spraying resin into the continuous reinforcement.

17. A method of additively manufacturing a composite structure, comprising:

directing a continuous reinforcement through a catalyst bath inside a print head;

directing the continuous reinforcement through a resin bath inside of the print head;

discharging the continuous reinforcement through a nozzle of the print head; and

moving the print head in multiple dimensions during the discharging.

18. The method of claim 17, further including exposing a mixture of the catalyst and the resin coating the continuous reinforcement to a cure energy after the continuous reinforcement has been discharged from the nozzle.

19. The method of claim 18, wherein the cure energy is UV light.

20. The method of claim 17, further including at least one of separating and flattening the continuous reinforcement prior to directing the continuous reinforcement through at least one of the catalyst bath and the resin bath.