CLAIMS

1. An ablation device for pulsed field ablation of a tissue by pulsed electric field, the device comprising:

a catheter having a longitudinal axis and including an expandable basket comprising filaments, the expandable basket includes a ring at its distal end and wherein the filaments are coupled to the ring;

a pulse generator configured to generate electric pulses;

a set of electrodes positioned on the expandable basket, the set of electrodes electrically coupled to the pulse generator and configured to provide a pulsed electric field from the electric pulses;

wherein the catheter includes an outer elongated shaft and an inner elongated shaft and wherein the expandable basket is coupled to the inner elongated shaft by a locking mechanism, wherein the locking mechanism includes a first protrusion and a second protrusion formed on the inner elongated shaft and the ring is positioned between the first protrusion and the second protrusion.

2. The ablation device according to claim 1, wherein the ring is positioned at least partially inside of the expandable basket.

3. The ablation device according to claim 1, wherein the filaments are bent around the ring.

4. The ablation device according to claim 1, wherein the second protrusion includes an atraumatic shape at its most distal portion.

5. The ablation device according to claim 1, wherein the expandable basket comprising filaments braided into a mesh.

6. The ablation device according to claim 1, wherein the filaments are made of nonconductive material.

7. The ablation device according to claim 1, wherein at least one filament of the

filaments includes a lumen and a reinforcement strut positioned within the lumen.

8. The ablation device according to claim 1, wherein the locking mechanism is configured to break the coupling loose in a predetermined axial load on the coupling.

9. The ablation device according to claim 8, wherein the expandable basket is configured to move between a collapsed configuration and an expanded configuration, and wherein the locking mechanism is configured to break the coupling loose when a retraction of the expandable basket is not possible.

10. The ablation device according to claim 8, wherein the predetermined axial load is between 10N and 100N.

11. An ablation device for pulsed field ablation of a tissue by pulsed electric field, the device comprising:

a catheter configured for insertion into a heart of a patient, the catheter having a longitudinal axis and including an expandable basket comprising filaments, the expandable basket comprising a ring at its distal end and wherein the filaments are coupled to the ring;

a pulse generator configured to generate electric pulses;

a set of electrodes positioned on the expandable basket, the set of electrodes electrically coupled to the pulse generator and configured to provide a pulsed electric field from the electric pulses;

wherein the catheter includes an outer elongated shaft and an inner elongated shaft and wherein the expandable basket is coupled to the inner elongated shaft by a locking mechanism, wherein the locking mechanism includes a first protrusion and a second protrusion formed on the inner elongated shaft and the ring is positioned between the first protrusion and the second protrusion.

12. The ablation device according to claim 11, wherein the ring is positioned at least partially inside of the expandable basket.

13. The ablation device according to claim 11, wherein the filaments are bent around the ring.

14. The ablation device according to claim 11, wherein the second protrusion includes an atraumatic shape at its most distal portion.

15. The ablation device according to claim 11, wherein the expandable basket comprising filaments braided into a mesh.

16. The ablation device according to claim 11, wherein at least one filament of the filaments includes a lumen and a reinforcement strut positioned within the lumen.

17. The ablation device according to claim 11, wherein the filaments are made of nonconductive material.

18. An ablation device for pulsed field ablation of a tissue by pulsed electric field, the device comprising:

a catheter configured for insertion into a heart of a patient, the catheter having a longitudinal axis and including an expandable basket comprising filaments, the expandable basket comprising a ring at its distal end and wherein the filaments are coupled to the ring;

a pulse generator configured to generate electric pulses;

a set of electrodes positioned on the expandable basket, the set of electrodes electrically coupled to the pulse generator and configured to provide a pulsed electric field from the electric pulses, the pulsed electric field configured for an ablation of a tissue within a heart of a patient;

wherein the catheter includes an outer elongated shaft and an inner elongated shaft and wherein the expandable basket is coupled to the inner elongated shaft by a locking mechanism, wherein the locking mechanism includes a first protrusion and a second protrusion formed on the inner elongated shaft and the ring is positioned between the first protrusion and the second protrusion.

19. The ablation device according to claim 18, wherein the ring is positioned at least partially inside of the expandable basket.

20. The ablation device according to claim 18, wherein the filaments are bent around the ring.

21. The ablation device according to claim 18, wherein the second protrusion includes an atraumatic shape at its most distal portion.

22. The ablation device according to claim 18, wherein the expandable basket comprising filaments braided into a mesh.

23. The ablation device according to claim 18, wherein at least one filament of the filaments includes a lumen and a reinforcement strut positioned within the lumen.

24. The ablation device according to claim 18, wherein the filaments are made of nonconductive material.

25. An ablation device, the device comprising:

a catheter configured for insertion into a heart of a patient having a longitudinal axis and including an expandable basket comprising
filaments, the expandable basket includes a ring at its distal end and wherein the filaments are coupled to the ring;

a pulse generator configured to generate electric pulses;

a set of electrodes positioned on the expandable basket, the set of electrodes electrically coupled to the pulse generator;

wherein the catheter includes an outer elongated shaft and an inner elongated shaft and wherein the expandable basket is coupled to the inner elongated shaft by a locking mechanism, wherein the locking mechanism includes a first protrusion and a second protrusion formed on the

inner elongated shaft and the ring is positioned between the first protrusion and the second protrusion.

26. The ablation device according to claim 25, wherein the ring is positioned at least partially inside of the expandable basket.

27. The ablation device according to claim 25, wherein the filaments are bent around the ring.

28. The ablation device according to claim 25, wherein the second protrusion includes an atraumatic shape at its most distal portion.

29. The ablation device according to claim 25, wherein the expandable basket comprising filaments braided into a mesh.

30. The ablation device according to claim 25, wherein at least one filament of the filaments includes a lumen and a reinforcement strut positioned within the lumen.

31. The ablation device according to claim 25, wherein the filaments are made of nonconductive material.