CLAIMS

What is claimed is:

1. A blade for a gas turbine engine comprising:

a body including an airfoil extending in a radial direction from a 0% span position near an airfoil base to a 100% span position at an airfoil tip, the airfoil includes a first portion near the airfoil base with a first density, and includes a second portion near the airfoil tip with a second density, the second density is less than the first density, the second portion including an increasing true chord length in the radial direction.

2. The blade according to claim 1, wherein the second portion is in the range of 90% span to 100% span.

3. The blade according to claim 2, wherein the airfoil has a leading and a trailing edge defining the true chord length, the leading edge provides a leading edge axial position, and the trailing provides a trailing edge axial position.

4. The blade according to claim 3, wherein the leading edge axial position is less positive as a span position in the radial direction increases along the second portion.

5. The blade according to claim 3, wherein the trailing edge axial position is more positive as a span position in the radial direction increases along the second portion.

6. The blade according to claim 3, wherein the leading edge axial position is less positive as a span position in the radial direction increases along the second portion, and the trailing edge axial position is more positive as a span position in the radial direction increases along the second portion.

7. The blade according to claim 2, wherein the airfoil is necked at a midspan region.

8. The blade according to claim 1, wherein the airfoil base includes a platform.

9. The blade according to claim 1, wherein the first portion includes a first material that provides the first density, and the second portion includes a second material that provides the second density and that differs from the first material in composition, the first and second portions are metallurgically bonded to each other in a boundary zone having a mixture of the first material and the second material.

10. An array of blades for a gas turbine engine comprising:

multiple blades circumferentially spaced from one another, each blade includes a body, the body including an airfoil extending in a radial direction from a 0% span position near an airfoil base to a 100% span position at an airfoil tip, the airfoil includes a first portion near the airfoil base with a first density, and the airfoil includes a second portion near the airfoil tip with a second density, the second density is less than the first density, and the second portion includes an increasing true chord length in the radial direction.

11. The array according to claim 10, wherein the second portion is in the range of 90% span to 100% span.

12. The array according to claim 11, wherein the airfoil has a leading and a trailing edge defining the true chord length, the leading edge provides a leading edge axial position, and the trailing provides a trailing edge axial position.

13. The array according to claim 12, wherein the leading edge axial position is less positive as a span position in the radial direction increases along the second portion.

14. The array according to claim 12, wherein the trailing edge axial position is more positive as a span position in the radial direction increases along the second portion.

15. The array according to claim 12, wherein the leading edge axial position is less positive as a span position in the radial direction increases along the second portion, and the trailing edge axial position is more positive as a span position in the radial direction increases along the second portion.

16. The array according to claim 11, wherein the airfoil is necked at a midspan region.

17. The array according to claim 10, wherein the airfoil base includes a platform.

18. The array according to claim 9, wherein the first portion includes a first material that provides the first density, and the second portion includes a second material that provides the second density and that differs from the first material in composition, the first and second portions are metallurgically bonded to each other in a boundary zone having a mixture of the first material and the second material.

19. The array according to claim 9, wherein the array includes turbine blades each having a cooling passage.

CLAIMS

What is claimed is:

1. A blade for a gas turbine engine comprising:

a body including an airfoil extending in a radial direction from a 0% span position near an airfoil base to a 100% span position at an airfoil 5 tip, the airfoil includes a first portion near the airfoil base with a first density, and includes a second portion near the airfoil tip with a second density, the second density is less than the first density, the second portion including an increasing true chord length in the radial direction,

wherein the second portion is in the range of 90% span to 100% span.

2. The blade according to claim 1, wherein the airfoil has a leading and a trailing edge defining the true chord length, the leading edge provides a leading edge axial position, and the trailing provides a trailing edge axial position.

3. The blade according to claim 2, wherein the leading edge axial position is less positive as a span position in the radial direction increases along the second portion.

4. The blade according to claim 2, wherein the trailing edge axial position is more positive as a span position in the radial direction increases along the second portion.

5. The blade according to claim 2, wherein the leading edge axial position is less positive as a span position in the radial direction increases along the second portion, and the trailing edge axial position is more positive as a span position in the radial direction increases along the second portion.

6. The blade according to claim 1, wherein the airfoil is necked at a midspan region.

7. The blade according to claim 1, wherein the airfoil base includes a platform.

8. The blade according to claim 1, wherein the first portion includes a first material that provides the first density, and the second portion includes a second material that provides the second density and that differs from the first material in composition, the first and second portions are metallurgically bonded 5 to each other in a boundary zone having a mixture of the first material and the second material.

9. An array of blades for a gas turbine engine comprising:

multiple blades circumferentially spaced from one another, each blade includes a body, the body including an airfoil extending in a radial direction from a 0% span position near an airfoil base to a 100% span position at an airfoil tip, the airfoil includes a first portion near the airfoil base with a first density, and the airfoil includes a second portion near the airfoil tip with a second density, the second density is less than the first density, and the second portion includes an increasing true chord length in the radial direction,

wherein the second portion is in the range of 90% span to 100% span.

10. The array according to claim 9, wherein the airfoil has a leading and a trailing edge defining the true chord length, the leading edge provides a leading edge axial position, and the trailing provides a trailing edge axial position.

11. The array according to claim 10, wherein the leading edge axial position is less positive as a span position in the radial direction increases along the second portion.

12. The array according to claim 10, wherein the trailing edge axial position is more positive as a span position in the radial direction increases along the second portion.

13. The array according to claim 10, wherein the leading edge axial position is less positive as a span position in the radial direction increases along the second portion, and the trailing edge axial position is more positive as a span position in the radial direction increases along the second portion.

14. The array according to claim 9, wherein the airfoil is necked at a midspan region.

15. The array according to claim 9, wherein the airfoil base includes a platform.

16. The array according to claim 8, wherein the first portion includes a first material that provides the first density, and the second portion includes a second material that provides the second density and that differs from the first material in composition, the first and second portions are metallurgically bonded to each other in a boundary zone having a mixture of the first material and the 15 second material.

17. The array according to claim 8, wherein the array includes turbine blades each having a cooling passage.