CLAIMS

What is claimed is:

1. A system for joining an upper conducting foil and a lower conducting foil, the system comprising:

a joining mechanism configured to join the upper conducting foil and the lower conducting foil; and

a linear actuator configured to control motion of the joining mechanism with respect to the upper conducting foil and the lower conducting foil.

2. The system of claim 1, wherein the joining mechanism comprises a laser, a welding tool, a conductive epoxy, or a conductive paint.

3. The system of claim 1 or any other preceding claim, wherein the joining mechanism comprises a soldering tool configured to solder a metallic powder between the upper conducting foil and the lower conducting foil.

4. The system of claim 1 or any other preceding claim, wherein the joining mechanism is configured to join the upper conducting foil and the lower conducting foil between at least one first conductor and at least one second conductor.

5. The system of claim 4, wherein the at least one first conductor comprises multiple conductors or a single first conductor.

6. The system of claim 4, wherein the linear actuator is further configured to cause the joining mechanism to move between the at least one first conductor and the at least one second conductor.

7. The system of claim 6, wherein the linear actuator is further configured to cause the joining mechanism to move along a direction substantially parallel to the at least one first conductor and the at least one second conductor.

8. A method for joining an upper conducting foil and a lower conducting foil, the method comprising:

using a linear actuator to control motion of a joining mechanism with respect to the upper conducting foil and the lower conducting foil; and

joining the upper conducting foil and the lower conducting foil using the joining mechanism.

9. A system for manufacturing a cable comprising a plurality of insulated conductors positioned between an upper conducting foil and a lower conducting foil, the system comprising:

at least one welding tool configured to join the upper conducting foil and the lower conducting foil in a region between insulated conductors of the plurality of insulated conductors; and

a plurality of rollers configured to position the upper conducting foil, the lower conducting foil, and the plurality of insulated conductors relative to the at least one welding tool.

10. The system of claim 9, wherein the at least one welding tool comprises a roller electrode, an oscillating point electrode, or a stationary electrode.

11. The system of any of claims clam 9 or 10, wherein at least a portion of the at least one welding tool is stationary.

12. The system of any of claims 9-11, wherein the plurality of rollers comprises:

a first roller configured to position an upper roll of conducting foil, the upper roll of conducting foil comprising the upper conducting foil; and

a second roller configured to position a lower roll of conducting foil, the lower roll of conducting foil comprising the lower conducting foil.

13. The system of claim 12,

wherein the first roller is further configured to tension the upper roll of conducting foil, and

wherein the second roller is further configured to tension the lower roll of conducting foil.

14. The system of any of claims 9-13, further comprising:

an upper roll of conducting foil comprising the upper conducting foil; and

a lower roll of conducting foil comprising the lower conducting foil.

15. The system of any of claims 9-14, further comprising a plurality of guides configured to align the plurality of insulated conductors with respect to one another.

16. The system of claim 15, wherein aligning the plurality of insulated conductors with respect to one another comprises maintaining a specified distance between the insulated conductors of the plurality of insulated conductors.

17. The system of claim 15, wherein the plurality of guides is further configured to control a tension in the plurality of insulated conductors.

18. The system of any of claims 9-17, further comprising a heating element to anneal at least a portion of the cable.

19. The system of any of claims 9-18, wherein the plurality of rollers comprises:

one or more rollers configured to position the upper conducting foil, the lower conducting foil, and/or the plurality of insulated conductors.

20. The system of claim 19, wherein the one or more rollers are further configured to tension the upper conducting foil, the lower conducting foil, and/or the plurality of insulated conductors.

21. The system of any of claims 9-20, wherein the insulated conductors of the plurality of insulated conductors comprise at least one first insulated conductor and at least one second insulated conductor.

22. A method for manufacturing a cable comprising a plurality of insulated conductors positioned between an upper conducting foil and a lower conducting foil, the method comprising:

using at least one welding tool to join the upper conducting foil and the lower conducting foil in a region between insulated conductors of the plurality of insulated conductors; and

using a plurality of rollers to position the upper conducting foil, the lower conducting foil, and the plurality of insulated conductors relative to the at least one welding tool.

23. A method for manufacturing a cable comprising a plurality of insulated conductors and a conducting foil, the method comprising:

positioning the plurality of insulated conductors over the conducting foil;

applying pressure to the plurality of insulated conductors to deform the conducting foil; and

forming a cable using the deformed conducting foil.

24. The method of claim 23, further comprising positioning the conducting foil over polytetrafluoroethylene (PTFE) prior to applying the pressure to the plurality of insulated conductors.

25. The method of any of claims 23-24, wherein applying the pressure to the plurality of insulated conductors comprises using a roller to apply the pressure.

26. The method of any of claims 23-25, further comprising filling vacancies in the cable using a polymer resin.

27. The method of any of claims 23-26, further comprising positioning the plurality of insulated conductors, the plurality of insulated conductors comprising at least one first insulated conductor and at least one second insulated conductor, the positioning comprising:

positioning the at least one first insulated conductor to be substantially parallel to the at least one second insulated conductor.

28. The method of claim 27, wherein the at least one first insulated conductor comprises multiple first insulated conductors or a single first insulated conductor.

29. The method of claim 27, wherein positioning the plurality of insulated conductors further comprises positioning the at least one first insulated conductor to be a specified distance from the at least one second insulated conductor.

30. A system for aligning a plurality of conductors, the system comprising:

a first plurality of posts positioned in a first region; and

a second plurality of posts positioned in a second region,

wherein the first plurality of posts and the second plurality of posts are configured to align the plurality of conductors between the first region and the second region.

31. The system of claim 30,

wherein a post of the first plurality of posts is configured to fix, in the first region, a first end of a conductor of the plurality of conductors, and

wherein a post of the second plurality of posts is configured to fix, in the second region, a second end of the conductor of the plurality of conductors.

32. The system of any of claims 30-31, wherein the first plurality of posts and the second plurality of posts are positioned to maintain a specified distance between at least some of the plurality of conductors.

33. The system of claim 32, wherein the first plurality of posts and the second plurality of posts are further configured to maintain tension in at least some of the plurality of conductors.

34. The system of any of claims 30-33, further comprising:

a first conductor of the plurality of conductors, the first conductor comprising a first end and a second end,

wherein the first end of the first conductor is fixed in the first region by a first post of the plurality of posts, and

wherein the second end of the first conductor is fixed in the second region by a second post of the plurality of posts.

35. The system of claim 34, wherein the first end of the conductor is tied to the first post and wherein the second end of the conductor is tied to the second post.

36. The system of claim 34, further comprising:

a second conductor of the plurality of conductors, the second conductor being aligned between the first region and the second region using the first plurality of posts and the second plurality of posts,

wherein the second conductor is substantially parallel to the first conductor.

37. The system of claim 36, further comprising:

a third conductor of the plurality of conductors, the third conductor being aligned between the first region and the second region using the first plurality of posts and the second plurality of posts,

wherein the first conductor and the second conductor are separated by a first distance, and

wherein the second conductor and the third conductor are separated by a second distance that is substantially equal to the first distance.