CLAIMS

1. A casing joint assembly, comprising:

a casing joint having an upper end and a lower end;

a cylindrical upper coupling joint configured to axially interpose an upper casing section and the upper end of the casing joint, the upper coupling joint having a first portion threadable to the upper casing section and a second portion threaded to the casing joint at the upper end, wherein a diameter of the casing joint assembly is constant between the upper casing section and the upper end of the casing joint;

a joint interface securing the first portion to the second portion, wherein the first portion is made of a first material and the second portion is made of a second material dissimilar to the first material; and

an inner coating applied on an inner radial surface of the upper coupling joint and extending axially across at least the joint interface.

2. The casing joint assembly of claim 1, wherein the first material is selected from the group consisting of stainless steel and a nickel alloy.

3. The casing joint assembly of claim 1 or 2, wherein the second material is selected from the group consisting of aluminum, an aluminum alloy, copper, a copper alloy, a magnesium alloy, titanium, free-cutting steel, cast iron, a low carbon steel alloy, and any combinations thereof.

4. The casing joint assembly of any one of the preceding claims, wherein the inner coating is at least one of an anodized coating, a ceramic, a metal, a polymer, an epoxy, an elastomer, molybdenum sulfide, tungsten carbide, a fluoropolymer, an electrostatic powder, and any combination thereof.

5. The casing joint assembly of any one of the preceding claims, wherein the joint interface is formed by at least one of explosive welding and friction stir.

6. The casing joint assembly of any one of the preceding claims, wherein the joint interface is a threaded interface where the first portion is threadably attached to the second portion.

7. The casing joint assembly of claim 6, further comprising one or more sealing members arranged within the threaded interface to prevent the influx of fluids into the threaded interface.

8. The casing joint assembly of claim 6 or 7, further comprising a thread coating applied to the threaded interface, the thread coating comprising a material selected from the group consisting of an anodized material, a ceramic, a metal, a polymer, an epoxy, an elastomer, molybdenum sulfide, tungsten carbide, a fluoropolymer, an electrostatic powder, a thread-locking compound, and any combination thereof.

9. The casing joint assembly of claim 1, further comprising:

a cylindrical lower coupling joint configured to axially interpose a lower casing section and the lower end of the casing joint, the lower coupling joint having a lower first portion threadable to a lower casing section and a lower second portion threaded to the casing joint at the lower end; and

a second joint interface securing the lower first portion to the lower second portion, wherein the lower first portion is made of the first material and the lower second portion is made of the second material.

10. A well system, comprising:

a string of casing arranged within a wellbore and having an upper casing section and a lower casing section;

a casing joint arranged within the wellbore and interposing the upper and lower casing sections, the casing joint having an upper end and a lower end;

a cylindrical upper coupling joint axially interposing the upper casing section and the upper end of the casing joint, the upper coupling joint having a first portion threaded to the upper casing section and a second portion threaded to the upper end of the casing joint, wherein the first and second portions of the upper coupling joint are secured together at an upper joint interface;

a cylindrical lower coupling joint having a first portion coupled to the lower casing section and a second portion coupled to the lower end of the casing joint,

wherein the first and second portions of the lower coupling joint are secured together at a lower joint interface; and

an inner coating applied on corresponding inner radial surfaces of the upper and lower coupling joints and extending axially across at least the upper and lower joint interfaces,

wherein each first portion of the upper and lower coupling joints is made of a first material and each second portion of the upper and lower coupling joints is made of a second material dissimilar to the first material, and wherein a diameter of the string of casing between the upper and lower casing sections and across the upper and lower coupling joints is constant.

11. The well system of claim 10, wherein the first material is selected from the group consisting of stainless steel and a nickel alloy.

12. The well system of claim 10 or 11, wherein the second material is selected from the group consisting of aluminum, an aluminum alloy, copper, a copper alloy, a magnesium alloy, titanium, free-cutting steel, cast iron, a low carbon steel alloy, and any combinations thereof.

13. The well system of any one of claim 10 to 12, wherein the inner coating is at least one of an anodized coating, a ceramic, a metal, a polymer, an epoxy, an elastomer, molybdenum sulfide, tungsten carbide, a fluoropolymer, an electrostatic powder, and any combination thereof.

14. The well system of any one of claims 10 to 13, wherein the upper and lower joint interfaces are formed by at least one of explosively welding and friction stir welding the first portion to the second portion.

15. The well system of any one of claims 10 to 14, wherein at least one of the upper and lower joint interfaces is a threaded interface where the first portion is threadably attached to the second portion.

16. The well system of claim 15, further comprising at least one of one or more sealing members arranged within the threaded interface and a thread coating applied to the threaded interface.

17. A method, comprising:

arranging a string of casing within a wellbore, the string of casing having an upper casing section, a lower casing section, and a casing joint interposing the upper and lower casing sections, wherein the casing joint has an upper end and a lower end; and

galvanically-isolating the casing joint from the upper and lower casing sections with ~~a~~an cylindrical upper coupling joint and a cylindrical lower coupling joint, the upper coupling joint axially interposing the upper casing section and the upper end of the casing joint and having a first portion threaded to the upper casing section and a second portion threaded to the upper end of the casing joint, and the lower coupling joint axially interposing the lower casing section and the lower end of the casing joint and having a first portion threaded to the lower casing section and a second portion threaded to the lower end of the casing joint,

wherein the first and second portions of the upper and lower coupling joints are each secured together at corresponding joint interfaces, and

wherein each first portion of the upper and lower coupling joints is made of a first material and each second portion of the upper and lower coupling joints is made of a second material dissimilar to the first material, and wherein a diameter of the string of casing between the upper and lower casing sections and across the upper and lower coupling joints is constant.

18. The method of claim 17, wherein galvanically-isolating the casing joint from the upper and lower casing sections further comprises sealing corresponding inner radial surfaces of the upper and lower coupling joints with an inner coating applied on and extending axially across at least the upper and lower joint interfaces.

19. The method of claim 17 or 18, wherein the first material is at least one of stainless steel and a nickel alloy, and wherein the second material is selected from the group consisting of aluminum, an aluminum alloy, copper, a copper alloy, a magnesium alloy, titanium, free-cutting steel, cast iron, a low carbon steel alloy, and any combinations thereof.

20. The method of claim 18, wherein the inner coating is at least one of an anodized coating, a ceramic, a metal, a polymer, an epoxy, an elastomer, molybdenum sulfide, tungsten carbide, a fluoropolymer, an electrostatic powder, and any combination thereof.

21. The method of any one of claims 17 to 20, further comprising forming the upper and lower joint interfaces by at least one of explosively welding and friction stir welding the first portion to the second portion.

22. The method of any one of claims 17 to 21, wherein at least one of the upper and lower joint interfaces is a threaded interface where the first portion is threadably attached to the second portion.

23. The method of claim 22, further comprising preventing an influx of fluids into the threaded interface with one of one or more sealing members arranged within the threaded interface.

24. The method of claim 23, wherein galvanically-isolating the casing joint from the upper and lower casing sections further comprises sealing the threaded interface with a thread coating applied to the threaded interface.